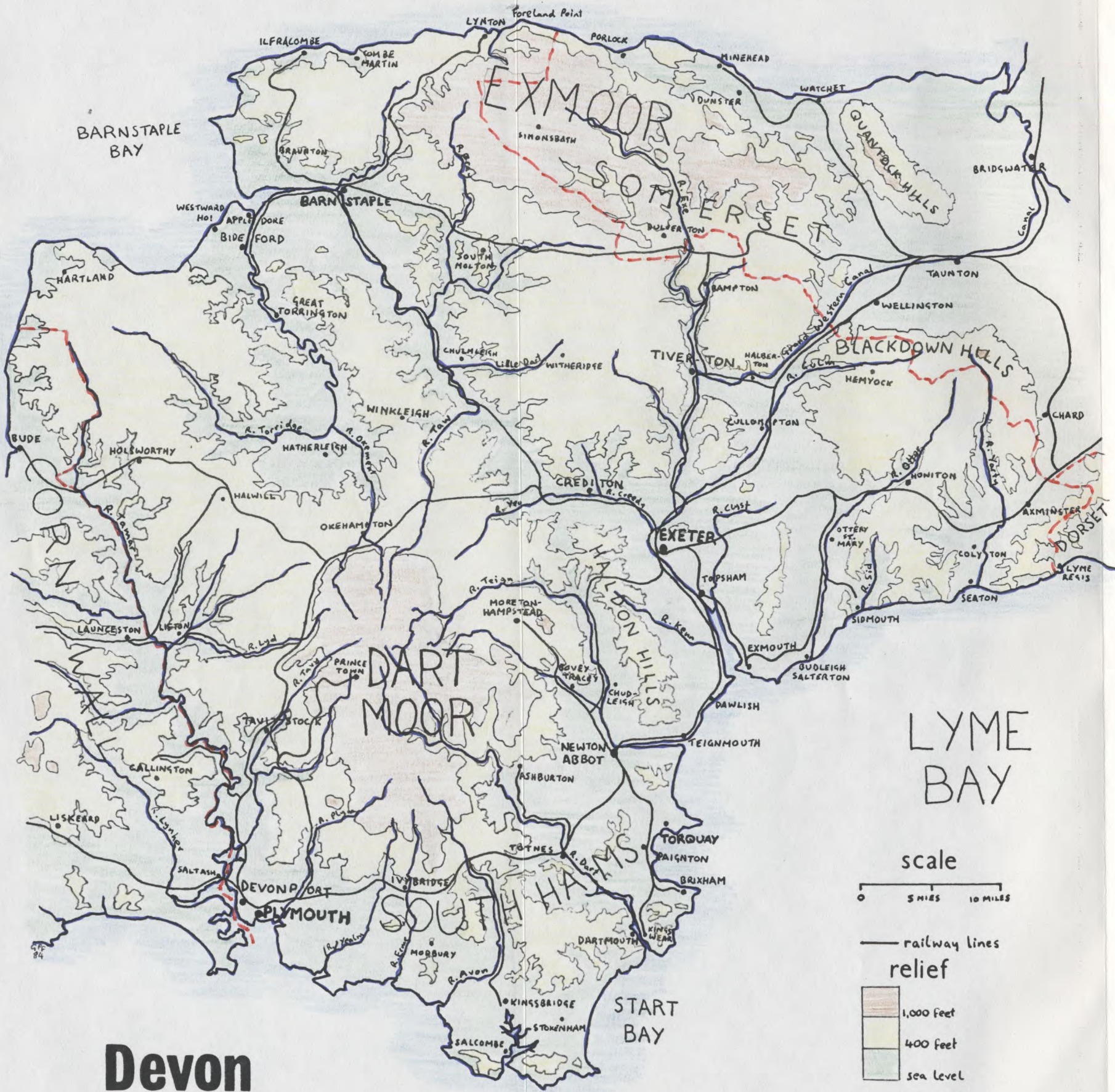


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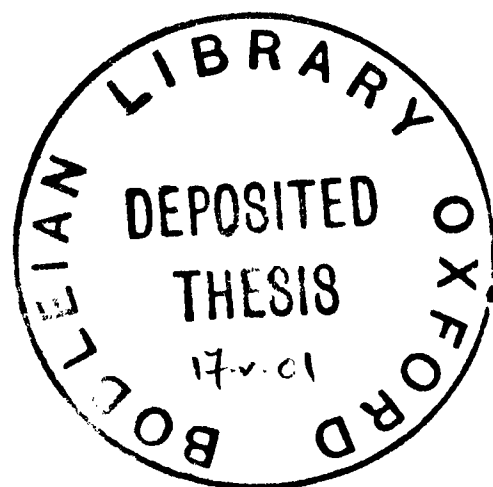
**Determining Indeterminacy:**  
**Vision and Revision in the Writings of Pierre Boulez**

Submitted in partial fulfilment  
of the requirements for the degree of  
D.Phil. in Music

Trinity Term, 2000

KATHRYN WHITNEY

Somerville College, Oxford



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## ABSTRACT

### 'Determining Indeterminacy: Vision and Revision in the Writings of Pierre Boulez'

Kathryn Whitney  
Somerville College

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This thesis investigates the role of Boulez's writings in encouraging a divergent reading of the music of the post-war avant-garde. Taking Nattiez's 1990 assertion that Boulez and Cage 'embody two radically opposed streams of post-war music history' as a point of departure, it examines Boulez's claim to a serially derived, intentional independent musical aesthetic and contrasts it with his ongoing evaluation of the chance procedures of Cage.

Concentrating throughout on Boulez's writings as primary source material, this study traces the composer's account of his independent indeterminate musical work from 1949 through three principal stages. Stage one extends from his meeting with Cage in 1949 to his rejection of Cage's method of tossing dice in 1951. Stage two begins in 1952 and continues to 1957, when Boulez wrote 'Alea' and outlined his conception for the Third Piano Sonata. Stage three extends from 1957 through his 'open-form' compositions and 'works in progress' of the 1960s and 1970s to the premiere of *Répons* in 1981. It also incorporates commentaries written in the 1980s and 1990s by Boulez, Nattiez and others in light of the claim that *Répons* 'redeemed' Boulez's troubled post-war project.

Against this background, each of the chapters addresses a key assumption about the independence of Boulez's indeterminate aesthetic. Chapter One investigates the role of electronic music in Boulez's dissociation from Cage's work after 1952. Chapter Two addresses the claim that the open-form aesthetic of the Third Piano Sonata was a response to the inspiration of the writers James Joyce and Stéphane Mallarmé. Chapter Three examines the status of the Third Piano Sonata as an 'unfinished' composition and studies its aesthetic goals in light of Boulez's compositions in the 1960s and 1970s. Chapter Four explores the claim that *Répons* represented the culmination of Boulez's independent indeterminate aesthetic, and that its structural goals had been unique to Boulez since 1949.

This study is framed by questions about the wider implications of a belief in Boulez's independent indeterminate aesthetic for divergent trends such as Europeanism vs. Americanism, modernism vs. postmodernism and serial structure vs. non-serial structure. In conclusion it suggests that an ongoing tendency toward historical revisionism in Boulez's texts may be a function of the difficulty in articulating an intentional indeterminate aesthetic in light of the serial inheritance.

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## Table of Contents

Abstract	i
List of Abbreviations	iii
Acknowledgements	iv
Illustrations	
John Cage	vi
Pierre Boulez	vii
Introduction	1
1. Writing the Third Piano Sonata	26
2. The Electronic Experiment	63
3. After the 'Unfinished' Third Piano Sonata	103
4. Re-reading <i>Répons</i>	165
Conclusion	216
Catalogue of Principal Works (Boulez)	242
Bibliography	246

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## List of Abbreviations

The following abbreviations are used throughout the notes:

- Boulez and Häusler Pierre Boulez and Josef Häusler, 'Über Répons -- ein Interview mit Josef Häusler', *Schriftenreihe der Heinrich-Strobel-Stiftung des Südwestfunks*, 4 (Kassel, 1985), 7-14.
- Boulez and Deliège Pierre Boulez and Célestin Deliège, *Conversations with Célestin Deliège* (London, 1976)
- Correspondence* Jean-Jacques Nattiez, ed., *The Boulez-Cage Correspondence*, with Françoise Devoine, Hans Oesch and Robert Piencikowski, ed. and trans. Robert Samuels (Cambridge, 1993)
- 'Document 1' All document references refer to documents in Nattiez, *The Boulez-Cage Correspondence*.
- 'Interview' Pierre Boulez and Dominique Jameux, 'An Interview with Dominique Jameux', *Orientations*, 199-202.
- 'Introduction' Nattiez, 'Cage and Boulez: a chapter of music history', *Correspondence*, 3-24.
- Jalons* Pierre Boulez, *Jalons (pour une décennie): dix ans d'enseignement au Collège de France (1978-1988)* (Paris, 1989)
- Orientations* Pierre Boulez, *Orientations: Collected Writings*, ed. Jean-Jacques Nattiez, trans. Martin Cooper (London, 1986).
- Silence* John Cage, *Silence* (London, 1987)
- 'Sonata' Boulez, 'Sonata, que me veux-tu?', *Orientations*, 143-154.
- Stocktakings* Pierre Boulez, *Stocktakings from an Apprenticeship*, collected and presented Paule Thévenin, trans. Stephen Walsh, intro. Robert Piencikowski (Oxford, 1991)
- 'Tendencies' Pierre Boulez, 'Tendencies in Recent Music', *Stocktakings*, 173-79.

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## Acknowledgements

In the course of writing this thesis I have incurred many debts and it is with pleasure that I acknowledge them here. Dr Peter Franklin was the principal supervisor on this project. I am indebted to Professor David Nicholls, who painstakingly carried me through a detailed study of Cage, to Professor Roger Parker for his help and his constant encouragement and to Professor Robert Falck for making music after 1945 so interesting.

This work has been supported by a number of grants and scholarships. I am especially grateful for the generosity of Mr George Yemec, without whose kindness and assistance I would have been unable to come to Oxford initially and to have had the opportunity to stay on to undertake doctoral research. Mrs Margaret Barker was very helpful in providing key funds in the early stages. The Oxford University Faculty of Music was generous in granting a Halstead Scholarship. Graduate Scholarships from Lady Margaret Hall and later Somerville College were especially important to the furthering of this study. Somerville College was also generous in offering travel grants without which key research in Germany could not have been undertaken.

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Sincere thanks are owed to Herr W. Schlüter of the Internationales Musikinstitut Darmstadt for his kind attention, assistance and willing expertise and enthusiasm.

I am grateful to Universal Edition, Vienna for generously lending me a score of Boulez's *Répons* for the duration of my work on the piece. All musical examples from the score of *Répons* in Chapter Four are reproduced with kind permission of Universal Edition.

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Intellectual companionship throughout the course of this work has come especially from Jennifer Bailey, to whose example I am greatly indebted. E. Bradley Strauchen, Suzie Clark, Peter Lynan and especially Ulrike Hahn were generous and incisive proof-readers. Any errors appear despite their labours and are entirely my responsibility. David Beard, Robert Saxton and Robert Sherlaw Johnson have indulged me in many interesting conversations about this music and have offered insights that have greatly influenced my ideas. Jennifer Cony has been a reliable and supportive friend. The music undergraduates of Worcester College, Oxford have been generously flexible and have provided a valuable and often surprising counterpoint to this work through many challenging discussions.

Without the inspiration, support and kindness of Nicola McDonald this study would have been neither started nor sustained. Without the encouragement, time and generosity of Ulrike Hahn, it would have been much more difficult to finish. I offer both these friends my deepest thanks.

Finally, my greatest debt is to H.S. and Emily Whitney for the inspiration of their thinking and for their fathomless faith and encouragement.

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John Cage in 1949



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Pierre Boulez, early 1950s



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Of course, all music is a declaration that betrays  
the composer in the most indiscrete manner.

Boulez (1979)<sup>1</sup>

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<sup>1</sup>Pierre Boulez, 'Gustav Mahler: Why biography?', *Orientations: Collected Writings*, ed. Jean-Jacques Nattiez, trans. Martin Cooper (London and Boston, 1986), 292-294, p. 293.

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## Introduction

From time to time, in the history of culture, there are encounters which, because of the personalities and currents of thought that are brought together through them, take on symbolic value and may even acquire the status of myth. ... The encounter between Cage and Boulez is less well known [but] the intensity of their correspondence ... takes on in retrospect a surprising and significant status, since today they embody two radically opposed streams of post-war music history.

Jean-Jacques Nattiez (1990)<sup>1</sup>

### I

In his introduction to the 1990 publication *The Boulez-Cage Correspondence*, Jean-Jacques Nattiez articulates a reading of the role of Boulez and Cage in shaping music after 1945 that delineates two sharply contrasted compositional developments. Balancing the structural and linguistic achievements of Schoenberg and Stravinsky with the aesthetic urgency of Webern and Messiaen, Boulez's post-war project is said to have taken radical leave of the faltering vestiges of nineteenth-century formalism in music in the first half of the century, while

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<sup>1</sup>Jean-Jacques Nattiez, 'Introduction -- Cage and Boulez: a chapter of music history', *The Boulez-Cage Correspondence*, ed. Jean-Jacques Nattiez, with Françoise Davoine, Hans Oesch and Robert Piencikowski, trans. Robert Samuels (Cambridge, 1993), 3-24, p. 3. Originally published as *Pierre Boulez/John Cage: Correspondance et documents* (Winterthur, 1990). This text is referred to subsequently as *Correspondence*. Nattiez's essay is referred to as 'Introduction'.

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sustaining the fundamental vernacular of the European tradition that preserved his relevance to an evolution stretching back to Bach. Cage, by contrast, is thought to have forged ahead in the 'new world' climate of post-war America, melding the subversive influence of Satie with the non-interventionist ideals of Eastern philosophies to create a separate tradition that was anathema to developments in Europe.<sup>2</sup> The brief period of intimacy in their correspondence after their meeting in Paris in 1949, it is thought, reflected more on the temporary geographical disorientation and premature optimism of the new globalism after the Second World War than it did on a fundamental unity of artistic purpose. As Nattiez suggests, 'in aesthetic terms, the two men's encounter could not have been anything other than a misunderstanding'; as Boulez corroborated in 1968:

The great unity that seemed a possibility twenty years ago has proved to be a myth, a snare and a delusion; what we have instead is different personalities each taking their own courses, sometimes in violent opposition to each other.<sup>3</sup>

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<sup>2</sup>Aldous Huxley's book *The Perennial Philosophy* (New York, 1947) introduced Cage to Zen Buddhism and the writings of Meister Eckhart, Chuang Tze, Huang Po and Lao Tze. See James Pritchett, *The Music of John Cage*, in Arnold Whittall, gen. ed., *Music in the 20th Century* (Cambridge, 1993), 37. Cage's interests in Indian philosophical traditions in the early post-war period focused on *The Gospel of Sri Ramakrishna* (Madras, 1947) and Ananda K. Coomaraswamy's *The Transformation of Nature in Art* (Cambridge, Mass, 1934) and *The Dance of Shiva* (Bombay, 1948).

<sup>3</sup>Nattiez, 'Introduction', 15; Pierre Boulez, 'Where are we now?', in Pierre Boulez, *Orientations: Collected Writings*, ed. Jean-Jacques Nattiez, trans. Martin Cooper (London, 1985), 445-463, p. 447; first given as a lecture in 1968; originally published in part as 'Où en est-on?' in *Le Monde de la musique*, 2 (July-August, 1978), 20-22.

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This idea of a 'violent opposition' in the works and writings of Boulez and Cage -- like Nattiez's belief that the agreement in their early writings is 'surprising' -- is part of a wider critical reading of these composers and their impact on the post-war period.<sup>4</sup> Jameux writes that 'it is amusing' to note that Boulez's experiments with total serialism between 1948 and 1951 coincided with his friendship with Cage, 'the musician-poet of chance, contemplation and improvisation'.<sup>5</sup> Boulez 'found his own way to a controlled use of chance', Revill suggests, 'finding his explanatory route by the discovery of a work by Stéphane Mallarmé', a belief corroborated by Griffiths.<sup>6</sup> Revill maintains that Cage in fact 'resented' his work being 'conflated' with that of Boulez, whose 'aims are completely different' -- in reality, any 'direct influence ... is slight'.<sup>7</sup> Stacey suggests an even stronger polarisation: the 'pre-eminent position' Boulez attained through the 'creation of a new musical language and syntax, which drew on Webern's serial technique and Messiaen's rhythmic awareness' in the late 1950s, was 'threatened and

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<sup>4</sup>Boulez, 'Where are we now?', 447; Nattiez, 'Introduction', 3.

<sup>5</sup>Jameux, *Pierre Boulez*, trans. Susan Bradshaw (London, 1991), 52-53.

<sup>6</sup>David Revill, *The Roaring Silence: John Cage, a Life* (London, 1992), 175. Revill is probably referring to the 1957 Paris publication of Mallarmé's *Livre*, which bears close resemblance to Boulez's Third Piano Sonata of the same year. See Pierre Boulez, 'Sonata, que me veux-tu?', in Boulez, *Orientations*, 143-154, pp. 146-147. See also Paul Griffiths, *Boulez* (London, 1978), 42-43.

<sup>7</sup>Revill, *The Roaring Silence*, 176.

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overtaken by the anarchic influence of John Cage, who led composers ... away from the world of total serialism to that of music-theatre and chance-music'.<sup>8</sup> Brian Eno, in his 1999 Foreword to the second edition of Michael Nyman's *Experimental Music: Cage and Beyond*, forcefully underlines the extent of contemporary certainty about this fundamental distinction. He writes:

[In] the mid- to late sixties, I attended an art college which was in the same building as a very large music college. I organised several 'musical events' ... some of which included rather big names in the new music field. I recall only one music student attending, once. Whereas the avant-garde stuff -- Stockhausen, Boulez and the other serialist Europeans -- could still be seen as a proper site for 'real' musical skills, and was therefore slowly being co-opted into the academy, the stuff that we were interested in was so explicitly anti-academic that it often even claimed to have been written for *non-musicians*.<sup>9</sup>

## II

These foundational accounts of the role of Boulez and Cage in shaping parallel developments in post-war music have become entrenched and offer considerable scope for examining the mechanisms through which the belief in the divergent reading of the post-war period has evolved. The idea that their early intimacy had no lasting effect on their work despite their

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<sup>8</sup>Peter Stacey, *Boulez and the Modern Concept* (Aldershot, 1987), vii.

<sup>9</sup>Brian Eno, 'Foreword', in Michael Nyman, *Experimental Music: Cage and Beyond* (Cambridge, 1999), xi-xviii, p. xi. See also Robert Piencikowski, 'Introduction', in Pierre Boulez, *Stocktakings from an Apprenticeship*, collected by Paule Thévenin, trans. Stephen Walsh (Oxford, 1991), xiii-xxix, pp. xxvi, xxviii; and Pritchett, *The Music of John Cage*, 48.

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shared pursuit of an aesthetic of indeterminacy, in particular, is ripe for reassessment, as is the assumption that this reading correctly reflects the evidence of the composers' own accounts. The opinion that Boulez's and Cage's compositional projects diverged from the early 1950s stems from their opposed critical traditions, their dissimilar structural approaches and their apparently incompatible musical aesthetics. The examination of these factors is a first route into a wider investigation of the reception of their work and the role of Boulez's writings in perpetuating these accounts.

### *1. Critical traditions*

The differing nature of the critical traditions on the two composers lies at the core of the current divergent reading. Scholarship on Boulez and Cage, which for the most part post-dates the 1960s, has developed in parallel, thus furthering the notion of the two fundamentally distinct compositional streams. The independence of these critical traditions and their lack of a shared framework has had lasting impact not simply on the dissemination of knowledge about the two composers, but on the nature of that knowledge, and on the types of critical dialogue it has been used to support.

Boulez's prominence as a lecturer on the European new music circuit -- in particular his strong presence at the Summer Courses for New Music at Darmstadt in the late 1950s and early 1960s and at Basle between 1960 and 1963 -- offered him

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unprecedented influence over compositional trends in Europe.<sup>10</sup> The publication of both his *Musikdenken Heute* and its French translation *Penser La Musique aujourd'hui* in 1963 attests to his early popularity. The appearance of the 1971 English translation *On Music Today* precipitated first-generation monographs on Boulez in the later 1970s (Peyser, 1977; and Griffiths, 1978), and these works, together with the influential English translation of *Conversations with Célestin Deliège* (1976), established an independent tradition of Boulez scholarship in English.<sup>11</sup> The publication of a collection of Boulez's writings edited by Nattiez under the title *Orientations* in 1986 (an English translation of *Points de repère* in 1980/ revised 1985) confirmed this development and coincided with the appearance of second-generation monographs

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<sup>10</sup>Boulez's lectures of 1960-61 were especially influential. See (Darmstadt) 'Aesthetics and the Fetishists', *Orientations*, 31-43; 'Taste: "the Spectacles Worn by Reason"?'', *Orientations*, 44-62; 'Putting the Phantoms to Flight', *Orientations*, 63-83; 'The Teacher's Task', *Orientations*, 119-128; 'Towards a Conclusion', *Orientations*, 97-99; 'Form', *Orientations*, 90-96; 'Time, Notation and Coding', *Orientations*, 84-89; (Donaueschingen) 'Poetry -- Centre and Absence -- Music', *Orientations*, 183-198. Pierre Boulez, *Musikdenken Heute-1* (Mainz, 1963); French trans. as *Penser la musique aujourd'hui* (Paris, 1963). Boulez's first visit to Darmstadt was in 1952, when he appeared to introduce his electronic *Etudes* and to hear his Second Piano Sonata performed by Yvonne Loriod. He lectured there in 1956, 1959, 1960, 1961 and 1965 (Jameux, *Pierre Boulez*, 117). Boulez was also scheduled to lecture in 1958, although withdrew to work on *Poésie pour pouvoir*. He was replaced by John Cage (Jameux, *Pierre Boulez*, 113).

<sup>11</sup>Pierre Boulez, *On Music Today*, trans. Susan Bradshaw and Richard Rodney Bennett (London, 1971); Joan Peyser, *Boulez: Composer, Conductor, Enigma* (London, 1977); Griffiths, *Boulez: Pierre Boulez and Célestin Deliège, Conversations with Célestin Deliège* (London, 1976).

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in French and English by Jameux (both in 1984) and in German by Hirsbrunner (1985).<sup>12</sup> Within twenty-five years of his initial period of influence at European new music schools, Boulez had become the focus of a significant critical tradition.

The availability of a wealth of historical material in these foundational studies was instrumental in initiating a first stage of critical reflection on Boulez and his contribution to wider post-war intellectual debates in the late 1980s and early 1990s. In particular, a period of collaboration between Boulez and Nattiez (1989, 1993) developed the aesthetic themes in Boulez's numerous essays and interviews since the early 1950s, preparing the way for later work on the significance of his work in a broader critical climate.<sup>13</sup> By the end of the twentieth century, this focus dominated scholarship on Boulez, which began to look beyond the compelling quality of his compositions to his greater

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<sup>12</sup>Boulez, *Orientations*; Jameux, *Pierre Boulez* (originally published in French, by Librairie Artheme Fayard, Fondation SACEM, France, 1984); Theo Hirsbrunner, *Pierre Boulez und sein Werk* (Laaber, 1985).

<sup>13</sup>See especially Pierre Boulez and Jean-Jacques Nattiez, *Jalons pour une décennie: dix ans d'enseignement au Collège de France (1978-1988)* (Paris, 1989); Jean-Jacques Nattiez, ed., *Le Combat de Chronos et d'Orphée* (Paris, 1993). Boulez's own contextualising of the 'symbolic' significance of his serially inspired musical structures in 'Sound, Word, Synthesis' in 1958 and 'Poetry -- Centre and Absence -- Music' in 1962 has also contributed to this differentiation. It forms the basis of a relatively impermeable Nattiez-Boulez critical alliance, reminiscent of the symbiotic relationship between Adorno's criticism and the music of the Second Viennese School. See Theodor W. Adorno, *Philosophy of Modern Music*, trans. Anne G. Mitchell and Wesley V. Blomster (London, 1973) and *Berg: Master of the Smallest Link* (Cambridge, 1993). These aspects of Boulez scholarship are addressed in Chapter Four.

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contribution to contemporary musico-cultural dialectics. His preservation of the ideals of musical modernism in the face of what appeared to be advancing postmodernist complacency, in particular, was acknowledged by cultural commentators from a wide range of critical backgrounds.<sup>14</sup>

Cage scholarship, by marked contrast, has remained isolated from the mainstream of the Euro-centric critical dialectic; in turn, the furthering of an historical notion of the politico-philosophical relevance of post-war music to trends in twentieth-century cultural criticism has proceeded with little direct reference to Cage and the American experimental tradition.<sup>15</sup> In part, this is owing to the fact that, despite the publication of texts like 'Experimental

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<sup>14</sup>For accounts of the relationship between these critical trends and developments in twentieth-century music, see especially Arnold Whittall, 'Millennial Prelude', in his *Musical Composition in the Twentieth Century* (Oxford, 1999), 1-7; see also his 'Introduction', in *Music Since the First World War* (Oxford, 1995), 1-6; for introductions to the aesthetics of musical modernism, see Max Paddison, *Adorno, Modernism and Mass Culture: Essays on Critical Theory and Music* (London, 1996); and 'Musica moralia', in Robert W. Witkin, *Adorno on Music* (London and New York, 1999), pp. 1-27. The work of Alastair Williams (1997), in particular, made explicit the hermeneutical richness of Boulez's compositions, while underlining the essentiality of his music and aesthetics to the wider critical environment. See Alastair Williams, *New Music and the Claims of Modernity* (Aldershot, 1999).

<sup>15</sup>See especially Theodor W. Adorno, *Philosophy of Modern Music*; Walter Benjamin, 'The Work of Art in the Age of its Technical Reproduction', in Hannah Arendt, ed., *Illuminations*, trans. Harry Zohn (New York, 1955), 219-245; Herbert Marcuse, *The Aesthetic Dimension* (Boston, 1978); Terry Eagleton, *The Ideology of the Aesthetic* (Oxford, 1990); Peter Bürger, *Theory of the Avant-garde*, trans. Michael Shaw, (Minneapolis, MN, 1984). For 'postmodernism' and the American experimentalists, see Whittall, 'Introduction', pp. 3-4; and Williams, *New Music and the Claims of Modernity*.

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Music: Doctrine' in the London journal *The Score* in 1955, and his appearance at Darmstadt in 1958, Cage's influence in Europe remained marginal.<sup>16</sup> The publication of Cage's writings in *Silence* and *A Year from Monday* in London in 1968, Kostelanetz's collection *John Cage* in London in 1971 and the first edition of Nyman's *Experimental Music: Cage and Beyond* in 1974 failed to ignite widespread musicological debate at a time when the view of Boulez as an important player in post-war critical commentary was beginning to crystallise. Furthermore, following the publication of Kostelanetz's 1988 *Conversing with Cage*, the tenor set by studies on the composer became largely self-referential. The tendency of these writers to create an image of Cage as the prophet of a new, essentially anti-European music ensured the texts remained isolated, making the task of drawing the composer and his works into the mainstream of critical forum exceptionally difficult.<sup>17</sup>

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<sup>16</sup>'Experimental Music: Doctrine', in John Cage, *Silence* (London, 1968), 13-17; Cage's Darmstadt lectures were: 'Composition as Process I: Changes', *Silence*, 18-34; 'Composition as Process II: Indeterminacy', *Silence*, 35-40; 'Composition as Process III: Communication', *Silence*, 41-56. See note 10.

<sup>17</sup>John Cage, *Silence* (originally published Middletown, CT, 1961); John Cage, *A Year from Monday* (London, 1968; published Middletown, CT, 1968); and Richard Kostelanetz, ed., *John Cage* (London, 1971; first published New York, 1970); Michael Nyman, *Experimental Music: Cage and Beyond*, first edition (London, 1974). It is worth noting that the dust jacket to the 1999 edition calls the book 'an eye-witness account of the essentially Anglo-American post-war musical tradition loosely associated with the music and idea of John Cage'. Richard Kostelanetz, *Conversing with Cage* (New York, 1988); see also Richard Kostelanetz, ed., *Writings about John Cage* (Ann Arbor, 1993); Richard Kostelanetz, *John Cage explained* (New York and London, 1996); Richard Kostelanetz, *John Cage, Writer: Previously Uncollected Pieces* (New York, 1993); Marjorie

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This critical separation has been compounded by the fact that historical monographs on Cage have been unusually late to appear; Revill's *The Roaring Silence* (1992) -- published in the same year as Cage's death -- preceded Pritchett's *The Music of John Cage* (1993) by months, although Peyser's first study of Boulez was by then more than a decade old. Additionally, despite the extensive work in print on Boulez by the 1990s, these studies marginalise Cage's contribution, mentioning his association with Boulez and the European avant-garde only peripherally.<sup>18</sup> Despite the range of possibilities for engaging Cage and his works with wider trends in twentieth-century music available to these authors, none attempts a wider assessment of his works or aesthetic. The space allocated to 'contextualising' Cage's work in light of European activity in these studies, for example, extends only to indirect comparison and discussions of his preference for 'Eastern' over 'Western' musical and philosophical models.

## ***2. Structural approach***

The contrast between the advanced, wide-ranging critical treatment of Boulez and the narrower independent tradition of Cage scholarship is owing in part to the general perception of

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Perloff and Charles Junkerman, *John Cage: Composed in America* (Chicago and London, 1994); and Sam Richards, *John Cage as--* (Charlbury, 1996).

<sup>18</sup>Pritchett (*The Music of John Cage*) claims to 'aim to present a coherent picture of the composing Cage' (5), for example, but makes no attempt to contextualise his work with reference to composers outside the experimental tradition and features only one sentence linking Cage to Boulez (48).

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each composer's musical agenda. The difficulty in historicising Cage, although an integral part of his own compositional project, for example, played a significant role in its reception. As Boulez summarised, the typical reaction to Cage in the 1950s was one of intentional polarisation:

In Darmstadt between 1952 and 1958, the discipline of serialization was so severe that it was ridiculous. Cage represented a liberation from this. In his mind, psychology and theatre are more important than the structural aspects of a work. In 1958 Cage came to Europe with a bagful of tricks, of theatrical gimmicks. It was because of the tricks that I was repelled; one cannot recite jokes forever.<sup>19</sup>

A second assumption underlying Boulez's comment was more enduring, however: that the American experimental and the European schools were divided by the issue of serialism. While the pursuit of post-Webernian serialism drove Darmstadt composers throughout the post-war period, little trace of its influence seemed to be present in Earl Brown's *December 1952*, Feldman's *Projection II* (1951) or Cage's *4'33"* (1952) (Example One).<sup>20</sup>

In Boulez's output, the preservation of a serial or serially inspired formal structure has remained central.<sup>21</sup> As

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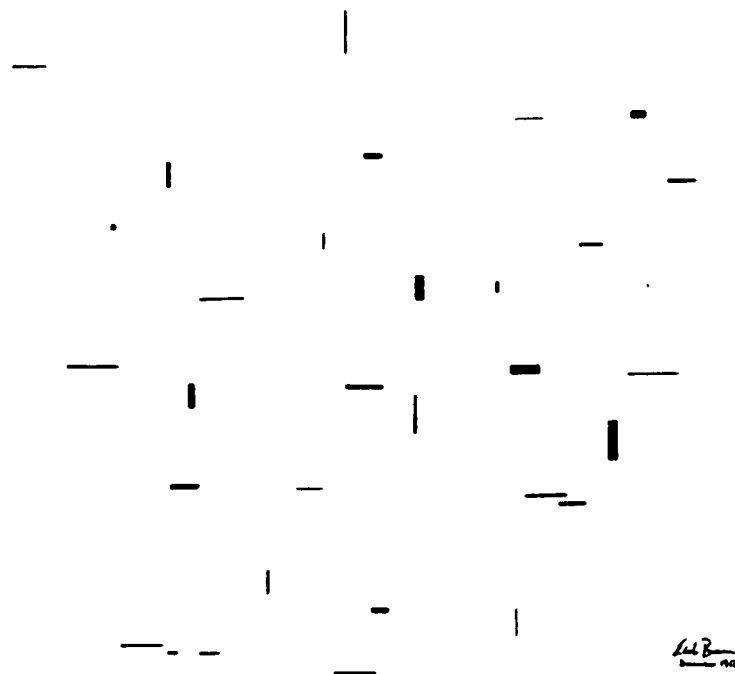
<sup>19</sup>Peyser, *Boulez: Composer, Conductor, Enigma*, 140.

<sup>20</sup>For a recent discussion of the reception of these two schools, see Michael Chanan, 'Towards Postmodernism', in his *From Handel to Hendrix: the Composer in the Public Sphere* (London and New York, 1999), 271-311, especially pp. 291-308.

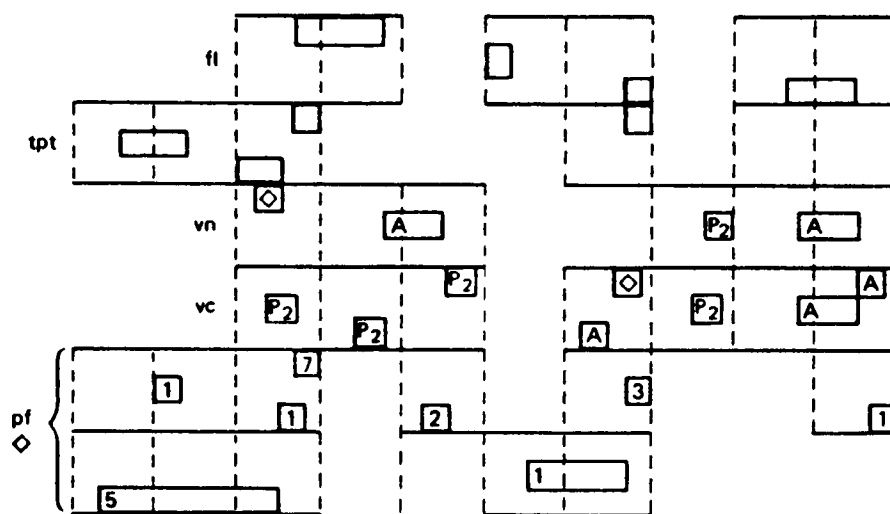
<sup>21</sup>For representative discussions of serial procedures in Boulez's works and writings not discussed elsewhere in this study, see his 'Aesthetics and the Fetishists', 37; 'The Teacher's Task', 121; 'The System Exposed', *Orientations*, 129-142; and Boulez and Deliège, *Conversations*, especially pp. 40-42, 49-57, 90-91. See also Griffiths, *Boulez*, 8-27; Jean-Jacques Nattiez, 'On Reading Boulez', *Orientations*, 11-28, pp.

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**Example One: Earle Brown, December 1952**



**Morton Feldman, *Projections II***



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18-22; György Ligeti, 'Pierre Boulez: Decision and Automatism in Structure Ia', *Die Reihe*, 4 (1985), 36-62; William G. Harbison, 'Performer Indeterminacy and Boulez' Third Sonata', *Tempo*, 169 (June 1989), 16-20; Brigitte Schiffer, 'Boulez's "Notations I-IV"', *Tempo*, 136 (March, 1981), 44-46; Allen Edwards, 'Boulez's "Doubles" and "Figures Doubles Prismes": A Preliminary Study', *Tempo*, 185 (June, 1993), 6-17; Philip Bracanian, 'The Abstract System as Compositional Matrix: An Examination of Some Applications by Nono, Boulez and Stockhausen', *Studies in Music*, 5 (1971), 90-114; Bayan Northcott, 'Boulez's Theory of Composition', *Music and Musicians*, 20 (December, 1971), 32-36; and David Gable, 'Boulez's Two Cultures: The Post-War European Synthesis and Tradition', *Journal of the American Musicological Society*, 43.3 (Fall, 1990), 426-456.

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the following chapters will show, they have been essential factors in works as different as *Structures I* (1951), *Le Marteau sans maître* (1954), 'Constellation-Miroir' from the Third Piano Sonata (1957), *Pli selon pli* (1957-62), '*...explosante-fixe...*' (1972) and *Répons* (1981). Boulez has stated that his interest in experimenting with the method stemmed from the example of Webern, whose Second Cantata, Op. 31 in particular offered a convincing solution to the problem of unifying musical texture after the loss of functional harmony by deriving the vertical, horizontal and diagonal aspects of the piece from the same chord.<sup>22</sup> In his early *Livre* for string quartet (1948-49), Boulez began to work toward achieving the 'generalisation of serial technique', a procedure that was aimed at unifying pitch, intensity, duration and dynamics in a texture governed by the same structural laws.<sup>23</sup> In the first book of *Structures* (1951-52) -- and especially in the 'total serial' movement *Ia* -- he took this experiment to its extreme and applied the principle of serial permutation across each of the elements of sound. As Boulez explained,

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<sup>22</sup>Boulez and Deliège, *Conversations*, 90. The influence of Messiaen, with whose early work on his 'Modes de valeur et d'intensités' (1949-1950) Boulez was also familiar, is also apparent. For Boulez's assessment of his early 'serial' interests, see his 'Possibly...', *Stocktakings*, 111-140; 'Schoenberg is dead', *Stocktakings*, 209-214; 'The Current Impact of Berg (the Fortnight of Austrian Music in Paris)', *Stocktakings*, 183-187; 'The System Exposed', *Orientations*, 129-142; 'Schoenberg the Unloved?', *Orientations*, 325-329; 'The Stravinsky-Webern Connection', *Orientations*, 364-369; 'Olivier Messiaen', *Orientations*, 404-419.

<sup>23</sup>Boulez and Deliège, *Conversations*, 49-50. See also, Boulez, 'The System Exposed', 137.

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this led him to a conclusion about the natural outcome of the evolution of the serial method that was to become foundational to his work:

...this sort of absurdity, of chaos and mechanical wheels-within-wheels tending almost towards the random, was completely intentional and has probably been one of my most fundamental experiments as a composer. ... At that point disorder is equivalent to an excess of order and an excess of order reverts to disorder. The general theme of this piece is really the ambiguity of a surfeit of order being equivalent to disorder. This equivalence between disorder and order is finally overthrown, becoming an opposition between the two.<sup>24</sup>

Boulez's belief that a composer can create 'interchangeable structures, counterpoints of structures' in a piece where 'the serial structure defines its universe entirely' has had lasting impact, and, as we shall see in the following chapters, it has been the focus of both his compositions and his extensive writings.<sup>25</sup> The conviction that indeterminacy entered a composition as part of a serially derived 'opposition' between order and disorder is especially important to his post-war model of musical unity. In particular, it is the key structural factor sustaining the belief that his vastly expansive open-form compositions were intentional objects derived from the composer's will.

In Cage's compositions, by contrast, the question of a 'serial' interpretation of his chance-derived and open-form structures has been largely ignored. Although writers such as Griffiths have raised the question of a connection between

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<sup>24</sup>Boulez and Deliège, *Conversations*, 56-57.

<sup>25</sup>Boulez, 'The System Exposed', 140.

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Cage's indeterminate compositions and the open-form experiments of Darmstadt composers in the 1950s, the association has been understood not as a shared pursuit of serially inspired compositional structures, but as a related interest in deriving independent musical material.<sup>26</sup> Although Cage has been viewed as an 'experimental' rather than a 'serial' composer, his 1937 essay 'The Future of Music: Credo' clarified his early understanding of the importance of serial procedure to twentieth-century music. There, he wrote that in the music of the future, 'new methods [of composition] will be discovered, bearing a definite relationship to Schoenberg's twelve-note system'.<sup>27</sup> Despite the considerable potential for an attempt at a serial reading of Cage's work embodied in this statement, its implications have yet to be investigated. Instead, critics have read Cage's move to embrace indeterminacy as the outcome of a combination of musical and non-musical interests: his experiments with percussion and the organisational potential of rhythm in the 1940s are said to have led to the prepared piano

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<sup>26</sup>Paul Griffiths, *Modern Music and After: Directions since 1945* (Oxford, 1995), 104. Cage's pieces for prepared piano were especially influential in this respect. This theme recurs in Boulez's writings and in the criticism of Jameux and Nattiez, a fact that is discussed in detail in the chapters that follow. It also intersects interestingly with the Adornian 'dialectic of musical material', a connection relevant to the compositions of both Boulez and Cage that falls outside the scope of this study. The theory derives from Adorno's *Aesthetic Theory* and *Philosophy of New Music*. For commentaries, see especially Max Paddison, *Adorno's Aesthetics of Music* (Cambridge, 1997), pp. 65-107, 149-183, 185-186, 218-262, 263-278; and 'The Concept of Musical Material: Some Issues', in *Adorno, Modernism and Mass Culture*, 117-124.

<sup>27</sup>John Cage, 'The Future of Music: Credo', *Silence*, 3-6, p. 5.

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and 'gamut technique', while his use of 'chance procedures' in pieces such as *Music as Changes* (1951) was derived to a significant degree from his interest in Zen Buddhism, which encouraged him to create music that reflected non-interventionist principles.<sup>28</sup>

### 3. *Music aesthetics*

Few post-war commentators have construed a connection between Cage's 1937 statement and the composition he called his 'greatest work', the 'silent' piece *4'33"* (1952).<sup>29</sup> The difference in the perception of Cage's 'random' structures and Boulez's model of derived indeterminacy drives the divisive reading of their contributions to music in the post-war period.<sup>30</sup> The dependence of this division on the perceived seriousness with which each composer engaged with the European tradition has also had implications for the analytical treatment of their pieces, however, and for their placement in the wider post-war socio-cultural environment. Nattiez has suggested that Cage thought of post-Webernian serially inspired

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<sup>28</sup>For a discussion of Cage's rhythmic structure in the 1940s and the use of 'gamut technique', see Pritchett, *The Music of John Cage*, 36-60. For Cage's account of the influences on *Music of Changes*, see especially his 'Composition: to Describe the Process of Composition used in *Music of Changes* and *Imaginary Landscape No. 4*', *Silence*, 57-59.

<sup>29</sup>An exception to this rule is found in Jos De Mul, *Romantic Desire in (Post)modern Art and Philosophy* (Albany, New York, 1999), 212. The implications of the recent treatment of Cage in philosophical and socio-cultural texts will be addressed in the Conclusion to this study.

<sup>30</sup>Richard Kostelanetz, *Conversing with Cage*, 66.

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structures as a means to an end -- a convenient tool with which to fulfil his desire 'to organise the temporal unfolding of the work in a context where chance already rules, for reasons that are more social than musical'.<sup>31</sup> While Cage's exploitation of the method was limited to the brief use of a method of note-by-note control, Nattiez maintained that Boulez understood that 'writing serial music involved more than being able to count up to twelve'.<sup>32</sup> While Boulez employed the concept of serialism as a constructive principle designed to exploit the structure-determining potential of form and material throughout his compositions, Cage pursued serial-type structures only rarely and then as a means to another non-musical end.

This reading of conflicting attitudes toward the preservation of the serial inheritance is important and is the point where their perceived differences as men become conflated with their apparently divergent structural approaches. It is these associations -- and the belief, in particular, that they are representative of the composers' own accounts of their work -- that have placed Boulez and Cage on opposite sides of the post-war aesthetic divide between musical modernism and postmodernism. The idea that an interest in developing the structural and aesthetic possibilities of serialism is unique

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<sup>31</sup>Nattiez, 'Introduction', 15.

<sup>32</sup>Nattiez, 'Introduction', 14. Nattiez supports his statement by quoting from Boulez's correspondence. Boulez wrote to Cage in a letter in January 1950: 'I don't agree with what you say about the sort of series which is a means of generating structure (see Webern). And obviously I don't agree with you about Satie...' (Document 6, *Correspondence*, 43-46, p. 45).

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to Boulez goes some way to explaining the marginalisation of Cage from post-war discussions of a Euro-centric critical dialectic. Modernism's essentially political focus on the symbolic representation of fragmentation and isolation in a musical texture unified by a guiding fundamental system, in particular, would seem to have little critical scope for accommodating a composer who could write that 'music means nothing as a thing' and 'the relevant action is theatrical, inclusive and intentionally purposeless'.<sup>33</sup> Boulez's explanations of the designs supporting his serially conceived structures, by contrast, appear to fortify this differentiation.<sup>34</sup> His commentaries suggest that his pieces

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<sup>33</sup>John Cage, 'Forerunners of Modern Music', *Silence*, 62-66, p. 64; John Cage, 'Experimental Music: Doctrine', *Silence*, 13-16, p. 14. On the music of the Second Viennese School, see Adorno, *Philosophy of Modern Music*; for commentaries, see Paddison, *Adorno, Modernism and Mass Culture*; Witkin, *Adorno on Music*, 129-143; and Brian O'Connor, ed., *The Adorno Reader* (Oxford, 2000), 280-303.

<sup>34</sup>Jean-Jacques Nattiez lists Adorno as one of 'the men who have been landmarks in [Boulez's] life' ('On Reading Boulez', 26). Boulez's texts begin to mention Adorno from the early 1960s. Boulez concurs with Adorno's assessment of Webern's *Bagatelles* in 'Aesthetics and the Fetishists' (1961), 39; he discusses, although in part differs with, Adorno's assessment of Wagner in 'Approaches to *Parsifal*' (1970), *Orientations*, 245-259, pp. 254-55 and 'The Ring' (1976), *Orientations*, 260-291, pp. 260, 270. Boulez briefly outlines an Adornian interpretation of the crisis of musical language in the early post-war period in 'Stravinsky: Style or Idea? In Praise of Annesia' (1971), *Orientations*, 349-359, p. 349 and 'Lulu' and 'A Short Post-script on Fidelity' (both 1979), *Orientations*, 380-403, pp. 381, 385, 390. Boulez's only text dealing with Adorno as a subject is the short obituary titled 'T. W. Adorno' (1969), *Orientations*, 517-518; originally published in French as 'T. W. Adorno: en marge de la, d'une disparation', *Melos* (September, 1969), 85-86. Boulez's discussion of 'modernism' in the works of Debussy is interesting. See his 'Claude Debussy', *Stocktakings*, 259-277, pp. 266-67, 275, 277; 'Near and Far', *Stocktakings*, 141-157, p. 155.

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feature indeterminacy as part of what Adorno has called 'ein positives Negativum' -- a feature brought about as part of a crisis of meaning when the design of a composition becomes self-conscious, creating 'development' by turning inward and 'negating' itself.<sup>35</sup> For Boulez, the indeterminacy in his compositions was an essential part of his serially derived musical systems; it was an especially expansive part of a basic compositional tool, but one with uniquely self-referential expressive potential. As he wrote, in a serially derived indeterminate composition:

We may ... conceive of musical structure from a dual viewpoint -- on the one hand, the activities of serial combination where the structures are generated by *automatism* of the numerical relations. On the other, directed and interchangeable combinations where the arbitrary plays a much larger role. The two ways of viewing musical structure can clearly furnish a dialectical and extremely efficacious means of musical development.<sup>36</sup>

### III

The separate critical traditions of Boulez and Cage scholarship, the apparent disagreement over the role of

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<sup>35</sup>Theodor W. Adorno, *Aesthetic Theory*, ed. Gretel Adorno and Rolf Tiedemann, trans. Christian Lenhardt (London, 1984), 219. See also his *Negative Dialectics*, trans. E. B. Ashton (London, 1973). This idea is discussed at length also in Paddison, *Adorno, Modernism and Mass Culture*, 45-80; and Witkin, *Adorno on Music*, 1-27, 108-128 and 129-143, 188-191, 195-197. See also 'The Autonomy of Art', in O'Connor, *The Adorno Reader*, 239-263. A wider discussion of this important issue falls outside the scope of this study.

<sup>36</sup>Boulez, 'The System Exposed', 141. In a central text on indeterminacy (1957), Boulez includes a similar description. See his 'Alea', *Stocktakings*, 26-38, pp. 33-35.

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serialism in their compositional structures and the polarisation of their modernist and postmodernist aesthetics are key currencies in what Nattiez called the 'symbolic value' of the Boulez-Cage encounter.<sup>37</sup> The evidence that their once intimate correspondence changed irrevocably when their compositions began to diverge in the early 1950s has bolstered the estimations of these critical readings, which have themselves gone on to play an important role in shaping the reception of the post-war period generally. The role of composer commentaries in sustaining critical readings is especially justified in the climate of the post-war avant-garde. 'Art is waiting to be explicated', Adorno has insisted; post-serial indeterminate compositions would seem to demand two types of analysis in addition to the act of composition: an interpretation of the work's structure and meaning, and a commentary that would 'develop a concept of understanding itself in relation to the art works'.<sup>38</sup>

The importance of both Boulez and Cage to the shaping of their own critical reception is owing in measurable part to the symbiotic relationship between composition and commentary typical of a post-war analysis of the modernist artistic condition. The necessity of giving voice to what Paddison calls the 'mute' structural rendering of musical works through philosophical interpretation and aesthetic evaluation became

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<sup>37</sup>Nattiez, 'Introduction', 3.

<sup>38</sup>Adorno, *Aesthetic Theory*, 484. Paddison, *Adorno, Modernism and Mass Culture*, 50, 62.

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especially important to post-Webernian composers, particularly as their works began to turn away from traditional structures in favour of those predicated on meaning-embodying systems that provide structural justifications for indeterminacy.<sup>39</sup>

Although Cage's texts and lectures dealt with structural and aesthetic issues directly related to his compositions in the 1950s and 1960s, his assessments have been overshadowed by essays and prose excerpts emphasising his ambition to offer an alternative to the European dialectical tradition.<sup>40</sup> The intellectual content of analytical accounts such as 'Composition as Process I: Changes', 'Composition as Process II: Indeterminacy' and 'Composition as Process III: Communication' -- all given as lectures in Darmstadt in 1958 -- was obfuscated for some by Cage's style of delivery, for

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<sup>39</sup>See Paddison, *Adorno, Modernism and Mass Culture*, 63. Composer commentaries have become increasingly commonplace since the Second World War. See Cage's *Silence, A Year from Monday* (London and New York, 1985), *Empty Words* (London and Boston, 1980). Other notable examples include Stockhausen, whose commentaries are an indispensable part of his compositional agenda. See especially his 'Texte zur Musik' (vols. i-iv): i. *Zur elektronischen und instrumentalen Musik*, ed. Dieter Schnebel (Cologne, 1963); ii. *Zu eigenen Werken, zur Kunst Anderer, Aktuelles*, ed. Dieter Schnebel (Cologne, 1964); iii. *Texte zur Musik 1963-1970*, ed. Dieter Schnebel (Cologne, 1971); and iv. *Texte zur Musik 1963-1977*, ed. Christoph von Blumroder (Cologne, 1978).

<sup>40</sup>Typical 'alternatives' by Cage include his 'Music Lover's Field Companion' (1954), *Silence*, 274-276; 'Where are We Going? and What are We Doing?', *Silence*, 194-259; '45' for a Speaker', *Silence*, 146-193. Each of these essays contains interesting and relevant critical commentary, which is obscured by the 'performative' nature of the published texts. Cage's tendency to include odd anecdotes and other unrelated pieces of information in his books, although obviously intentional, also contributes to the dilution of his important observations on post-war music.

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example, and by his tendency to conflate style and message in a singular mode of presentation.<sup>41</sup> Boulez, on the other hand, has been active in his use of critical commentaries as a separate, journalistic medium with which to clarify and disseminate his compositional message. His texts are set apart from those of Cage by their direct engagement with the question of historicising the European avant-garde and by their ongoing concern to articulate an indeterminate aesthetic that is independent of the Cagean tradition.

For these reasons, Boulez's letters, essays and lectures are especially important to musical and cultural history in the second half of the twentieth century. They have been crucial in informing the divergent reading of the post-war period, which affords Boulez an independent critical tradition, a distinctive structural approach and a personal musical aesthetic. Similarly, the key dichotomies in post-war music that underlie these assumptions -- European vs. American, serial vs. non-serial, and modern vs. postmodern -- have been predicated to a significant degree on Boulez's own personal judgements. Engaging with these dichotomies directly must be

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<sup>41</sup>See note 16. Boulez's own account of his impression of Cage's lectures, quoted here on page 11, is a typical reaction. In *Silence*, 'I: Changes' and 'III: Process' are published in columns and with an unusual distribution of the text (written in alternating fonts) across the page. In both texts, Cage used chance operations to organise his material. 'II: Indeterminacy' uses 'excessively small type ... to emphasise the intentionally pontifical character' of the lecture (*Silence*, 35). Kostelanetz's 1988 *Conversing with Cage* goes some way to redressing this imbalance, although it is less useful as an analytical tool owing to the fact that its conversational sections are internally unordered and its regrettable lack of an index.

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the subject of a separate inquiry. As part of an important first step toward those wider investigations, this study seeks to isolate and evaluate the central claims of Boulez's writings and to establish the degree to which they may have influenced the divergent reading of the music of the post-war period.

To this end, this study seeks to assess Boulez's commentaries through an investigation into his accounts of his evolving indeterminate aesthetic and its connection to his initial belief that indeterminacy was a viable structural adjunct of serialism. It isolates the key instruments of dissociation of Boulez's from Cage's indeterminate aesthetic in the second half of the twentieth century, and evaluates Boulez's claim to have sustained a parallel evolution. Historically, this study proceeds on the assumption, outlined in *The Boulez-Cage Correspondence* and Boulez's and Cage's essays and lectures, that the relationship between the two composers divides into three main stages across the early post-war period.<sup>42</sup> After a period of close collaboration between 1949 and 1952 (stage one), their relationship became strained by Boulez's increasing

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<sup>42</sup>This assumption is widely corroborated in critical literature on both composers. See Nattiez, 'Introduction', 6, 19, 21-22; Kostelanetz, *Conversing with Cage*, 66; Boulez and Deliège, *Conversations with Célestin Deliège*, 50-51, 56-57; Jameux, *Pierre Boulez*, 98; Pierre Boulez and Peter McCallum, 'An Interview with Pierre Boulez', *Musical Times* (January, 1989), 8-10, pp. 8-9; Susan Bradshaw, 'The Instrumental and vocal music', *Pierre Boulez: a Symposium*, ed. William Glock (London, 1986), 127-299, p. 229; Nattiez, *Le Combat de Chronos et d'Orphée*, especially pp. 159-217; Robert Piencikowski, 'Introduction', *Stocktakings*, xiii-xxix, p. xxvi; Nyman, 'Backgrounds', *Experimental Music*, 31-49; see also 9-10.

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dissatisfaction with Cage's chance procedures between 1952 and 1957 (stage two), after when Boulez actively pursued public recognition of his separate compositional trajectory (stage three).

A number of key events punctuating this continuum of association and dissociation feature prominently in the discussions that follow. Stage one begins with Cage's visit to Paris in 1949 and ends with Boulez's first objection to Cage's random procedures in a letter written in December 1951, a document that is roughly contemporary with Boulez's two electronic *Etudes* (1951-52), *Polyphonie X* (1950-51) and *Structures I* (1951-52), and Cage's *Music of Changes* (1951) and *4'33"* (1952).<sup>43</sup> Stage two begins with the independence effected by Boulez's 1951 letter and ends with the publication of his 1957 article 'Alea' in *La Nouvelle Revue française*.<sup>44</sup> This text, in which Boulez publicly denounces composers who ignore serialism and allow their compositions to be dominated by chance, was published as Boulez began work on his Third Piano Sonata and the electro-acoustic piece *Poésie pour pouvoir* (1958). Stage three thus begins with Boulez's abandonment of these two key compositional projects, an event that coincides roughly with the beginning of his dominance of the European new music lecture circuit at the end of the 1950s and the

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<sup>43</sup>Pierre Boulez, Document 35, in Nattiez, *The Boulez-Cage Correspondence*, 112-127, especially p. 112.

<sup>44</sup>Pierre Boulez, 'Alea', *Stocktakings*, 26-38; originally published under the title 'Aléa' in *La Nouvelle Revue française*, 59 (Nov, 1957), 839-57.

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publication of the essay 'Sonata, que me veux-tu?'. Stage three extends through a long period of sporadic compositional activity in the 1960s and 1970s, during which time Boulez abandoned or withdrew a number of his compositions and began his activities as a conductor. For the purpose of this study, stage three ends with the piece that has been said to be 'the single, total work which ... cancels all the others' and the critical commentary it inspired, the 1981 electro-acoustic composition *Répons*.<sup>45</sup>

Against this background, each of the chapters that follow addresses a key assumption about the independence of Boulez's indeterminate aesthetic that corresponds to this three-part division. Chapter One investigates the role of developments in electronic music in Boulez's dissociation from Cage's work after 1952. Chapter Two addresses the claim that the open-form aesthetic of the Third Piano Sonata was designed as a response to the inspiration of the writers James Joyce and Stéphane Mallarmé. Chapter Three examines the status of the Third Piano Sonata as an 'unfinished' composition and studies its aesthetic goals in light of Boulez's compositions in the 1960s and 1970s. Finally, Chapter Four explores the claim that *Répons* represented the culmination of Boulez's independent indeterminate aesthetic, and that its structural goals had been unique to Boulez as early as 1949.

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<sup>45</sup>Nattiez, 'On Reading Boulez', 23.

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## Chapter One

### The Electronic Experiment

What does [the current state of music] leave for us to try, if not to gather up the various possibilities worked out by our predecessors, while demanding of ourselves a minimum of constructive logic? At a time of transformation and reorganisation, in which the problem of musical language arises with particular acuteness, and from which it seems that music will derive its *grammar* for some time to come, we assume our responsibilities unflinchingly. No sham emotionalism is going to prevent our practical working-out of the feeling, the felt necessity, of our time.

Boulez, 'Possibly...' (1952)<sup>1</sup>

#### I

Boulez prophesied a solution to the problem of musical language with confidence in 1952 at an especially interesting juncture in the history of post-war music: the time when experiments with electronic technology looked set to initiate a new stage in composers' relationship to sound. Four decades had passed since Bertrand's 'dynaphone' first caught Varèse's imagination in Paris. The new world of musical material offered to Varèse by the ondes martinot and the theremin in the 1920s and 1930s

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<sup>1</sup>Pierre Boulez, 'Possibly...', in Boulez, *Stocktakings from an Apprenticeship*, collected and presented by Paule Thévenin, trans. Stephen Walsh (Oxford, 1991), 111-140, p. 115; originally published as 'Eventuellement...', *La Revue musicale*, 212 (May, 1952), 117-48.

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and to Cage by amplifiers and oscillators in the 1940s had begun to sound old, having been overtaken by advances in tape made at recently founded electronic music studios in Paris and Cologne. The subject of sound manipulation had attracted much attention -- not least from the young Stockhausen -- in a 'Musik und Technik' seminar given by Meyer-Eppler at the newly created Internationale Ferienkurse für neue Musik in Darmstadt in 1948, and within five years, centres for electronic music research had sprung up around the world.<sup>2</sup> By 1952, the result of experiments in total serialism was soon to prove to be indeterminacy; there was much to learn from Webern's Piano Variations, Messiaen's 'Modes de valeurs et d'intensité' and Cage's prepared piano; Schoenberg was recently dead.<sup>3</sup> As Boulez stated at the time, composers needed to begin the 'practical working-out' of the period's 'felt necessity' -- to draw the threads of inheritance together with advances in electronic technology, to revitalise musical language and to provide a new foundation for musical expression that would sustain generations of composers to come.

Like many other young composers, Boulez was very much

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<sup>2</sup>Varèse, Henri and Schaeffer's 'Club d'essai' of 1948 had grown into the 'Group de recherches de musique concrète' by 1951, the same year Stockhausen and Eimert founded the 'Studio für elektronische Musik' at West German Radio in Cologne and Varèse and Babbitt started the 'Columbia-Princeton Electronic Music Center' in America. Within a year, research had begun at both the 'Electronic Music Studio' of Stockhausen, Ichiyanagi and Mayazumi at Japanese Radio in Tokyo and the 'Studio di Fonologia' of Berio, Maderna and Nono at Italian Radio.

<sup>3</sup>See Pierre Boulez, 'Bach's Moment', *Stocktakings*, 1-14 and John Cage, 'Composition as Process II: Indeterminacy', in John Cage, *Silence* (London, 1987), 35-40.

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caught up in these promises and expectations, a fact that is reflected in his contemporary writings. His essays in the immediate post-war years dealt with subjects typical of the period -- rhythm, Stravinsky, serialism and the challenge of the new ideas brought across the Atlantic by Cage.<sup>4</sup> The belief that the post-war generation had inherited a deadlock in the state of musical language brought a sense of urgency and anticipation to these discussions and Boulez's commentaries clearly reflect his interest in finding a viable alternative.<sup>5</sup>

In his texts from the late 1940s, Boulez objected in particular to a 'lack of cohesion between the working-out of polyphony ... and that of rhythm' in his predecessors.<sup>6</sup> It appeared that the problem could be rectified by creating textures that would support equality and diversity within a unified framework. Boulez's first solution was to turn to the proliferative, multi-level synthesis typical of contrapuntal style.<sup>7</sup> After his experiments in *Polyphonie X* and *Structures I* in 1951-52 showed that a rigid method of organisation was not

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<sup>4</sup>See especially Pierre Boulez, 'Proposals', *Stocktakings*, 47-54; originally published as 'Propositions', *Polyphonie*, 2 (1948), 65-72. Pierre Boulez, 'Trajectories', *Stocktakings*, 188-208; originally published as 'Trajectoires: Ravel, Stravinsky, Schönberg', *Contrepoints*, 6 (1949), 122-42. Pierre Boulez, Documents 26 (1950) and 31 (1951), in Jean-Jacques Nattiez, *The Boulez-Cage Correspondence*, with Françoise Davoine, Hans Oesch and Robert Piencikowski, trans. and ed. Robert Samuels (Cambridge, 1993), 80-90 and 98-103, respectively. See also Boulez, 'Possibly...'.  

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<sup>5</sup>See Pierre Boulez, Document 35, in Nattiez, *Correspondence*, 112-127.

<sup>6</sup>Boulez, 'Proposals', 49.

<sup>7</sup>Boulez, 'Proposals', 49.

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an effective route to a heightened cohesion between his structure and materials, however, he attempted instead to 'extend the means' of the serial impulse across the elements of sound.<sup>8</sup> His faith in his ability to 'expand this morphology into an integrated rhetoric' was at this stage theoretical, as he was quick to admit, but he was nevertheless confident: 'the time cannot be far off', he suggested in 1952, when a new musical language would be realised 'either in the form of new tablatures or through mechanical or electronic means'.<sup>9</sup>

But that time was far off for Boulez. Rather than lead the post-war generation into a solution to the 'problem of musical language', he was remarkably unproductive while other composers offered wide-ranging alternatives through experiments in indeterminacy, graphic notation and electronic sound manipulation after 1952.<sup>10</sup> For Boulez's contemporaries, it was an extraordinarily productive decade. Cage's work, for example, proliferated after *4'33"*. In addition to continuing his earlier experiments with durational structures and variable instrumentation in the *Music for Piano* series (1952-56), *59 1/2 for a String Player* (1953) and *Winter Music* (1957), his procedures expanded to incorporate recordings and radio broadcasts as basic material in works like *Imaginary Landscape No. 5* (1952), *Speech* (1955) and *Radio Music* (1956), mobile form

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<sup>8</sup>Boulez, 'Possibly...', 115. For a discussion of the link between polyphony and counterpoint in these works, see Boulez, Document 26.

<sup>9</sup>Boulez, 'Possibly...', 115, 119.

<sup>10</sup>Boulez, 'Possibly...', 115.

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and graphic notation in *Music for Carillon No. 1* (1952) and *Concert for Piano and Orchestra* (1957-58), and magnetic tape in *Williams Mix* (1952) and *Fontana Mix* (1958). Stockhausen, similarly, composed freely within the trends of the period. Works like *Zeitmaße* (1955-56) and *Klavierstück XI* (1956) proposed interesting structures combining serialism and open form, while his early experiments on tape in *Konkrete Etüde* (1952) grew into sophisticated electronic pieces such as *Gesang der Jünglinge* (1955-56) and *Kontakte* (1959-60).<sup>11</sup>

Both Cage and Stockhausen worked liberally in electronic and acoustic media in the mid-1950s, as well as with compositions that crossed the divide between the sound worlds, and both seemed equally comfortable with indeterminacy, electronics and amplification, and with the new interface that came of the marriage of electronically derived material with spontaneous acoustic sound. From Boulez, however, nothing electronic survives from this period that comes near the level of variety or sophistication achieved by these contemporaries. Despite the clarity with which he articulated his musical vision in his writings in the period, the acoustic composition *Le Marteau sans maître* (1953-55) is the only work from the mid-1950s not to be either left unfinished or withdrawn.<sup>12</sup>

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<sup>11</sup>For a list of Stockhausen's work, see Robin Maconie, *The Works of Karlheinz Stockhausen* (Oxford, 1990), 302-307.

<sup>12</sup>*Le Marteau sans maître* was first published by Universal in 1954, but was revised in 1957. For a discussion of the relationship of extra-compositional serial structure to form in the piece, see Lev Koblyakov, 'Pierre Boulez *Le Marteau sans maître*', *Zeitschrift für Musiktheorie*, 8 (1977), 24-39. Other

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Boulez's inability to absorb the results of early electronic experiments in his compositions after 1952 requires investigation in light of his writings, which suggest that developments in electronic technology were a significant factor in effecting his dissociation from Cage's 'method of absolute chance' between 1952 and 1957.<sup>13</sup> Boulez's evaluations of the relationship between serialism, indeterminacy and electronics in these texts is especially interesting when placed against the background of three significant historical events: the writing of his letter to Cage of December 1951; the conception of the Third Piano Sonata (1957); and the publishing of 'Sonata, que me veux-tu?' (1960). Three key factors demonstrate the importance of these events in determining the direction his compositional work was to take after 1952: his treatment of the subject of electronics in his writings in the early to mid-1950s; discussions of the issue in his early correspondence with Cage; and the shift in focus of his writings later in the decade. This chapter uncovers the intricate network of association between these factors, and offers an important reading of Boulez's interest in electronic technology and its role in articulating his independent aesthetic of indeterminacy in the early post-war period.

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pieces begun by Boulez but left unfinished or unpublished are: *Oubli signal lapidé* (1952) for twelve voices, *La Symphonie mécanique* (1955) for single-track tape (music for the film by Jean Mitry), and *Strophes* (1957) for flute and 'Strophe', 'Antiphonie' and 'Séquence' from the Third Piano Sonata (1957).

<sup>13</sup>Boulez, Document 35, 112.

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## II

### *Electronics and Boulez's writings, early to mid-1950s*

Although Boulez's lack of compositions in electronic media in the 1950s might suggest that he lost interest in the development after 1952, we know that this was not the case. Boulez continued to be interested in the electronic project, as later electro-acoustic works such as '*...explosante-fixe...*' (1972 and 1989 versions), *Dialogue de l'ombre double* (1985), and, most importantly, *Répons* (1981) show. His work at the Institut de Recherche et de Coordination Acoustique/Musique (IRCAM) since its founding in the late 1970s has put Boulez at the forefront of investigations into electronic and electro-acoustic composition, and his reputation among researchers in the area of computer-generated sound is well established. His championing of the procedure has emphasised these accomplishments, and he has become closely associated with these developments, the music resulting from them, and other experimental projects on using computer technology to expand the understanding of and control over sound.<sup>14</sup>

Boulez's dissatisfaction with the opportunities afforded by electronic techniques in the 1950s is well known, however,

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<sup>14</sup>For a study of the role of IRCAM in shaping opinion about electronic music, see Georgina Born, *Rationalising Culture: IRCAM, Boulez and the institutionalisation of the musical avant-garde* (Berkeley and London, 1995). For recent evidence of Boulez's association with these movements, see Dominique Jameux, ed., *Répons-Boulez* (Paris, IRCAM, 1989) and Jean-Jacques Nattiez, *Le Combat de Chronos et d'Orphée* (Paris, 1993), especially pp. 159-217.

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and it seems consistent that he abandoned the experiment after his only electro-acoustic composition, the unpublished *Poésie pour pouvoir* (1958), made him 'sceptical about organising any sound on tape until much better methods had been discovered'.<sup>15</sup> His inability to engage with the medium earlier in the decade is less readily explained, however, in particular with respect to one significant factor: that it was just as he began to produce fewer compositions that a rhetoric of the 'promise' of electronic music gained momentum in his writings, which became especially enthusiastic on the issue after 1952.

Boulez's statements in 'Possibly...' about the potential of electronic music to usher in a new phase in the history of musical language seem understated in comparison to the confidence with which he began to predict an imminent electronic synthesis after 1952.<sup>16</sup> In the 1954 essay '...Near and Far', Boulez wrote that electronic music had an important role to play in the co-ordination of the disparate components of the current musical language, which needed to be brought together into a single reference system that would form the basis of a 'new organisation of sound'. Composers were engaged, he continued, in a redefinition of music 'from the

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<sup>15</sup>Pierre Boulez and Dominique Jameux, 'An Interview with Dominique Jameux', in Pierre Boulez, *Orientations: Collected Writings*, ed. Jean-Jacques Nattiez, trans. Martin Cooper (London, 1986), 199-202, p. 202; originally published as 'Pierre Boulez: sur *Polyphonie X* et *Poésie pour pouvoir*', in *Musique en jeu*, 16 (November, 1974), 33-35.

<sup>16</sup>Boulez, 'Possibly...', 119.

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morphology of language right up to the conception of the work itself', a process that required a new approach to the idea of form and the role of performance in both instrumental and electro-acoustic music.<sup>17</sup> In the 1955 essay '"At the Edge of a Fertile Land" (Paul Klee)', Boulez wrote of a 'remarkable agreement between the evolution of music and the consequences which ... flow from it' and predicted that electronic techniques would 'appear as a source and origin of a new synthesis, which will embrace all sound possibilities'.<sup>18</sup> In 'Tendencies in Recent Music' in 1957, he spoke of being on the 'brink of an undreamt-of sound world, rich in possibilities and still practically unexplored, whose implications we are only now beginning to perceive'.<sup>19</sup> It was the 'happy coincidence' of the period, he stated, that the need for a new 'means of realisation' had arisen 'at the very moment when electro-acoustic techniques are in a position to supply them'.<sup>20</sup>

If the confidence and consistency of these claims seems

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<sup>17</sup>Pierre Boulez, '...Near and Far', *Stocktakings*, 141-157, pp. 141-142; originally published as '...Auprès et au loin', *Cahiers de la Compagnie Madeleine Renaud-Jean-Louis Barrault*, 3 (1954), 7-24.

<sup>18</sup>Pierre Boulez, '"At the Edge of a Fertile Land" (Paul Klee)', *Stocktakings*, 158-172, 160; originally published as '"An der Grenze des Fruchtländes"', *Die Reihe*, I (1955), 19-29.

<sup>19</sup>Pierre Boulez, 'Tendencies in Recent Music', *Stocktakings*, 173-179, p. 178; originally published as 'Tendance de la musique récente', *La Revue musicale*, 236 (1957), 23-35. First written to be given as a paper at the 'Première Décade de Musique Experimentale' in Paris in 1953, 'Tendencies' was revised to incorporate elements of '"At the Edge of a Fertile Land"' before being published in *La Revue musicale* in 1957.

<sup>20</sup>Boulez, 'Tendencies', 178.

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at odds with the lack of electronic works from Boulez in the period, it conflicts more seriously with other statements -- many from these same texts -- that outline the difficulties introduced by the new technology. Boulez first worked with the medium of single-track tape in *Études sur un son* and *Étude sur un accord de sept sons*, pieces of *musique concrète* produced in Schaeffer's Paris studio in 1951-52. In '"At the Edge of a Fertile Land"' he derided the means available to composers of 'concrete' music, in particular the 'meaningless' application of 'home-spun' tape techniques such as acceleration, retardation and tape-montage.<sup>21</sup> Rather than open a new era in his relationship to sound, electronic media demanded an approach to basic material that was incompatible with his other concerns.<sup>22</sup> The physical structure of electronically derived musical material in particular interfered with two key aspects of his early experiments, which, although interested in the potential of electronic procedures, were committed to reconciling serialism and indeterminacy.

The first of these was the question of control and of finding a means with which to further the composer's developing relationship with the newly exposed dimensions of sound. In 1954, Boulez wrote that the new generation of composers had to 'rethink acoustical questions in light of the most recent experiments [and] to consider the problems posed by electro-

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<sup>21</sup>Boulez, '"At the Edge of a Fertile Land"', 160.

<sup>22</sup>For an account of the two *Études*, see Boulez, Document 35, 119-125.

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acoustics and electronic techniques'.<sup>23</sup> The 'real problem' involved in the encounter with electronics, he wrote in 1955, was that 'they overturn every conception of sound to which one's education or personal experience has accustomed one'.<sup>24</sup> Like the lesson learned from total serialism in *Structures Ia*, early electronic techniques undermined the expectation of precision. The more he attempted to reduce the margin of error in electronic music, he wrote, 'the less it will allow itself to be circumscribed'.<sup>25</sup>

Second, and more important, Boulez found that electronic and acoustic sound were structurally incompatible. Where acoustic sound was defined by a fixed set of elements -- timbre, duration, intensity and dynamics -- electronic music began with a 'non-limitation of possibilities', a wholly 'undifferentiated universe' of sound qualities that had yet to be defined.<sup>26</sup> For an integrated post-serial structural system to unify musical material, it would have to compare like with like, a process that these structural differences made impossible. Rather than offer a means with which to establish a new musical language in the early post-war period, Boulez's experience of electronic music in fact destroyed that early vision. 'One is very far from the enchanted world one was preparing to discover', he stated in 1955, 'the world where the

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<sup>23</sup>Boulez, '...Near and Far', 143.

<sup>24</sup>Boulez, '"At the Edge of a Fertile Land"', 158.

<sup>25</sup>Boulez, '"At the Edge of a Fertile Land"', 158.

<sup>26</sup>Boulez, '"At the Edge of a Fertile Land"', 159.

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composer would throw off all the accumulated fetters of past centuries'.<sup>27</sup>

### III

#### *The Boulez-Cage correspondence: tracing Boulez's dissociation from Cage*

The fact that Boulez's writings sharply contrast the potential and limitations of electronic music in the mid-1950s establishes his early difficulty with the medium. It was not of lasting consequence that his interest in the issue survived where works do not, however. Boulez makes a fair case for the importance of a unified texture to music after serialism in this period, and the incompatibility of electronic and acoustic material makes his decision not to compose in the media a viable temporary solution.

The balancing of the serial with the electronic project caused difficulty in this period, but a second factor -- Boulez's desire to integrate indeterminacy -- complicated the 'problem of musical language' further.<sup>28</sup> Despite the fact that Boulez's essays and letters to Cage for the most part discuss the expressive potential of chance and the power of electronic music in parallel, electronics and indeterminacy are closely interwoven in Boulez's work concept across the period. A close comparison of these texts clarifies this association.

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<sup>27</sup>Boulez, '"At the Edge of a Fertile Land"', 158.

<sup>28</sup>Boulez, 'Possibly...', 115.

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At the same time, it outlines a fact of considerable significance: that the instances when these two issues do intersect correspond to key junctures in the process of Boulez's early dissociation from Cage's aesthetic of chance.

### *III.1. The Potential and problem of chance*

Although their working approach to chance procedure in the late 1940s was not identical, the correspondence between Boulez and Cage shows the emergence of a shared interest in deriving structure from material that brought their differing post-war projects together under the aegis of the search for a common structural design. In Cage's work, this impulse arose gradually from experiments with the prepared piano that sought to increase the breadth of sound material by artificially enhancing instrumental sonority.<sup>29</sup> As Boulez explained in an introduction to a 1949 performance of Cage's *Sonatas and Interludes* (1946-48) in Paris, the greatest advance of Cage's method of piano preparation was the fact that it gave each sound 'a prominent individuality'.<sup>30</sup> This development, Boulez believed, drew on the 'neutral' treatment of pitch in the works of Webern, while at the same time bringing a level of timbral acuity to the composition that marked a significant step forward from the kind of articulation available in twelve-tone

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<sup>29</sup>For Boulez's account of this development, see Boulez, Document 1, in Nattiez, *Correspondence*, 27-32, pp. 30-31.

<sup>30</sup>Boulez, Document 1, 30.

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composition.<sup>31</sup> As Boulez understood it, Cage organised his material by rhythmic sectioning that was in turn brought together through a network of numerical relations. The result, he said, was a 'purely formal, impersonal' structural idea -- one that could ensure the integration of musical gestures without the subjective factor of the composer's will.<sup>32</sup>

It was the discussion of this aspect of Cage's *Sonatas and Interludes*, developed from pieces like *Amores* and *A Room* (1942), and *Perilous Night* (1944), that expanded in their letters as the 1940s came to a close and was to have the most influence on Boulez's own compositions. In Cage's next big project, the Concerto for Prepared Piano and Orchestra (1950-51), he introduced charts of 'pre-orchestrated combinations of sound'.<sup>33</sup> In these pre-compositional charts, which provided pools of readied but dormant material, musical gestures were held in an autonomous configuration that could be drawn on and translated into the work as Cage composed. Cage believed the chart method brought the act of composition 'closer to a "chance" or if you like to an un-aesthetic choice', a development that was met with enthusiasm from Boulez.<sup>34</sup>

Boulez was himself at work on 'a collection of ...

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<sup>31</sup>Boulez, Document 1, 31-32. Webern's Piano Variations and his Second Cantata, Op. 31, in particular. See p. 12, above.

<sup>32</sup>Boulez, Document 1, 31. These structures are also used in *Sonatas and Interludes* (1946-48).

<sup>33</sup>John Cage, Document 25 in Nattiez, *Correspondence*, 77-79, p. 78.

<sup>34</sup>Cage, Document 25, 78.

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polyphonies' (*Polyphonie X* of 1950-51), a piece constructed out of a number of 'autonomous sections of music' that were to be set against each other polyphonically as the work progressed.<sup>35</sup> The sections were to be made up of 'sound aggregates, linked by a constant but movable within the scale of sonorities', an idea, he wrote, which drew directly on the sound charts of Cage.<sup>36</sup> Like Cage's chart method, Boulez said, the composition was to be built 'with all the possibilities afforded by the material', a method whereby 'the combinations create the form, and thus where the form does not arise from an aesthetic choice'.<sup>37</sup> The parallel between the structural design of *Polyphonie X* and the Concerto for Prepared Piano and Orchestra as it emerged in their letters was striking. It also marks the point of closest association in the history of their shared indeterminate aesthetic.<sup>38</sup>

Despite Boulez's statement about the indebtedness of his project to Cage, however, current criticism views this as a case of young composers writing enthusiastically at cross-purposes. As we saw in the Introduction, it is thought that each man was reading the work of the other through a strongly cast set of assumptions that obscured the fundamental

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<sup>35</sup>Boulez, Document 26, 80 note 4.

<sup>36</sup>Boulez, Document 26, 85.

<sup>37</sup>Boulez, Document 26, 85.

<sup>38</sup>See Boulez, Document 26, 86.

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difference in their directions.<sup>39</sup> The early correspondence between the composers provides the background to this belief, although other historical factors complicate their association and its impact on Boulez's work concept at the time.

We know that it was only when Boulez replied requesting more information about the Concerto that Cage made clear he had been putting his material together by choosing from the charts using the coins of the *I-Ching*.<sup>40</sup> The revelation that Cage had been tossing coins -- a completely random method of selection -- caused no immediate retaliation from Boulez, although it was the factor over which they were soon to loosen ties. Boulez wrote back hastily confirming that they were 'at the same stage in research' before sending a second communication in August 1951, ostensibly to provide a text on his current work that had been requested for publication by Henry Cowell.<sup>41</sup> In that later letter, Boulez wrote to Cage that he was intending to write 'a long letter concerning the one you sent me', which he did -- famously -- in December 1951.<sup>42</sup> In the intervening

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<sup>39</sup>See Boulez, Document 26, 86; Jean-Jacques Nattiez, 'Introduction', in *Correspondence*, 12-24, pp. 14-16; Paul Griffiths, *Modern Music and After: Directions Since 1945* (Oxford, 1995), 22-25. This issue is addressed in the Introduction to this study, especially on pages 1-4.

<sup>40</sup>See John Cage, Document 28 in Nattiez, *Correspondence*, 92-97, pp. 93-94.

<sup>41</sup>Boulez, Document 29, in Nattiez, *Correspondence*, 97. The text for Cowell is in Document 30, in Nattiez, *Correspondence*, 98-103, pp. 99-103. It was published in *Musical Quarterly*, 38.1 (January, 1952), 123-36.

<sup>42</sup>Boulez, Document 31, 103. See the Introduction to this study, page 24.

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months, Cage had written back to Boulez, blithely elaborating on his now more extensive use of the *I-Ching*, this time in association with a new piece, *Music of Changes* (1951).<sup>43</sup> Boulez's response to Cage's method of composition in both the Concerto and *Music of Changes* was firm: he rejected Cage's 'method of absolute chance (by tossing the coins)'; it was imperative, he stated, that the composer 'direct the phenomenon of chance', a facility he 'mistrusted' because it was 'not absolutely necessary'.<sup>44</sup>

### *III.2 Dissociation: Historical background I (chart method)*

The Boulez-Cage correspondence provides a fair assessment of what caused the problem of chance to rise to the surface -- the fact that there was some delay between when Boulez adopted a form of Cage's chart method and when he realised what sort of activity Cage had been using it to support. The evidence of a disagreement over control does not clarify whether their subsequent aesthetic divergence is explained by previous compositional practice, however. Boulez's sudden rejection of Cage's methods in 1952 would suggest that his idea of the role of chance was firmly fixed before collaboration began in 1949. Boulez's troubled relationship with electronic techniques in the 1950s complicates this assumption, however, particularly in light of a number of previously unexamined historical factors involving Boulez before 1952.

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<sup>43</sup>John Cage, Document 33, in Nattiez, *Correspondence*, 109-111.

<sup>44</sup>Boulez, Document 35, 112.

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Boulez's initial difficulty in assimilating the shared aesthetic of indeterminacy stemmed in part from his adoption of Cage's chart technique. the procedure, as we have seen, that promised to assist him in establishing a new compositional condition through which he could create a musical work where form was not the result of a directed act.<sup>45</sup> The early correspondence shows that this idea grew from Boulez's assimilation of a key Cagean assumption: that the autonomy of musical material in combination could be preserved by the use of precompositional charts. For Cage, this procedure grew out of the desire to preserve a sound's 'individuality', and followed from his 1940s experiments in creating organisational systems that reflected the inherently complex (and at that time expanding) physical identity of sound.<sup>46</sup> Cage believed that timbre, pitch and intensity contributed to the nature, or 'expression', of sound; duration, which was the only element that could display both sound and silence, he concluded, was naturally structural. Within structural divisions based on time-lengths, Cage wrote to Boulez, 'any sounds of any qualities and pitches (known or unknown, definite or indefinite) any contexts of these, simple or multiple', were 'natural and conceivable' in a composition.<sup>47</sup> Charts aided the establishment of this condition, while at the same time

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<sup>45</sup>Boulez, Document 26, 85.

<sup>46</sup>Boulez, Document 1, 30.

<sup>47</sup>John Cage, Document 5, in Nattiez, *Correspondence*, 38-42, p. 39 note 3. For Boulez's account of this, see Boulez, Document 1, 28.

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emphasising the increasingly diverse character of the specific individualities of sound.

Although Cage's work was post-Webernian in its interest in diversifying the structural role of sound characteristics, Boulez's project differed in its early, strictly serial focus. The idea of emphasising the 'individuality' of sound became increasingly important to Boulez, although he adopted Cage's method principally as a means through which he could harness both the structural complexity of his serial experiment and the powerful generative potential of his material. Boulez wrote to Cage that he was engaged in expanding the serial principle to 'extreme conclusions' -- to use it to create a basis on which to organise 'the whole of the sound material, whatever it may be'.<sup>48</sup> He contrived to build a network of relationships across his materials that would both bind them together and ready them for active combination. Working initially with pitch relations, he deduced a related network that linked timbre, intensity, attack and dynamics, and created what he called the entire 'sound space' of the composition out of a fixed set of serially related transpositions.<sup>49</sup> The goal of the project was to combine 'modality, tonality and the series' with the standard musical dichotomy of 'continuity and discontinuity' so

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<sup>48</sup>Boulez, Document 26, 86, 87. In 1954, Boulez writes an almost exact reiteration of this description to Cage in a brief passage about his 'current activities': 'I am trying to expand the series, and expand the serial principle to the maximum of its possibilities' (Pierre Boulez, Document 45, in Nattiez, *Correspondence*, 146-150, p. 149).

<sup>49</sup>Boulez, Document 26, 87.

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closely that 'they now become a single idea'.<sup>50</sup> The necessity of some kind of pre-compositional grid to this method is obvious, and it made sense to adopt Cage's method of organisation.

The difference between the structural design of Boulez's and Cage's projects was enormous, however. Although the adoption of the procedure in *Polyphonie X* was not initially problematic, the chart method turned out to be a diversion. Both Cage and Boulez were looking for a method that would create an independent result. However, while the implications of these results fitted with a project seeking to diminish the composer's role, they conflicted with the desire to preserve authority. What Cage had wanted from the chart technique in the Concerto for Prepared Piano and Orchestra and *Music of Changes* was a situation that would bring about the 'possibility of "given" relationships' between his musical material.<sup>51</sup> He described the charts to Boulez as 'checker boards' of pre-orchestrated sound, combinations on which he could make 'moves' that would be followed by either 'corresponding' or 'non-corresponding' moves.<sup>52</sup> Although it is not clarified in his letters to Boulez, the idea of 'correspondence' and 'non-correspondence' in the charts was not something characteristic of any relationship inherent in his musical material; it grew

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<sup>50</sup>Boulez, Document 26, 87. For an interesting solution to the lack of complexity in rhythm noted earlier by Cage, see Boulez, Document 26, 88.

<sup>51</sup>Cage, Document 25, 78.

<sup>52</sup>Cage, Document 25, 78.

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rather from the nature of the *I-Ching*, in which certain lines in the hexagramal charts are considered to be 'in flux' while others are fixed.<sup>53</sup>

Cage constructed his charts on the principle of the method simply in order to employ the coins of the *I-Ching*, a technique that, in turn, allowed him to achieve an 'objective' result. Permitting the direction of the coins and the layers of fixed and variable material to dictate structural relationships between that material and its eventual association with form was not an attempt to establish a logical network of relations, however -- in fact, quite the opposite. Cage wanted the combination of material to occur at random so that the accumulation of musical gestures would bring out previously unconsidered qualities of sound. To Cage, the mechanism of the coins was simply a 'computer', a 'facility' whose purpose was to remove the composer from the process of combination in order to ensure that the grouping of musical material would occur without reference to any demonstrable structural qualities that they may have exhibited in sound.<sup>54</sup> The desire to create this mechanism suited Cage's other, extra-musical interests, to be sure. But it was also rooted in a separate musical project extrinsic to the chart method: the pursuit of a heightened level of the individuality of sound.

Boulez had of course also been interested in creating a

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<sup>53</sup>For a discussion of Cage's reasons for using the *I-Ching*, see Richard Kostelanetz, *Conversing with Cage* (New York, 1988), 63-64.

<sup>54</sup>Kostelanetz, *Conversing with Cage*, 219.

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mechanism of selection, and, as we have seen, he adopted a similar rhetoric when he wrote that serial combinations would 'create' the form that would be generated without 'aesthetic choice'.<sup>55</sup> What was crucial about adopting a mechanism to Boulez was ensuring that the link between sound and form in a composition be established as a result of the relationships between musical material, however, a concern that emphasised structural cause much more than it did aesthetic effect. When he wrote to Cage that he designed his sound aggregates to be 'linked by a constant but movable within a scale of sonorities' he meant that the complexity of any given aspect of the composition would be a 'function' (practically, a kind of 'spinning-out') of either the series or some other serially derived formation.<sup>56</sup> The 'architecture' of *Polyphonie X* was to be created by a chain of 'exchanges' between serial material and its multi-level combinations and transformations, such that the 'space' of the composition would be defined simultaneously by both 'a constant' and 'a variable'.<sup>57</sup> By the time he moved on to the composition of *Structures I* (1951-52), Boulez aspired to a result where all structures were equally interchangeable and he transmuted the serial pitch organisation into the wider organisation of dynamic, attack and duration. The method of combination in *Structures I* was similar to Cage's, in particular in its division of the mechanism into a two-tiered

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<sup>55</sup>Boulez, Document 26, 85. See note 37, above.

<sup>56</sup>Boulez, Document 26, 85.

<sup>57</sup>Boulez, Document 26, 85, 86.

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structural hierarchy.<sup>58</sup>

At the time, Boulez wrote to Cage that he created 'mechanical organisation' and 'directed organisation' to correspond to the difference between single and multiple serial combinations. To increase the sophistication of the method, he said, he 'took over' Cage's 'chess-board system' and incorporated into it what he called 'dissociated, antagonistic, and parallel or anti-parallel' levels.<sup>59</sup> The structural articulation demanded by the method far surpassed that asked of material by Cage and, as we saw in Section I, it was an idea that could not be supported in practice. The chart method, while assisting Boulez in his attempt to create high-level serial structures, clarified an important limitation of the serial method: that the more Boulez attempted to determine his musical materials, the more they would escape his control.<sup>60</sup>

### *III.3 Dissociation: Historical background II (electronics)*

Concurrent with his dissociation from Cage in 1952, the failure of Boulez's chart-supported 'total serial' project brought an important stage in his early development to a swift conclusion,

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<sup>58</sup>For 'total serial' structures in *Structures Ia*, see György Ligeti, 'Decision and Automatism in *Structure Ia*', *Die Reihe*, 4 (1985), 36-62.

<sup>59</sup>Boulez, Document 27, 91. Revill suggests that Boulez influenced Cage with respect to the adoption of charts, a statement that is contradicted by the evidence in this letter. See David Revill, *The Roaring Silence: John Cage, a Life* (London, 1992), 126.

<sup>60</sup>Pierre Boulez and Célestin Deliège, *Conversations with Célestin Deliège* (London, 1976), 56.

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as the correspondence between the two composers shows.<sup>61</sup>

Boulez retained his interest in the generative potential of serialism, however, which became focused on the power of serially inspired structures to commodify 'individuality' and to create an arena where the aesthetic value of musical material was proportional to its independence from the intervention of the composer's will. Boulez stated in his correspondence to Cage that the promise of a 'global serial structure' in which structures could be generated either by the 'automatism of numerical relations' or by 'directed and interchangeable combination' offered him an 'extremely effective dialectic of musical development'.<sup>62</sup> An investigation of the association between Boulez's faith in electronic technology and his discussions about Cage's indeterminate aesthetic in his writings reveals that these statements were made on fragile foundations, however, a fact that was to have far-reaching consequences for his aesthetic in the 1950s.

In 'Possibly...' (1952), Boulez demonstrated how tables of serial permutations defined the 'universe' of a composition in terms of a 'network of possibilities', a tool with which the composer could 'take possession' of the work's particular individuality in a manner that was integrated with the nature

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<sup>61</sup>Boulez has continued to compose in complex dimensions throughout his life, a fact that has necessitated the use of some system of diagrammatic or chart-like orientation for musical material for other purposes.

<sup>62</sup>Boulez, Document 31, 102.

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of its basic material.<sup>63</sup> In 1954, Boulez defended the 'numerology' of serialism and distinguished between compositional tables that resulted in works equivalent to a 'neatly drawn-up balance sheet' and integrated serial works that were the 'outcome of structural thinking'.<sup>64</sup> The strength of the serial method, he suggested, was that the series was a 'generative function' that worked across the elements of sound.<sup>65</sup> The key factor in its ability to define a musical 'universe' was its balance of breadth and integration, the ability of a serial method to organise a complex network of musical elements by virtue of their 'specific structural properties and character'.<sup>66</sup> Without that factor, he suggested, the generative function of serial relations would be 'purely redundant' -- it would simply be 'a complicated way of tossing a coin'.<sup>67</sup>

In 1952, Boulez conceded that there was 'as yet no question of deploying such virtuosity in performable works', but he was certain that it was only a matter of time before 'such speculations will gain practical recognition'.<sup>68</sup> In his letter outlining his objection to Cage's chance procedures in

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<sup>63</sup>Boulez, 'Possibly...', 116-117.

<sup>64</sup>Boulez, '...Near and Far', 148-149.

<sup>65</sup>Boulez, '...Near and Far', 149.

<sup>66</sup>Boulez, '...Near and Far', 149.

<sup>67</sup>Boulez, '...Near and Far', 149.

<sup>68</sup>Boulez, 'Possibly...', 119. Because the statement was published in 1952, it is assumed that it would have been written sometime in 1951.

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December 1951 this confidence is tangible, particularly with respect to the potential for serialism to organise the 'specific structural properties' and 'character' of the new dimensions of sound.<sup>69</sup>

The strength and timing of Boulez's faith in this idea is significant and it proved to be a crucial factor in solidifying his belief in the possibility of an independent indeterminate aesthetic in late 1951.<sup>70</sup> Boulez had recently become interested in experiments in electronic manipulation; his letter to Cage was written only a fortnight after he had completed a course in *musique concrète* at the electronic studio of Pierre Schaeffer in Paris. The experience of the course, as well as his at that time incomplete work on two *Études* for tape, had confirmed his opinion of the generative power of technology, and strengthened his resolve to work out what, as we saw at the beginning of this chapter, he called 'the felt necessity' of his time.<sup>71</sup>

Contemporary documents reflect this confidence. In a letter to Cage in August 1951, Boulez suggested that the 'effective dialectic' of 'automatic' and 'directed and

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<sup>69</sup>Boulez, Document 35, 119 and 119, note 29.

<sup>70</sup>Boulez first wrote to Cage of his interest in electronic technology two years before. He stated: 'As for me, I may be going to try some experiments with P. Schaeffer', Pierre Boulez, Document 6 (January 1950), in Nattiez, *Correspondence*, 43-46, p. 44. An error in a footnote to the 1950 letter in Nattiez's *Correspondence* suggests that Boulez had written two *musique concrète* pieces by the time he made this statement; in fact, the pieces were not written until 1951-52.

<sup>71</sup>Boulez, 'Possibly...', 115.

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interchangeable' combinations typical of serialism would be enhanced by 'mechanical means of reproduction -- the tape recorder in particular'.<sup>72</sup> Boulez prophesied a time when electronic techniques would expand the current restrictions of sound, when electronic means would make possible structures that 'no longer depend on instrumental difficulties' but that would allow the composer to work with 'given frequencies, with serial derivations'.<sup>73</sup> By December, the vision of electronic serial works, each with its 'own universe, its own structure and its own methods of derivation on each level' appeared to Boulez set to solve 'the problem of musical language' in a powerful way.<sup>74</sup> Electronics promised to enhance the potential of musical structures to achieve new heights of 'individuality' by providing a means with which the composer could create generative serial relations across each of the dimensions of sound. In the months before his rejection of *musique concrète* and the failure of his 'total serial' project, Boulez's belief in the imminent availability of multi-level electronically derived serial structures confirmed the superiority of his methodology over Cage's 'random' procedures, playing an important role in his dissociation from Cage's 'method of absolute chance' in his letter of December 1951.<sup>75</sup>

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<sup>72</sup>Boulez, Document 31, 103.

<sup>73</sup>Boulez, Document 31, 103.

<sup>74</sup>Boulez, Document 31, 103; Boulez, 'Possibly...', 115.

<sup>75</sup>Boulez, Document 35, 112.

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#### IV

##### *Implications: Boulez's indeterminate project 1952-57*

Boulez was overconfident in the potential of electronic procedures to regenerate musical language, however, as his other writings clearly show. Later in the decade, his texts segregate the issues of electronics and indeterminacy, temporarily untangling the association of electronics with achieving 'individuality' in sound and marginalising Cage's contribution to his viable post-Webernian aesthetics of chance. In '*...Near and Far*' (1954), the text that would have gone to press only two years after Boulez first outlined his dissatisfaction with Cage's methods, the issue of indeterminacy is largely avoided.<sup>76</sup> Changes in Boulez's early assumptions about electronics and indeterminacy begin to appear overtly in '*At the Edge of a Fertile Land*' (1955), however. There, he makes passing reference to the 'grandiose' aesthetic aims of electronic music in its 'early days' -- freedom, precision and the 'absence of limitation'.<sup>77</sup> In this text, he shifts his emphasis away from the question of determinacy vs. indeterminacy toward the concepts of 'continuity and discontinuity' in electronic music and the dialectic of

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<sup>76</sup>He mentions the abolition of the procedure briefly, and refers to the difference between the 'free and strict' structures derived through the generative function of serialism. Boulez, '*...Near and Far*', 150-151, 157.

<sup>77</sup>He also decentralises the discussion with a series of disclaimers. Boulez, '*At the Edge of a Fertile Land*', see especially, p. 171.

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'ambiguity' inherent in the contradictions between the two.<sup>78</sup> By 'Tendencies in Recent Music' (1957), this change of opinion, it would seem, was complete. Boulez had moved so far away from his early ideas on the association of indeterminacy and electronics as to feel justified in omitting Cage from his discussion of the 'greatest figures' in post-war music.

Boulez's account in these essays alone would support the critical belief that his association with Cage was made on false pretences before 1952. It would suggest that chance was derived strictly from the generative mechanism of serialism, and that it had little to do with either the early Boulez-Cage experiment into the aesthetic 'individuality' or its relation to a past belief in the structural potential of electronic technology as Boulez's ideas evolved across the post-war period. Three unexplored aspects of Boulez's project in the 1950s contradict this supposition, however: the explanation of indeterminacy in the 1954 text 'Current Investigations'; its relation to the early serial piece *Polyphonie X*; and the connection between both these projects and the electro-acoustic project of 1958, *Poésie pour pouvoir*.

#### *IV.1 'Current Investigations'*

'Current Investigations' is Boulez's only essay from the mid-1950s that overtly foreshadows the design of the Third Piano Sonata. The text, which is contemporary with '...Near and Far' and precedes '"At the Edge of a Fertile Land"' by only a year,

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<sup>78</sup>Boulez, '"At the Edge of a Fertile Land"', 172.

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casts a noteworthy backward glance at Boulez's earlier essays, in particular the confidence of 'Possibly...' of 1952. In 'Current Investigations', Boulez wrote of a desire to develop a 'dialectic operating at each moment of the composition between strict global organisation and a temporary structure controlled by free will'.<sup>79</sup> The image is familiar from his discussions of serialism, and it looks toward the statements made in connection with electronics in '"At the Edge of a Fertile Land"'. Despite the fact that it was published contemporaneously with that exposition on the power of electronic media, however, 'Current Investigations' does not mention these forces. Rather, it places this model against the musical inheritance of Debussy, Berg and Webern, composers whose works, Boulez suggested, 'lead one to hope for a new poetics, a new way of listening' that would bring music up to date with the advances of poetry made by Joyce and Mallarmé.<sup>80</sup>

In context of Boulez's other writings from this period, it is odd that Boulez articulates this poetic without reference to serialism or electronics. Equally, it is noteworthy that it was this same rhetoric that he used to explain the aleatory aesthetic of the Third Piano Sonata in 1960 in 'Sonata, que me veux-tu?'.<sup>81</sup> The link between 'Current Investigations' and 'Sonata, que me veux-tu?' is striking; in the earlier essay,

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<sup>79</sup>Pierre Boulez, 'Current Investigations', *Stocktakings*, 15-19, p. 17.

<sup>80</sup>Boulez, 'Current Investigations', 18.

<sup>81</sup>Boulez, 'Current Investigations', 19. This idea is investigated more fully in Chapter Two.

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Boulez wrote of a desire to reject a 'closed circuit' approach to development in favour of 'parentheses and italics' and to move toward a work where one could 'choose one's own direction' -- both images he used later in 'Sonata, que me veux-tu?'.<sup>82</sup> It is also in 'Current Investigations' that Boulez introduced the idea of applying structural 'formants' in a musical work, sound groups that would be 'linked ... to the sound organisation specific to that work, but not at all dependent on it', an idea, as we shall see in the next chapter, that is central to the structure of the Third Piano Sonata.<sup>83</sup> The presence of these ideas in his writings from this period is surprising, particularly against the general climate of the early to mid-1950s. It can be explained, however, by an examination of how he associates his discussions of serialism and electronics with the compositions *Polyphonie X* (1951) and *Poésie pour pouvoir* (1958).

#### *IV.2. Serialism (Polyphonie X)*

Boulez's earliest letters to Cage explore the aesthetic implications of rhythmic structure and serial mechanisms before the 'failure' of his total serial project. In the letter to Cage about *Polyphonie X* in December 1950, he wrote that the work's 'collection of polyphonies' would result in a structural situation in which 'one will be able to select what one

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<sup>82</sup>Boulez, 'Current Investigations', 19.

<sup>83</sup>Boulez, 'Current Investigations', 17.

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likes'.<sup>84</sup> Boulez spoke of applying Cage's technique of 'sampled sonorities' in order to achieve an independent musical result.<sup>85</sup> In the context of the design of *Polyphonie X*, this comes across as a fundamentally serial image, but its origins become blurred as Boulez goes on to translate the structural image into an aesthetic ideal. He stated that he was working on restructuring the 'notion of the musical work made to be given in a concert, with a fixed number of movements', substituting it instead with a 'book of music with the dimensions of a book of poems'.<sup>86</sup> But he also argued that Cage's compositions were an even greater stimulus to his desire to create this sort of open-form work, notably the sound groupings used in Cage's two pieces from the 1940s, *Sonatas and Interludes* of his *Book of Music* for two pianos.<sup>87</sup>

#### *IV.3 Electronics (Poésie pour pouvoir)*

It is difficult to ascertain from this letter whether the idea for a 'book of music' grew from the proliferative mechanism of serialism or was simply grafted onto the serial project from the works of Cage. The closeness of the two influences in this period is nevertheless significant and complicates Boulez's later decision so radically to revise Cage's role in formulating his interest in this central feature of his post-

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<sup>84</sup>Boulez, Document 26, 80.

<sup>85</sup>See Boulez, Document 26, 85.

<sup>86</sup>Boulez, Document 26, 86.

<sup>87</sup>Boulez, Document 26, 86.

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war indeterminate project. The 1958 electro-acoustic project *Poésie pour pouvoir* further complicates the issue of influence. As a composition, *Poésie pour pouvoir* has been largely ignored. Boulez himself suggested that its achievement was eclipsed by the later electro-acoustic composition '*...explosante-fixe...*' of 1971.<sup>88</sup> Despite the fact that it remains unpublished and has been overshadowed in this way, *Poésie* nevertheless remains an important work, in particular for its 'failure' and for its role in isolating other difficulties in Boulez's post-war project at the close of the 1950s.

Boulez's discussion of the piece in letters and interviews makes this fact especially clear. He has said that *Poésie* attempted to reconcile opposing elements, to 'bring electronic and orchestral sounds together' into a dialogue where 'improvisation and non-improvisation' could be combined in an 'extended hearing space'.<sup>89</sup> He was interested at the time, he has said, in discovering a means of 'expansion', a 'real expansion of thought', a procedure that allowed orchestral players to interact with electronic media through loudspeakers in the context of a performance combining 'visual support with an extended hearing space'.<sup>90</sup> The project failed, he believed, because of the difficulty in creating an effective means of dialogue between electronic and acoustic

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<sup>88</sup>Boulez and Jameux, 'Interview', 201.

<sup>89</sup>Joan Peyser, *Boulez: Composer, Conductor, Enigma* (London, 1977), 162; Boulez and Jameux, 'Interview', 201-202.

<sup>90</sup>Boulez and Jameux, 'Interview', 201.

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media, in bridging the 'heterogeneous character of the two media and the break dividing them'.<sup>91</sup> As we have seen, the lack of an intersection between the 'undifferentiated universe' of electronic material and the hierarchical world of acoustic sound thwarted his early attempts to combine tape and indeterminacy; later, in *Poésie*, it frustrated his attempt to combine acoustic and electronic sound.<sup>92</sup> Boulez's continued interest in achieving an electro-acoustic synthesis is significant and will come up again in our discussion of the changes in his compositional project after the 1950s in Chapter Three. For our present purposes, *Poésie* is most consequential for the year it was written, however: Boulez attempted the project between the conception of the Third Piano Sonata in 1957 and the 1960 publication of 'Sonata, que me veux-tu?'.<sup>93</sup>

In the early electronic *Études*, Boulez had been concerned to analyze and organize sound on tape, a standard procedure in Schaeffer's studio at the time. By 1954 -- the year he wrote in 'Current Investigations' that his interest in open form had been inspired by Joyce and Mallarmé -- however, Boulez had fallen out with both Cage and Schaeffer and was anticipating working alongside Stockhausen in Eimert's electronic studio in Cologne.<sup>93</sup> In a letter to Cage at the time, Boulez wrote of his excitement at the prospect of working with Stockhausen, who, Boulez suggested pointedly, was 'extremely sensitive to

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<sup>91</sup>Boulez and Jameux, 'Interview', 201.

<sup>92</sup>Boulez, '"At the Edge of a Fertile Land"', 159.

<sup>93</sup>See Boulez, Document 45, 149-150.

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part of the "miraculous" in music [would] go with him'.<sup>97</sup>

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Although Boulez was unable to recreate this effect in his own electro-acoustic compositions later in the decade, these documents confirm both his continued interest in achieving an ideal solution to the deadlock in the state of musical language through electronic technology and his sustained pursuit of what was essentially a Cageian concept in the late 1950s -- the heightened 'individuality' of sound. Boulez's attempt to realign this interest with the work of Stockhausen in his letter to Cage in 1954 emphasises his desire to associate indeterminacy with electronics and serialism. This approach, if successful, would also have promised completely to dissociate his post-war indeterminate aesthetic from the early influence of Cage. Against the background of a comparison of 'Current Investigations' with discussions of *Polyphonie X* and the Third Piano Sonata, and in light of our examination of the treatment of electronics in writings early in the decade, however, Boulez's statement offers new evidence to support an alternative reading. First, it clarifies that his differentiation between a serially inspired indeterminate aesthetic and Cage's 'random' procedures in December 1951 was made on the premature faith in an unproven, developing technology. Second, it strongly suggests that the cloud of

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<sup>97</sup>Boulez, '"At the Edge of a Fertile Land"', 161.

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<sup>97</sup>Boulez, '"At the Edge of a Fertile Land"', 161.

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doubt produced by this overconfidence still cast a shadow over his work at the end of the decade, and may have played a significant role in the failure of *Poésie* in 1958, the 'unfinished' status of the incomplete Third Piano Sonata and the revisionist aesthetics of 'Sonata, que me veux-tu?'. The 'alternative' Boulez proposed to Cage's indeterminacy was an inspired articulation of the central trends of the early post-war period. That he became increasingly aware of the insurmountable nature of the problems inherent in his vision later in the decade, however, is borne out by the evidence of his subsequent efforts at significant historical revision.

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## Chapter Two

### Writing the Third Piano Sonata

Why compose works that have to be re-created every time they are performed? Because definitive, once-and-for-all developments seem no longer appropriate to musical thought as it is today, or to the actual state that we have reached in the evolution of musical technique, that is increasingly concerned with the investigation of a relative world, a permanent 'discovering' rather like the state of 'permanent revolution'. My real motive in writing [the Third Piano Sonata] is to go more deeply into this point of view rather than simply to rebaptise the reader's ear into still another state of grace, that might be thought a rather commonplace undertaking.

(Boulez, 'Sonata, que me veux-tu?', 1960)<sup>1</sup>

#### I

The essays Boulez published between composing *Structures I* (1951) and the Third Piano Sonata (1957) make clear the wider implications of his growing belief in an increasingly 'relative' compositional world. In 'Possibly...' (1952), he wrote of having arrived at a period of 'stocktaking', a stage in which the 'destructive experiment' of the abolition of

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<sup>1</sup>Pierre Boulez, 'Sonata, que me veux-tu?', *Orientations: Collected Writings*, ed. Jean-Jacques Nattiez, trans. Martin Cooper (London, 1986), 143-154, p. 143. This article first appeared in German in *Darmstädter Beiträge zur neuen Musik*, 3 (1960), 27-40; Eng. trans. by David Noakes and Paul Jacobs *Perspectives of New Music* (Spring, 1963), 32-44. The original French version was published in *Meditations*, 7 (Spring, 1964), 61-75. This essay is referred to subsequently as 'Sonata'.

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tonality and regular metre achieved by free-atonal and serial writing would begin to bear fruit.<sup>2</sup> In the 1954 essay 'Near and Far...', Boulez stated that 'closed or open structures, the degree of automatism or freedom involved in their interaction' were creating new musical dimensions, 'almost a new way of perceiving the musical work, of experiencing its necessity'.<sup>3</sup> And in 1955, in '"At the Edge of a Fertile Land" (Paul Klee)', he wrote that electronic music had changed the nature of the composer's relationship with compositional order; 'everything that was a limitation becomes unlimited [and] everything one thought "unmeasurable" suddenly has to be measured'.<sup>4</sup>

While Boulez's understanding of the complexity and potential of electronic technology was a significant feature in a great number of his discussions of his post-war aesthetic in the 1950s, the issue was marginal to the aesthetic of the 1957 Third Piano Sonata in his account of it in the text 'Sonata, que me veux-tu?'.<sup>5</sup> The 'motive' for devising the Sonata,

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<sup>2</sup>For a later exposition on 'stocktaking', see Pierre Boulez, 'Tendencies in Recent Music', *Stocktakings from an Apprenticeship*, collected and presented by Paule Thévenin, trans. Stephen Walsh (Oxford, 1991), 173-179, p. 173. Pierre Boulez, 'Possibly...', *Stocktakings*, 111-140, p. 114. Originally published as 'Éventuellement...', *La Revue musicale*, 212 (May, 1952), 117-148.

<sup>3</sup>Pierre Boulez, 'Near and Far', *Stocktakings*, 141-157, p. 142.

<sup>4</sup>Pierre Boulez, '"At the Edge of a Fertile Land" (Paul Klee)', *Stocktakings*, 158-172, p. 158.

<sup>5</sup>The date of the initial conception of the sonata is a matter of debate. On Belgian radio in 1972, Boulez stated that his work on the composition began in 1956-57 (Boulez and Deliège, *Conversations with Célestin Deliège* [London, 1976], 51), a date corroborated by Stacey (*Boulez and the Modern Concept* [Aldershot, 1987], 77). The coincidence of the 1957

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Boulez wrote, was to 'go more deeply' into a 'relative world', an idea that characterised 'musical thought as it is today' and reflected 'the actual state' of the evolution of musical technique in the closing years of the 1950s.<sup>6</sup> His serial and post-serial experiments of the previous decade had clarified what was to be 'the way ahead' for the composer -- the exploration of indeterminate structures and the move to open form.<sup>7</sup> The 'imaginative possibilities' of such a method are 'endless', he stated in 1960; 'it is the composer's delight to set out towards a horizon and to find himself in a totally unknown country, of whose existence he was hardly aware.'<sup>8</sup>

From the account of the piece in Boulez's 1960 text, it would appear that the principal achievement of the Third Piano Sonata was to be its flexibility -- the manner in which each of the work's five 'formants' could display local indeterminacy, while their mobile arrangement in performance created eight

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publication of Jacques Shérier's edition of Mallarmé's *Livre*, which the sonata closely resembles, encourages the reading of a 1957 conception, however. For an account of Boulez's reaction to the similarity of the two projects and their relationship to Mallarmé's poem 'Un Coup de dés', see Boulez and Deliège, 50-51.

<sup>6</sup>Boulez, 'Sonata', 143.

<sup>7</sup>These experiments include the Second Piano Sonata (1948), *Le Marteau sans maître* (1954), *Polyphonie X* (1950-51) and *Structures I* (1951-52).

<sup>8</sup>Boulez, 'Sonata', 154. Boulez reiterates this need as late as 1968 in Pierre Boulez, 'Where are we now?', *Orientations*, 445-463, p. 446.

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possible variations or 'interpretations' of the work.<sup>9</sup>

'Antiphonie' was to employ limited permutational form; 'Trope' would use circular form and variable articulation;

'Constellation (Constellation-Miroir)' would contain both reversible global form and the juxtaposition of fixed and mobile local gestures; 'Strophe' would be built on a kind of variable, cumulative form; and form articulated by

transposition of pitch constructions would feature in

'Séquence' (Example One).<sup>10</sup> The global design of the Sonata was based on a 'symmetrical, mobile disposition around the central formant' that was to be the formal 'kernel' of the work.<sup>11</sup> Around this kernel, the remaining formants were to be grouped in pairs and would float on 'concentric orbits, the outer orbit being able to become the inner and vice versa' (Example Two).<sup>12</sup>

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<sup>9</sup>For an early discussion of formants and how Boulez derived the term by analogy from acoustics, see Pierre Boulez, 'Current Investigations', *Stocktakings*, 15-19, p. 17. On the role of the formants in connecting local and global structure, see his 'Form', *Stocktakings*, 90-96, p. 93; For the eight 'interpretations', see 'Sonata', 153.

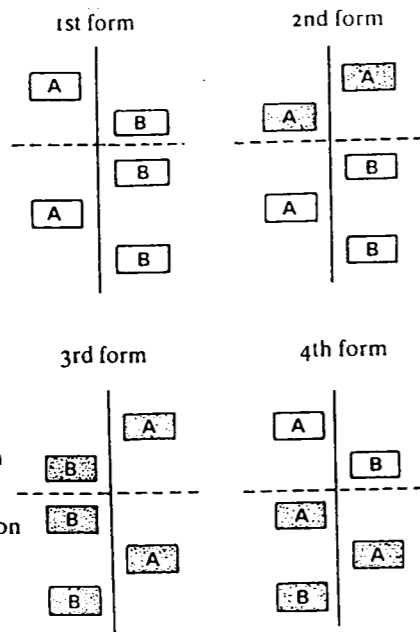
<sup>10</sup>'Séquence' was the least developed of the formants in 1960. Boulez wrote: 'I shall say least of all about the last of these *formants*, *Séquence*, since it presents the most problems, to which I have still found no practical solutions' ('Sonata', 153). For critical accounts of the work, see Boulez, 'Sonata', 148-153. For other studies, see Paul Griffiths, *Boulez* (London, 1978), 38-43; Dominique Jameux, *Pierre Boulez* (Paris, 1984), 299-308; Joan Peyser, *Boulez: Composer, Conductor, Enigma* (London, 1977), 126-129; Manfred Stahnke, *Struktur und Aesthetik bei Boulez: Untersuchungen zum Formanten 'Trope' der Dritten Klaviersonate* (Hamburg, 1979); and Peter Stacey, *Boulez and the Modern Concept* (Aldershot, 1987), 77-85.

<sup>11</sup>Boulez, 'Sonata', 153.

<sup>12</sup>Boulez, 'Sonata', 153.

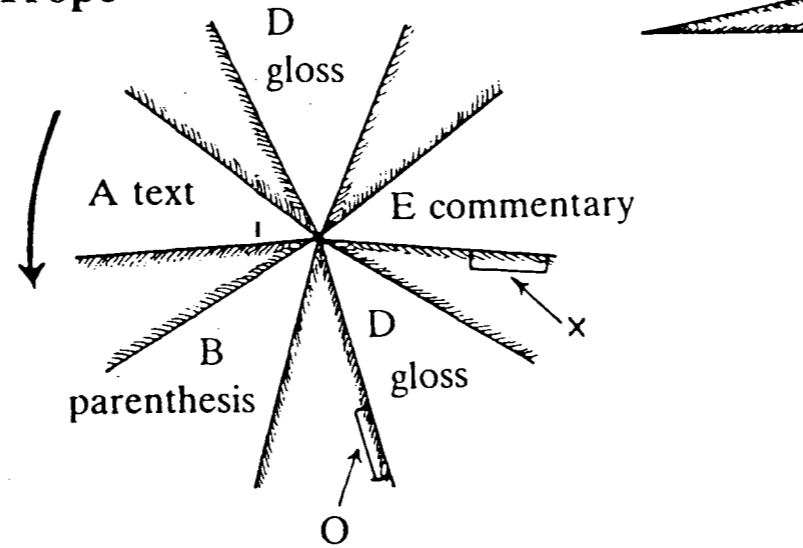
Example One: Boulez's diagrams of the formants of the Third Piano Sonata ('Sonata, que me veux-tu?', 1960)

Antiphonie

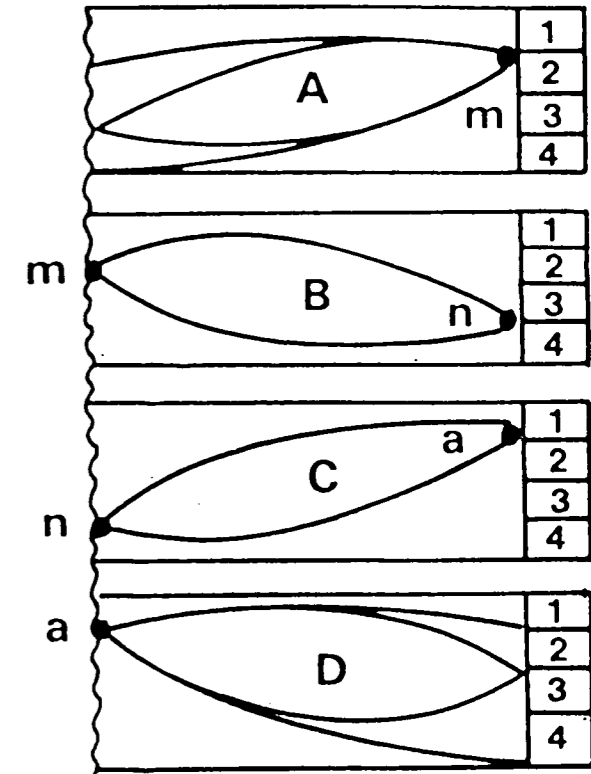


Reading from top to bottom:  
 □ original structure written on the front of the strip  
 ▨ varied structure written on the back of the strip

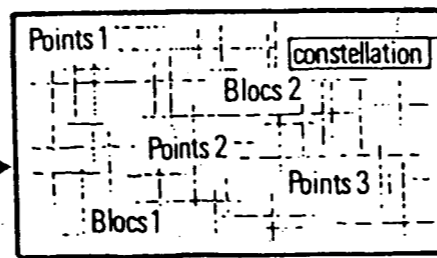
Trope



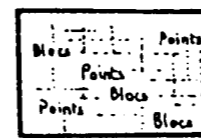
Strophe



Constellation-Miroir

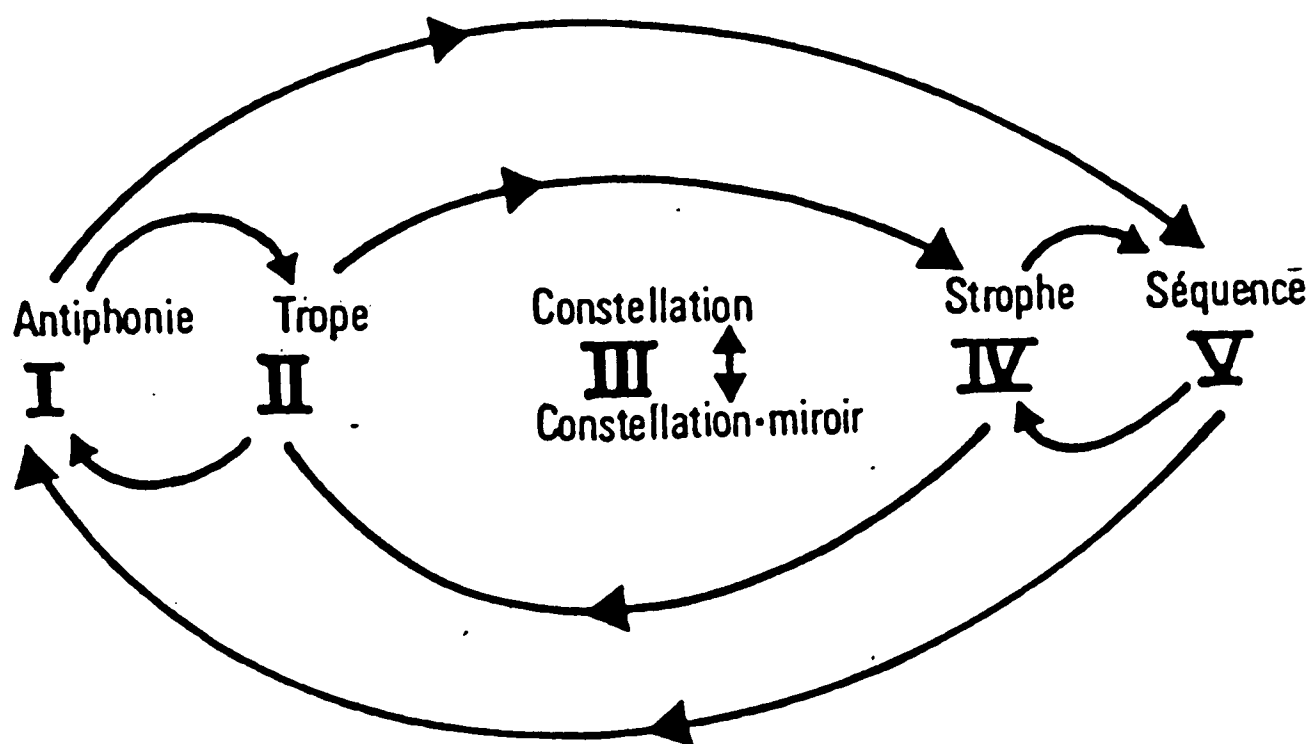


Constellation



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Example Two: Boulez's diagram of the overall formal design of the Third Piano Sonata ('Sonata, que me veux-tu?', 1960)



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Two aspects of the Third Piano Sonata are particularly relevant to an investigation of his aesthetic of indeterminacy in the 1950s. First, the piece is 'unfinished' -- with the exception of 'Trope' (1961) and 'Constellation-Miroir' (1963), the work remains incomplete, a theme that will be investigated further in Chapter Three. Second, Boulez has stated that his inspiration for the piece was not primarily musical; rather, he maintained in 'Sonata, que me veux-tu?', 'literary affiliations played a more important part than purely musical ones' in compelling him to write the Sonata.<sup>13</sup> 'Writers at the present time', he asserted, 'have gone much further than composers in the organisation, the actual mental structure of their works'.<sup>14</sup> In Joyce, Boulez wrote, the novel 'observes itself *qua* novel ... reflects on itself and is aware that it is a novel'; his 'logical', 'coherent' and 'prodigious technique' was 'perpetually on the alert and generating universes that themselves expand'.<sup>15</sup> In Mallarmé, he continued, poetry

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<sup>13</sup>Boulez, 'Sonata', 143.

<sup>14</sup>Boulez, 'Sonata', 143. For a discussion of Mallarmé and Debussy, see Pierre Boulez, 'Corruption and the Censors', *Stocktakings*, 20-25, p. 20. Originally published as 'La Corruption dans les encensoirs', *La Nouvelle Revue française*, 48 (December, 1956), 1078-1084. For an essay expanding on this idea, see Pierre Boulez, 'Sound and Word', *Stocktakings*, 39-43.

<sup>15</sup>Boulez, 'Sonata', 143-144; For Boulez's introduction to Joyce by Cage, see Pierre Boulez, Document 6, in Jean-Jacques Nattiez, ed., *The Boulez-Cage Correspondence*, with Françoise Davoine, Hans Oesch and Robert Piencikowski, trans. Robert Samuels (Cambridge, 1993), 43-46, p. 46. For studies of Joyce see John Brannigan, Geoff Ward and Julian Wolfreys, eds., *Joyce: Text, Culture, Politics* (Basingstoke, 1998); Tony E. Jackson, *The Subject of Modernism: Narrative Alterations in the Fiction of Eliot, Conrad, Woolf and Joyce* (Ann Arbor, 1994). Boulez knew the 1957 publication of Mallarmé's *Livre*, edited by

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'became an object in itself, justified in the first instance by poetic research'.<sup>16</sup> Music, Boulez concluded in 1960, 'must also become aware of itself and become the object of its own reflection'.<sup>17</sup>

Boulez's explanation of how music could absorb these developments clarifies what he believed to be lacking in the genre at the end of the 1950s. In 'Sonata, que me veux-tu?' Boulez stated that music could embrace these literary developments in two ways. First, the musical work could adopt the structural potential of 'formal, visual, physical -- and indeed, decorative presentation of the poem'.<sup>18</sup> The design and distribution of notation in a score, like the spatial distribution of words and phrases on a page, could evoke differing interpretative responses from a performer, the meaning-embodying process on which the realisation of the composition depends. Second, the overall form of the musical work could maintain an awareness of the process through which that meaning was expressed. In a book of poetry, Boulez stated, the meaning of a poem is contingent on its place in the overall collection -- the second poem in a series will be read in light of the first and the third in light of the second, whereas the first poem read is free of these cumulative

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Jacques Schéerer (see note 6). For the most recent edition, see Stéphane Mallarmé and Jacques Schéerer, *Le 'Livre' de Mallarmé* (Paris, 1977).

<sup>16</sup>Boulez, 'Sonata', 144.

<sup>17</sup>Boulez, 'Sonata', 144.

<sup>18</sup>Boulez, 'Sonata', 147.

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meanings. In Mallarmé's *Livre*, the distribution of the 'poems' in the course of the 'book' incorporated the way in which meaning was derived as part of its overall structure.<sup>19</sup> In doing so, Boulez maintained, the *Livre* became a unique kind of self-portrait -- it was a literary work in which structure was synonymous with meaning.<sup>20</sup>

'Sonata, que me veux-tu?' suggests that Boulez designed the Third Piano Sonata to effect this same unity of form and expression. The indeterminate procedures employed in the individual formants, particularly in relation to the greater structure of the work, were to create multiple levels of what Boulez called 'indeterminate choice' -- structures that were variable but self-limiting.<sup>21</sup> The composition would offer performers opportunities to choose their own direction, but none of the available permutations would be infinitely permutable, a fact that restricted the freedom of the performer at the same time as it preserved the composer's will. Finally, like Mallarmé's *Livre*, which would be 'revealed' in a series of

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<sup>19</sup>Boulez appears to inherit his notion of a limited permutation from Mallarmé. Quoting (although not citing) Jacques Schérer, editor of the 1957 publication of the *Livre*, Boulez writes that the Third Piano Sonata is meant to work like a collection in which 'the sheets are allowed their freedom, but if this freedom were total, it would take several lifetimes to exhaust the work's content. We can only speak of a "controlled freedom"' (Boulez, 'Sonata', 153). For a recent study of Boulez's interest in Mallarmé with particular reference to *Le Marteau sans maître*, see Mary Breatnach, *Boulez and Mallarmé: A Study in Poetic Influence* (Aldershot, 1996).

<sup>20</sup>For a study of open form in the literary work, see Umberto Eco, *The Open Work* (London, 1985) and *The Limits of Interpretation* (Bloomington, Indiana, 1990).

<sup>21</sup>Boulez, 'Sonata', 146.

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public readings, the identity of the Third Piano Sonata would be contingent on its presentation in multiple performances. The comparative experience of the various combinations of its indeterminate material would create what Boulez called 'prismatic subdivisions of the Idea' of the composition, offering 'new possibilities of interpreting the work' that could be 'discovered' over time.<sup>22</sup>

## II

Despite the publication of 'Sonata, que me veux-tu?' so soon after the Sonata's conception, the rapid dissemination of the article in France and America by 1964, and the early opportunity this availability afforded critics to assimilate the Sonata's aesthetic, a pressing question still strikes at the heart of Boulez's project: why write the Third Piano Sonata in 1957? It is not clear why Boulez sought a musical work that, like a poem of Mallarmé or a novel of Joyce, was an 'object in itself' so relatively late in the post-war period. What musical work can be said to observe itself '*qua*' musical work if not John Cage's *4'33"* of 1952?

The justification that Boulez offers for writing the piece in 'Sonata, que me veux-tu?' does not go a long way

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<sup>22</sup>Boulez, 'Sonata', 146, 148. This quote originates in Jacques Schérier's introduction to the 1957 publication of the *Livre*, although the exact reference is not cited in Boulez's text. The image of the 'Idea' of the composition is evocative of Schopenhauer and, through him, Wagner and Schoenberg, a connection that falls outside the scope of the present study.

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toward answering these questions. Mallarmé's move to 'aestheticise' the physical appearance of text was revolutionary in the 1890s, but the works by proponents of Dada, artists such as Duchamp and Pollock and the composers Earle Brown and Morton Feldman had made the exploitation of the connection between form and expression commonplace by the mid-1950s.<sup>23</sup> The notion that the meaning of a musical work could be enhanced by multiple performances was implied in pieces as early as Cage's *Imaginary Landscape* No. 4 (1951), if not overt in his 'number pieces' of 1953-56.<sup>24</sup> Even the assertion that pieces embodying Joyce's development of 'universes which themselves expand' were lacking at the close of the 1950s seems overstated: did not Boulez himself achieve this at the beginning of the 1950s in *Polyphonie X* and *Structures I*?

Boulez's reasons for writing the Third Piano Sonata in 1957 are complicated, as an examination of the background against which he argued for a 'literary' model of open form in 1960 shows. In 'Sonata, que me veux-tu?', Boulez discussed the 'current state of musical language' and called for a revision

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<sup>23</sup>For a study of Mallarmé's last poem 'Un Coup de dés', see Virginia A. La Charité, *The Dynamics of Space: Mallarmé's 'Un Coup de dés jamais n'abolira le hasard'* (Lexington, KY, 1987). For Dada, see Hans Richter, *Dada: Art and Anti-art*, trans. David Britt (London, 1997). For the use of notation to effect expression, see Brown, *December 1952* and Feldman *Projections II* (Example One in the Introduction, page 12).

<sup>24</sup>*Music from Piano 2-84* (1953-56), *Music for Carillon Nos. 2 and 3* (1953), *59.5" for a String Player* (1953), *34'46.776" for a Pianist* (1954) and others in the same series extending to 1956 (Pritchett's '10,000 Things', 95). For a discussion of this period of Cage's work, see James Pritchett, *The Music of John Cage* (Cambridge, 1993), pp. 92-96.

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of the musical work in light of post-war developments that had created 'a large repertory of possibilities and a vocabulary that is once again capable of universal concepts and universal comprehension'.<sup>25</sup> He suggested that 'all the essential discoveries [for a new music] have been made', leaving the composer a 'certain margin of security', at least stylistically speaking.<sup>26</sup> But his reasons for pursuing the 'one major task ahead -- the total rethinking of the notion of form' were backward-looking for an essay published in 1960: first, he wrote that periodicity and symmetry were of 'diminishing importance' in musical language, and repetition was no longer appropriate to his vision of the new, 'relative world'; and second, rather than reproduce forms typical of Western art, he suggested, structures should follow the model of the 'maze' or 'labyrinth' -- composers should turn from Western to Eastern formal models.<sup>27</sup>

That Boulez should acknowledge the move towards a 'relative musical world' and the formal procedures of non-Western countries is not, initially, surprising; and it is true that periodicity and symmetry had little to say to composers after Webern. But we know that Boulez had been dissatisfied

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<sup>25</sup>Boulez, 'Sonata', 144.

<sup>26</sup>Boulez, 'Sonata', 144.

<sup>27</sup>Boulez, 'Sonata', 144, 145. For Boulez on Eastern music in Europe, see his 'Corruption and the Censors'; see also Boulez, Document 35, *Correspondence*, 112-127, p. 112; and Document 6, *Correspondence*, 43-45, p. 45. Boulez uses the term 'labyrinth' with respect to Kandinsky's paintings in the 1966 essay 'Kandinsky and Schoenberg', *Orientalisms*, 344-345, p. 345.

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with Cage's interpretation of Eastern influences in Western music by 1952. These other ideas had run their course through Boulez's writings in the mid-1950s and had become common currency among members of the European and American avant-garde.<sup>28</sup> It is unclear why they figure prominently in a vision of the 'way ahead' as late as 1960, particularly to the author of articles such as 'Possibly...' and '"At the Edge of a Fertile Land"', or to the cosmopolitan composer of a work like *Le Marteau*.

This difficulty raises questions about the authority of 'Sonata, que me veux-tu?' as an historical account, both of the Third Piano Sonata and of the context in which it was conceived. In particular, it brings two of his claims into sharper focus: that 'writers ... [had] gone much further than composers in the organisation, the actual mental structure of their works' by the end of the 1950s; and that these ideas brought him to the 'horizon of a totally unknown country of whose very existence he was hardly aware'.<sup>29</sup> The examination

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<sup>28</sup>For studies on avant-garde and experimental music in the twentieth century, see Michael Nyman, *Experimental Music: Cage and Beyond* (Cambridge, 1999); Georgina Born, *Rationalising Culture: IRCAM, Boulez, and the Institutionalisation of the Musical Avant-garde* (Berkeley and London, 1995); John Corbett, *Extended Play: Sounding Off from John Cage to Dr Funkenstein* (Durham, NC, 1994); William Duckworth, *Sound and Light: La Monte Young, Marian Zazeela* (Lewisburg and London, 1996); Leigh Landy, *What's the Matter with Today's Experimental Music?: Organised Sound Too Rarely Heard* (Chur and Reading, 1991); Albrecht Reithmüller, *Revolution in der Musik: Avantgarde von 1200 bis 2000* (Kassel, 1989); and Calvin Tomkins, *The Bride and the Bachelors: Heretical Courtship in Modern Art* (London, 1965).

<sup>29</sup>Boulez, 'Sonata', 143, 154.

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of two related aspects of the context in which Boulez conceived the piece offers the possibility of an alternative reading of these statements: his discussion of indeterminacy in the essay 'Alea'; and the treatment of the subject in his writings before 1952.

### III

#### **Indeterminacy in 'Alea', 1957**

'Alea' is Boulez's most comprehensive written exposition on chance and indeterminacy. As a document, it is also significant because it was written contemporaneously with the conception of the Third Piano Sonata and predates 'Sonata, que me veux-tu?' by some three years. The confidence that characterises Boulez's discussion of open form in the 1960 essay is untempered in 'Alea', which resonates with the strength of Boulez's apparent purpose in writing it in 1957: the text erects a definitive hierarchy of value between 'meaningful' and 'meaningless' chance and marks the authoritative drawing of the line down the middle of the as-yet undifferentiated achievements of the post-war avant-garde.

#### ***III.1 'Meaningless' chance***

Although Boulez mentioned neither individual composers nor specific works in 'Alea', we know that the chance procedures he rejected in the essay would have been familiar as Cageian concepts to readers of its first place of publication, the

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journal *La Nouvelle Revue française*. Boulez objected to three principal types of chance -- 'accidental chance', 'chance by automatism' and the idea of the 'performer-as-medium' -- and contrasted them with what he called 'justifiable' chance procedures: those that reject pre-established structure, adopt a structural 'labyrinth' or incorporate 'mobile complexity' typical of music that is 'played and interpreted'.<sup>30</sup> With 'accidental chance', the most 'basic embodiment of chance', Boulez wrote in 1957, traditional structures are replaced with techniques inspired by 'quasi-oriental philosophy'.<sup>31</sup> Local events in these works occur 'as [they] will, without control' and are incorporated because of a belief in the essential value of chance's organising potential. This technique, Boulez maintained, is simply a 'narcotic which protects against the needle-prick of invention' -- a factor that he believed concealed a 'fundamental weakness in compositional

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<sup>30</sup>Pierre Boulez, 'Alea', *Stocktakings*, 26-38, pp. 26, 29; originally published under the title 'Aléa' in *La Nouvelle Revue française*, 59 (Nov, 1957), 839-57. The parallels between 'good' chance and the Third Piano Sonata are clear in 'Alea'; Boulez's statement about a work embodying a 'self-renewing kind of mobile complexity' in particular foreshadows the ideal work concept he outlines in 'Sonata, que me veux-tu?' ('Alea', 29).

<sup>31</sup>Boulez, 'Sonata', 26. It is likely that Boulez refers to Cage's use of the coins of the *I-Ching* to make choices from precompositional charts of material, a procedure he employed in three 1951 compositions, the Concerto for Prepared Piano and Orchestra, *Music of Changes* and *Imaginary Landscape* No. 4. Boulez uses the term 'chance' throughout 'Alea', despite its implication of automatic, rather than merely open-ended, structures. From 'Sonata, que me veux-tu?', the term 'indeterminacy' replaces 'chance' in Boulez's texts to refer to pieces involving open form.

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technique'.<sup>32</sup>

Second, Boulez objected to what he called a 'more poisonous and insidious' chance -- that which purported to achieve objectivity through the mechanisation of the compositional process (27). In these works, Boulez argued, 'schematization' replaces the composer's invention, restricting the act of composing to the creation of a mechanism that generates the work beyond the restrictions of the composer's will. This especially seductive form of chance, he wrote, had resulted from 'a furiously sterile pursuit of combinatorial power, a ferocious rejection of the arbitrary, the new "diabolus in musica"' (27). Finally, Boulez briefly discussed a third kind of 'unacceptable' chance, one in which composers used abstract notation to increase the performer's role in interpreting material in performance. These works, he suggested, were the result of the factor that underlay these 'accidental' and 'automatic' procedures: the desire on the part of composers to avoid their central responsibility -- choosing musical material.

A single belief drove Boulez's objections to each of these chance procedures in 'Alea': that in order for a musical work to maintain expression, it must create a consistent aesthetic environment, an assumption that presumes that musical meaning is dependent on the presence of some fundamental system limited

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<sup>32</sup>Boulez, 'Alea', 26. For the course of this discussion, subsequent references to page numbers in 'Alea' will appear in the text.

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by the composer's will. What he called the 'furiously sterile pursuit of combinatorial power' resulted in compositions that lack an essential element of control. 'Accidental chance', he wrote, could only produce structures where 'everything just happens as it will' -- structures that were 'not meritorious' because a given performance could only offer what Boulez described as a fixed, singular result, rather than one derived from a wider pool of possible options (26).

The most important factor in this model is the extent to which musical material can be seen to be 'derived' from some fixed set of possibilities. Chance mechanisms fail, Boulez suggested, because they lack the meaning-embodying network that is created by this derivative process. Two premises that underlie this statement about musical structures are especially important to our wider study of Boulez's indeterminate aesthetic at this time. First, this assertion implies that musical material is not in itself intrinsically meaningful, but that its meaning is contingent on its relationship to a larger structural environment. Second, it suggests that structure is the most powerful element in systems of musical meaning and that the organisation of musical material establishes a unique structure-specific vernacular in each new musical work.

Boulez's statements about the meaning-embodying potential of structural systems also suggest that, although the mechanisation of compositional processes may be in some way 'intentional', these processes lack 'invention' (26-27). In particular, in works that aspire to achieve 'objectivity' in

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their musical material through chance procedure, the composer's imagination is restricted to the construction of a schema that, when put in motion, 'takes on the task of generating microscopic and macroscopic structures until the exhaustion of all possible combinations marks the end of the work' (27). Rather than imbue the work with the desired level of material objectivity, Boulez maintained in his text, this method simply replaces human subjectivity with a different -- and lesser -- determinate system. Boulez believed that chance, although random, responds to a 'fixed network of probabilities, since even chance must have some kind of outcome' (26). Outside a context-determining system created by a composer, the 'random' status of 'fragments of chance' would be undermined by their own structural nature, thwarting composers' attempts to use them to evoke a non-directional network of meaning. Outside a composer-directed system, 'schematisation' cannot achieve expression, he stated: musical meaning depends on a precompositional musical system that embodies but does not express its initial 'network of probabilities'.

Finally, Boulez addressed chance works in which objectivity was purportedly achieved through the 'performer-as-medium' (28). Increasing the performer's interpretative potential, he maintained, was merely a means by which composers could choose to be 'imprecise' by extending the responsibility of individuals on whom they already depend (28). The composer 'escapes choice, not by numbers', as in Boulez's first two examples, 'but through the performer. One transfers one's

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choice to him' (28). Like compositions in which a composer could use accidental chance and schematisation to generate structure, these works were 'totally irrelevant to the study of a work which, structurally, rejects such ... excessively crude and primitive methods' (28-29).

### *III.2 'Meaningful' chance*

After his attack on these methods of unacceptable chance -- procedures, he said, that were used by composers who 'fetched the devil, and brought him back duly escorted, imprisoned, and chained with a thousand fetters' to the musical work -- Boulez outlined 'acceptable' chance procedure in 'Alea' in a discussion that both recalls the content of 'Current Investigations' outlined in Chapter One and powerfully anticipates the 1960 text 'Sonata, que me veux-tu?' (28). In 'Alea', he outlined his idea of compositional formants and his belief in the limited but essential contribution of the performer to the realisation of a musical idea. The rest of the text is taken up with a discussion of how composition and chance could be 'reconciled'.<sup>33</sup>

The goal of his chance procedures, Boulez wrote in 'Alea' in 1957, was to expand the 'very primitive conception of what we mean by "human"' and to marry 'human poetics and extra-human chance' (37). His procedures rest, he asserted, on the belief that 'the less one chooses, the more the single possibility

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<sup>33</sup>Boulez, 'Alea', 28, 30, 31, 35. For a later account of this type of chance, see Pierre Boulez, *On Music Today*, trans. Susan Bradshaw and Richard Rodney Bennett (London, 1971), 24-27.

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depends on the pure chance encounter of the sound objects', whereas 'the more one chooses, the more what happens depends on the coefficient of chance implied by the subjectivity of the composer' (33). In his own chance compositions, Boulez maintained, he created works that respect 'the "finite" quality of Western art, with its closed circle, while introducing the element of "chance"' from the 'open circle' of the Oriental tradition (35). In each of his works, his techniques were derived from his desire 'to adapt the serial concept to the entire process of composition: to endow structure ... with the more general idea of permutation' (36). Rather than disintegrate into the 'hypocritical', 'fetishistic' structures of his contemporaries, Boulez maintained, his own permutational procedures were a 'thoroughly justified and logical evolution' owing to two factors: because the mechanism of permutation was limited by 'the restrictions imposed by its own self-determination' and because, in serially derived indeterminate compositions, 'the same organising principle would govern the morphology and the rhetoric alike' (28,36).

No single, clear picture of Boulez's ideal indeterminate musical work emerges from 'Alea'. Rather, the essay introduces a number of possible chance techniques, states why Boulez believes they work, and outlines the potential power of their new and different aesthetic effect. The text takes the reader through a four-part division of chance procedures, each of which is said to mark an increasingly sophisticated level of composition: surface indeterminacy; structural indeterminacy;

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indeterminacy on the level of the concept of structure; and indeterminacy in the 'sound space' of composition. Cumulatively, however, these statements create what is the most significant aspect of Boulez's exposition on chance towards the end of the 1950s -- the point at which his discussion becomes prescriptive rather than descriptive and where he first provides what appears to be reasoned proof for his larger attempt to contrive a division between 'meaningful' and 'meaningless' chance.

### *III.2.1. 'Meaningful' chance: surface indeterminacy*

On the least significant level of structure, Boulez stated that the composer could employ the performer to articulate surface indeterminacy. The musical text could 'contain this interpretive "chance" like a watermark', he wrote, and the composer could create musical material that 'implied modification' that it then falls to the performer to choose (31). Within guidelines that are strictly defined by the composer, performers may execute 'guided chance'; the composition may, for example, offer performers the opportunity to oscillate around a given tempo or allow them the freedom to play a particularly complicated passage at their own speed, creating a situation in which 'the rhythm will be physically linked to the mechanical differentiation' (31).

When this procedure is applied to more than one player simultaneously, Boulez suggested, it can produce 'kaleidoscopic imaginative possibilities' where the composer is able 'to make

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use of the play between the two dimensions of the score: the strict and the interpretive' (31). This type of writing appears to 'resolve the dilemma between strict and free performance', providing the performer is sufficiently 'tuned in' to the composer's invention (31-32). This chance is effective, Boulez suggested, but it is only 'elementary': it is not supplementary to the musical text in the score, but is a function of invention, and of the 'practicalities' of the role of a performer in a sounding musical work (31).

### *III.2.2. 'Meaningful' chance: structural indeterminacy*

It is only on a secondary, structural level that a composition could begin to 'absorb' chance. The composer could establish 'a certain automatism in the relationship between the various networks of probabilities set up at the start', Boulez maintained, a technique in which chance becomes a 'particularly effective resource at a certain stage in a work's development' (32). In this sort of musical work, the composer could construct a procedure that allowed him to maintain a level of flexibility within an otherwise determinate set of musical elements. By defining some, but not all, aspects of a musical event -- while at the same time allowing for the cross-fertilisation of fixed factors such as dynamics and register to other, unfixed elements such as duration -- the composer could create a situation in which the link between material became structural.

This post-serial model of structure preserves the

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composer's control over various possible 'fields of encounter in which chance can operate on the definitively fixed musical event', while at the same time guaranteeing close structural relationships between aspects of the musical material (32). Furthermore, this type of 'structural chance' requires a lack of choice in the early stages of the composition, Boulez maintained, but makes choice increasingly important as the composition progresses. As the probabilities set in motion by the composer multiply in the performance, the creation and definition of material 'depends on the coefficient of chance implied by the subjectivity of the composer' (33).

### *III.2.3. 'Meaningful chance': indeterminacy in the concept of structure*

Boulez maintained that structural indeterminacy was also only 'elementary', however; in order to 'create a more clearly differentiated universe than before, and mark a new and sharper perception of form', the musical work could integrate chance on a third level -- in the 'concept of structure itself', within the 'directed whole' of the composition (33). As a point of departure, the musical work must be designed to invoke what Boulez called 'more subtle differentiations' than previously available (33). This situation could be made possible by the introduction of a number of new types of musical structure in indeterminate works, each of which could contribute to a heightened state of 'differentiation'. Although this differentiation was to be achieved through indeterminate structures, it was essential, Boulez asserted, that it remained

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controlled in order to preserve a sense of global form and to avoid the effect of simple improvisation. Control could be maintained by a fixed network of predetermined formal 'turntables' -- what Boulez calls 'formants' in 'Current Investigations' and 'Sonata, que me veux-tu?' -- and by a system of 'phrasing' that could bind these mobile points of intersection together (33).

The articulation of these sections was to be typical of determinate structures: timbre and tempo could be employed to create differentiation, and they could be enhanced by the application of what he called 'style' -- the 'surface aspect of the actual writing in its horizontal, vertical or diagonal dimension' (34). In order to avoid the danger of 'sectionalisation' that this articulation might effect, however, the development of the work would be 'discontinuous, but in a way that is both foreseeable and foreseen' (33). The points of intersection would be 'adaptable' in that they would be designed to respond to the appearance of fixed structures in the overall texture (33). Most importantly, however, these structures would be made self-limiting through the process of 'phrasing' -- the means by which Boulez would incorporate a 'begin sign' and 'finish sign', both of which he claimed were essential features of the musical work (35).

#### ***III.2.4. 'Meaningful' chance; indeterminacy in the 'sound-space' of a composition***

Boulez concluded his discussion of acceptable indeterminate procedure with an account of the most effective application of

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chance in a composition: the construction of 'non-homogeneous sound spaces' as part of a typical musical texture (35). The availability of these procedures to composers after 1945 was unique to the post-war period, he maintained, but it was not simply contingent on advances in electronic technology. Rather, Boulez stated that the assimilation of sound spaces in the period was part of a more wide-ranging expansion in contemporary music; in particular, he suggested, they had arisen as part of composers' attempts to explore 'concepts that are inherently variable' and to create structures that 'obey evolving hierarchies' in the period after the Second World War (35).

In that time, composers had replaced the pitch-series with the idea of 'a series of sound blocks of unequal density' and metre had been succeeded by rhythmic blocks and series of durations (35). Similarly, the significance of both dynamics and timbre had increased; rather than have a typically decorative role, they became features with functional significance. These developments had created a new dialectic, which resonated between the 'continuity of the machine' and the 'discontinuity [of] the internal pulse of the performer' (35). This result was especially important to post-war music, he maintained, because it destroyed 'the homogeneity of musical time at its very base' (35).

### *III.3 'Alea': summary and implications*

The distinctness of Boulez's 'mobile complexity' in 1957 did

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not simply proceed from a disagreement on whether the composer should apply chance techniques in global or local structures. Rather, it was about which aspects of a composition were essential to the identity of the musical work. Cage, Boulez implied in 'Alea', had underestimated the importance of invention and had displaced the role of the composer with a meaningless mechanistic process. What Boulez had devised, on the other hand, appeared to be the ideal solution: a model that allowed chance to enter within the context of a strictly hierarchical system, and one that would admit chance as a function of structural factors present before a performance began. The conclusion that Boulez's model of 'interpretive chance' differed so dramatically from Cage's 'crude and primitive' schematisation appears to be predicated on a broadly conceived serial model. Like 'Sonata, que me veux-tu?', 'Alea' contains a number of significant inconsistencies that complicates this basic evaluation, however, each of which has specific implications for the conception of the Third Piano Sonata.

The first of the problems in 'Alea' lies in Boulez's description of why the three types of undesirable chance procedure lack meaning. As we have seen, Boulez asserted that the 'performer as medium' overrides a composer's relationship to musical material (28); that 'mechanisation of the compositional process' lacks the guiding influence of 'invention' (26-27); and that material generated by 'accidental chance' is devoid of reference to a meaningful structural

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system (26). By contrast, he proposed a model of the musical work in which the significance of the three types of compositional activity -- decision, application and musical activity -- was contingent on the presence of a unifying structural system, a kind of musical 'grammar' that determined the identity of the piece at the same time as it gave musical material meaning (36). In this model, the composition is seen as a derived object -- a creation whose 'Idea' is expressed by virtue of the tension between a system and its component parts. Meaning, it would appear, is produced as the material -- or the 'parts' of a system -- oscillate against the background of a work's specific structural vernacular. The derivation of the one from the other aspect of the work -- or at the very least their shared semantic quality -- ensures that the composition embodies a means of expression at the same time as it gives it something to express.

Yet what Boulez's model of musical meaning really asserts is not so much that the 'Idea' of a work is contingent on its manifestation in a clearly derived 'system'. It is difficult to establish -- and Boulez does not address the matter in 'Alea' or 'Sonata, que me veux-tu?' -- if such a system needs to be limited, how the 'meaning' between indeterminate material is understood in performance or whether recognition of these structural relations is relevant to the process. If such a system can be unlimited, Boulez's structures could be created and executed within a vast array of possible models of a 'derivative system', and such an idea could be applied to

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purely conceptual musical works as readily as to strictly permutational ones. If the 'meaning' established in performance is known by performers but unknown by listeners, then it is difficult to see where the 'composer's will' is preserved. And if recognition of structural relationships is not essential to Boulez's model of unity, then it is hard to establish the relevance of performance to the concept of the work, a factor that contradicts Boulez's belief that electronic music lacked a critical musical dimension, a discrepancy investigated in Chapter One.

What Boulez's model of an ideal indeterminate musical work at the end of the 1950s seems most concerned to convey is an assertion that is untroubled by these inconsistencies. Rather, his discussion implies that a more fundamental factor creates meaning in a musical system -- the subordination of structures to the greater directive of the composer's will. As already stated, Boulez maintained that composer-directed chance structures were 'thoroughly justified' because the 'same organising principle would govern the morphology and rhetoric alike' (36). In this model, the 'coefficient of chance' -- the aspect of the work implied but not necessarily executed by the mechanism constructed by the composer -- is said to incorporate the expressive potential of chance without forfeiting the composer's authority over any musical eventuality (33). How structures that 'imply modification' produce a more meaningful musical result in performance than those generated by 'mechanisation' is not addressed in Boulez's discussion,

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however. The implication is that these structures preserve some evolved serial notion of unity in a derivative system, and that this unity is not contingent on the presence of observable phenomena. In comparison to the literary model of expanded structures that relies on the implications inherent in the syntax and semantic meaning of language, Boulez's model is crude, however, and neither addresses the issue of practical application, nor clarifies how that status would be preserved in structures featuring expanded permutational material.

Finally, Boulez's discussion of the four 'acceptable' techniques -- surface, structural, conceptual and 'sound-space' indeterminacy -- outlines perhaps the most problematic aspect of his division between 'good' and 'bad' chance: that he sets up a system that measures the meaning of a musical structure against the relative abstraction of the level on which it takes effect. Boulez wrote that the performer could articulate surface, or 'guided chance', and the musical work could 'absorb' chance when 'fields of encounter' allowed it to 'operate on the definitively fixed event' (31, 32). It is only when chance penetrates the 'concept of structure itself ... the directed whole', however, that it could begin to exert its expressive power, to have the potential to depict a 'more clearly differentiated universe than before' and to effect a 'new and sharper perception of form' (33). This statement has considerable consequences, both to the notion of meaning within a system and to the greater idea of an indeterminate musical work. First, it is difficult to reconcile with a belief in

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serial unity and the essentiality in expanded structures of a methodology based on the permutation of physical musical material. Second, it brings Boulez very close to admitting that his ideal indeterminate musical work is primarily conceptual. This conclusion is difficult to evaluate against the wider background of 'Alea', where his criticism of random procedures focuses on methodology and practical execution, rather than attempting to quantify the status of structure and material in a randomly generated musical work.

These problems are serious and 'Alea' makes it clear that Boulez was on some level aware of them as the text went to press at *La Nouvelle Revue française*. Although he wrote that he believed the musical work could combine choice and chance in the text, he warned that the composer must 'keep a close watch on the proliferation of ... automatic structures', lest an 'anarchy of a superficially well-organised kind [wrecks] the structure and takes away all its advantages'.<sup>34</sup> He stated with confidence that the activity of the performer could not influence the structure of a piece, but he admitted that the problem of the relationship between the two was 'simply pushed back a little' by his design and that it was a problem whose 'solutions remain to be found'.<sup>35</sup> He also allowed that his choice of terminology -- words like 'formants' and 'phrasing' -- were not ideal: he had to take the 'temporary risk' of not articulating the 'precise meaning' of his ideas, because they

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<sup>34</sup>Boulez, 'Alea', 32.

<sup>35</sup>Boulez, 'Alea', 33.

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were 'as yet inchoate' (35). In short, 'Alea' conveys that Boulez was serious about establishing how a meaning-embodying system could distinguish an intentional from a non-intentional indeterminate musical work at the end of the 1950s. At the same time, however, despite this considered attempt, it also establishes that he was as yet unable fully to formulate a viable alternative.

#### IV

##### *Indeterminacy in Boulez's early writings*

If Boulez's imprecise account of an ideal indeterminate musical work in 'Alea' confounds the claim that he was seeking to establish a clearly conceived 'literary' model of musical meaning in his work toward the end of the 1950s, this complication is emphasised by the example of Boulez's early writings, particularly the essays and letters from the years leading up to 1952. Throughout the period of greatest intensity in their correspondence -- 1949 to 1952 -- Boulez and Cage acknowledged their mutual debt openly; it is not uncommon to see them stressing the importance of their musical relationship to their compositional productivity.<sup>36</sup> The

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<sup>36</sup>Nattiez's *The Boulez-Cage Correspondence* follows the letters of the two composers between June 1949 and September 1962. The majority were written between Cage's return to New York in 1949 and Boulez's visit to that city in 1951. The fact that their disagreement followed this reunion has fuelled unsubstantiated speculation about their personal relationship. On the issue of the acknowledgement of their mutual debt, two comments from January 1950 are especially interesting. Boulez wrote: '[D]on't forget to tell me what you think is important in your

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careful, even deferential language with which Boulez outlines his debt to Cage in these documents is striking, as is the parallel in their early attitudes to the basic aesthetic of the musical work.<sup>37</sup> These letters also contain statements that reflect interestingly on Boulez's later accounts of an ideal indeterminate musical work, in particular on the discrepancy observable between his account in 'Alea' and his shift of focus in 'Sonata, que me veux-tu?'

#### *IV.1 Correspondence, Cage's 'Forerunners of Modern Music'*

In a letter from Boulez to Cage in January 1950, Boulez stated that he had read and enjoyed 'Forerunners of Modern Music', a 1949 essay on Cage's increasingly relative musical methodology.<sup>38</sup> Cage's aesthetic in 'Forerunners' is based on the division of a composition into two principal elements:

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work ... or about the two of us.' Cage responded: 'Without news of you I am without news of music, and you know I love music with all my heart' (Boulez, Document 6, 44; John Cage, Document 7, *Correspondence*, 46-51, p. 46).

<sup>37</sup>In May 1951, Boulez wrote to Cage: 'I am impatient to get your news. It would give me courage. And courage is needed to carry on constantly the struggle of honesty with oneself and to remain combative in the face of idiocy and bad faith. I feel that fortunately we are people who can have a certain solidarity in this matter' (Pierre Boulez, Document 27, *Correspondence*, 90-92, p. 91); In the same month, Cage wrote to Boulez: 'My devotion to your work does not diminish but rather grows' (John Cage, Document 28, *Correspondence*, 92-97, p. 96).

<sup>38</sup>'Forerunners of Modern Music' was first published in *The Tiger's Eye*, ed. Ruth and John Stephan (New York, 1949). A French translation, 'Raison d'être de la musique moderne', was published in *Contrepoints* (Paris, 1949). The article is known more widely in English from John Cage, *Silence* (London, 1987), 62-66. A second English version of the text, which includes diagrams by Cage not reproduced in *Silence*, is published as Document 5, in Nattiez, *Correspondence*, 38-42.

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structure, which can be controlled, and form, which is 'unconsciously allowed to be'.<sup>39</sup> Composition, Cage wrote, is the 'integration' of these two elements.<sup>40</sup> In this music, which lacks structures dominated by 'classical harmony', musical material is organised by structures 'based on lengths of time', a procedure that evokes 'Oriental and pre-Renaissance' musical cultures.<sup>41</sup> 'Harmonic structure', by contrast, 'is a recent Occidental phenomenon, for the past century in a process of disintegration'.<sup>42</sup>

Second, and more important, however, is the connection between Cage's two-part division of the musical work and the status of musical material in relation to form. In 'Forerunners', Cage ascribed a hierarchy to the relationship between the 'controlled' and 'uncontrolled' aspects of a composition. Within structural rhythm, Cage wrote, elements such as accents, pulsation and motivic durations are 'matters for formal (expressive) use'.<sup>43</sup> Similarly, time-lengths, which are typical of durational objects such as compositions, are said to 'occur accidentally or freely without explicit

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<sup>39</sup>Cage, Document 5, 39. Cage adds two further elements to this division, method and material, and states that they can be either controlled or left free depending on the design of a given composition. For Boulez on form and content, see his 'Form'.

<sup>40</sup>Cage, Document 5, 38.

<sup>41</sup>Cage, Document 5, 39-40.

<sup>42</sup>Cage, Document 5, 40. For a refutation of Cage's perspective on Eastern influences, see Pierre Boulez, 'Oriental Music: A Lost Paradise?', *Orientalisms*, 421-424.

<sup>43</sup>Cage, Document 5, 41.

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recognition of an all-embracing order, but, necessarily within that order'.<sup>44</sup> The relationship of these accidental 'expressive' elements to the underlying rhythmic structure, Cage maintained, creates especially 'luminous' musical activity; the tension created between these gestures and their structural background -- the 'coincidences of free events with structural time points' -- embodies what Cage called 'the paradoxical nature of truth'.<sup>45</sup> The claim that the free elements within fixed formal structures embody the greatest amount of musical meaning has specific implications for Cage's attitude to spontaneous acoustic phenomena, the image with which he concluded the essay. He stated that within these structures any sounds, 'known or unknown, definitive or indefinite', as well as any contexts of those sounds, 'simple or multiple', are made 'natural and conceivable' by the application of rhythmic structure to the overall construction of a composition.<sup>46</sup> This is owing to the fact that these structures 'equally embrace silence' -- that structures based on duration equalise acoustic phenomena, unlike compositions based on functional harmony, which delineate structure by contriving a hierarchical and relative system using specific values of sound.<sup>47</sup> Structures equalising acoustic phenomena

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<sup>44</sup>Cage, Document 5, 41.

<sup>45</sup>Cage, Document 5, 41.

<sup>46</sup>Cage, Document 5, 41.

<sup>47</sup>Cage states that this is in line with current 'technological musical means' (Document 5, 41-42).

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embody a special expressivity, Cage suggested. Like the ephemeral art of sand-painting, he maintained, this 'art for the now-moment' objectifies the essence of time experience. It depicts 'the very nature of the dance, ... of music, or any other art requiring performance'.<sup>48</sup>

#### *IV.2 Correspondence, Boulez's text 'Possibly...'*

Cage's hierarchical, system-specific yet concept-dependent model of musical meaning was of great interest to Boulez in the early post-war period, as a number of contemporary documents show. In lectures, Boulez spoke favourably of Cage and of his experimental structural ideas, particularly those drawn from his compositions for prepared piano.<sup>49</sup> In Liège, Boulez spoke about Cage's percussion research in relation to his own Second Piano Sonata, 'explaining what may link us in researching a work's structure by means of rhythmic structures'.<sup>50</sup> In a lecture in Paris, Boulez wrote that Cage's *Double Music* -- a 1941 composition by Cage and Lou Harrison jointly -- 'recalls ... the experiment of certain French poets during the explosive period of surrealism'.<sup>51</sup> And in his letter to Cage in 1950 on *Polyphonie X*, Boulez stated that:

In certain polyphonies, I shall ... make use, as you do in the music you are in the process of writing, of sample sonorities [*sonorités échantillonées*], i.e. sound

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<sup>48</sup>Cage, Document 5, 42.

<sup>49</sup>Pierre Boulez, Document 1, *Correspondence*, 27-32.

<sup>50</sup>Boulez, Document 6, 44.

<sup>51</sup>Boulez, Document 1, 29.

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aggregates, linked by a constant but movable within the scale of sonorities.<sup>52</sup>

In 1950, Boulez wrote to Cage: '[y]ou have no idea how happy I was to see how we are progressing in making discoveries and in the same rhythm.'<sup>53</sup> In 1951, he continued, Cage was 'the only person who has added an anxiety about the sound materials' he was using; now, Boulez asserted, the two composers would have to 'tackle *real* "delirium" in sound and experiment as Joyce does with words ... to achieve an "alchemy" in sound ... which you have greatly clarified for me'.<sup>54</sup> Boulez's letters outline his ideas on the relationship between musical meaning and structure, the connection between automatic procedures and an aesthetic of indeterminacy, and the association of avant-garde experiments with the structures of writers such as Joyce, whose work Boulez had just been introduced to by Cage. Boulez's texts confirm these parallels and emphasise the link between 'Alea', 'Sonata, que me veutu?' and the early example of Cage.<sup>55</sup> They also clarify the nearness of the conceptual foundation of Boulez's serial to Cage's non-serial project, a detail with lasting implications.

In his essay 'Possibly...' of 1952, Boulez wrote that Cage's exploration of 'complex sounds, sound-complexes and ...

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<sup>52</sup>Pierre Document 26, *Correspondence*, 80-90, p. 85.

<sup>53</sup>Boulez, Document 26, 86.

<sup>54</sup>Boulez wrote that meeting Cage made him 'end a "classical" period' with his *Livre pour quatuor* (1948-49) 'which is well behind [him] now' (Boulez, Document 6, 45).

<sup>55</sup>See Boulez, Document 6, 46.

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the field of rhythm' made him one of the 'sole exceptions' to the belief that there has been little development in musical language since Webern.<sup>56</sup> In his prepared piano, Boulez continued, Cage proved 'the possibility of creating non-tempered sound spaces' from which arose 'the wish to give each sound a specific individuality from the start'.<sup>57</sup> Cage's idea of 'sound complexes' created 'chords without harmonic function', he maintained, structures that could act as a kind of 'sound amalgam linked to timbre, duration and dynamics' in a way that allowed each characteristic to 'vary with the different components of the amalgam'.<sup>58</sup> The notion of rhythmic structure apparent in Cage's music was 'dependent on real time, expressed through numerical relationships' and created musical gestures 'in which the personal element plays no part'.<sup>59</sup> At the basis of this model, Boulez stated in 1952, was a system in which 'a given number of units of measure [would] yield an equal number of units of development' -- an 'a priori numerical structure which John Cage calls "prismatic"; '[t]he tendency of these experiments by John Cage', he wrote, was 'too close to my own for me to fail to mention them'.<sup>60</sup>

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<sup>56</sup>Boulez, 'Possibly...', 133. The other exception is Messiaen.

<sup>57</sup>Boulez, 'Possibly...', 134-135.

<sup>58</sup>Boulez, 'Possibly...', 135.

<sup>59</sup>Boulez, 'Possibly...', 135.

<sup>60</sup>Boulez, 'Possibly...', 135. See also Boulez, 'Where are we now?', 447.

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It is true that Boulez's statements about the intimate connection of his post-war indeterminate aesthetic to Cage in these texts were made near -- in some cases as near as a number of weeks -- to the time he began to dissociate himself from Cage's chance procedures with the letter of December 1951.<sup>61</sup> Although that letter may have begun a process of separation, evidence exists in Boulez's essays and letters to suggest that it was not complete by the end of the 1950s. Rather, these texts show that Boulez did not really escape the ideas shared during his early association with Cage in this period, and that the essential similarity between the conceptual foundation of the serial and the non-serial indeterminate projects before 1952 confounded his attempts to delineate 'meaningful' from 'meaningless' chance in 'Alea' in 1957.

The connection between Boulez's articulation of an ideal indeterminate aesthetic in 'Alea', Cage's design for a meaningful musical system in 'Forerunners' and Boulez's account of Cage's early work in 'Possibly...' is striking. The comparison of these texts sheds light on the fragile platform from which Boulez argued for an independent indeterminate musical work in 'Alea' and offers insight into two key claims

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<sup>61</sup>See Pierre Boulez, Document 35, in Nattiez, *Correspondence*, 112-128. It is assumed that the text of 'Possibly...' was written some time before December 1951 in order to meet a publication date the following year. For an account of the documentary evidence behind Boulez's first split with Cage, see Nattiez, 'Introduction', *Correspondence*, 3-24, pp. 17-20.

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of 'Sonata, que me veux-tu?'. First, it shows that the structures proposed by Joyce and Mallarmé cannot have brought Boulez to the 'horizon of a totally unknown country' in 1960.<sup>62</sup> The ideal indeterminate aesthetic based on 'literary' models in 'Sonata, que me veux-tu?' simply reiterates his design for 'meaningful' chance in 'Alea', a text cast in a musical climate without reference to extra-musical parallels. Second, it makes it difficult to accept Boulez's claim that 'writers ... had gone much further than composers' in the 'mental structure' of their works by the end of the 1950s.<sup>63</sup> It is true that Boulez was himself unable to create a viable alternative approximation of these structures in 'Alea', 'Sonata, que me veux-tu?' or the Third Piano Sonata. His later account of an ideal 'literary' aesthetic is hard to distinguish from his early evaluations of the works and ideas of Cage, however, a fact that confirms the significance of Cage's influence on Boulez's early indeterminate project.<sup>64</sup>

Why write the Third Piano Sonata in 1957? It is possible to suggest that, in part, Boulez simply became more interested in pursuing possible connections between his work and the structures proposed by Joyce and Mallarmé.<sup>65</sup> The coincidence

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<sup>62</sup>Boulez, 'Sonata', 154.

<sup>63</sup>Boulez, 'Sonata', 143.

<sup>64</sup>For a discussion of Cage and the New York School, see David Nicholls, 'Getting Rid of the Glue: the Music of the New York School', *Journal of American Studies*, 27 (1993), 335-353.

<sup>65</sup>See Chapter One, page 55. For other early references to Mallarmé in Boulez's writings, see his 'Corruptions in the Censers', *Orientations*, 20-25; originally published in *La*

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of the 'unfinished' Third Piano Sonata, the difficulty in establishing a viable musical aesthetic of indeterminacy in 'Alea' and the revisionist model of musical meaning in 'Sonata, que me veux-tu?' supports an alternative reading, however. It provides evidence to suggest that, rather than exist simply as historical accounts, these works were in part directed acts of historical revision.

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*Nouvelle Revue française*, 48 (December, 1954), 1078-84; 'Incipit', *Orientations*, 215-216; originally published as 'Note to Tonight's Concert: Webern's Work Analyzed', in *New York Herald Tribune* (28 December, 1952), section 4, p. 4.

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## Chapter Three

### After the 'Unfinished' Third Piano Sonata

[In writing the Third Piano Sonata] my ideas gradually fell into place around the guiding conception of the work as a moving, expanding universe. For this reason the development of one formant led me to reconsider another and this in turn reacted on the formant following, and even indeed on that preceding! This explains how 'Strophe' and 'Séquence' came to be sacrificed almost completely and are being (or will have to be) completely reworked. You will now realise the wealth of possibilities in the interaction of these formants -- just imagine parenthesis-pages, mobile *cahiers*, constellations and formants! The imaginative possibilities are, in fact, endless, provided the craftsmanship is there.... Composition would be an infinitely tedious occupation if it were no more than a series of trips arranged by tourist agencies, with every stopover prearranged.

Boulez, 'Sonata, que me veux-tu?' (1960)<sup>1</sup>

#### I

In 1957, the experimental trends of the post-war period were beginning to undergo consolidation. Babbitt was working closely with pitch-class-based serialism in *Partitions* for piano, Stockhausen's studies of communication theory with

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<sup>1</sup>Pierre Boulez, 'Sonata, que me veux-tu?', in Pierre Boulez, *Orientations: Collected Writings*, ed. Jean-Jacques Nattiez, trans. Martin Cooper (London, 1985), 143-154, pp. 153-154. 'Sonata, que me veux-tu?' will subsequently be referred to as 'Sonata'.

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Meyer-Eppler at Bonn were being incorporated into his electronic compositions, and Cage was consolidating plans for a new indeterminate work, the *Concert for Piano and Orchestra*.<sup>2</sup> Against this background, Boulez's Third Piano Sonata proposed to integrate the potential of serialism, electronics and chance in a single composition. While the American serialists were experimenting with high-level pitch-class structures, Boulez based 'Trope' and 'Constellation (Constellation-Miroir)' on the potential of serial material to support open form.<sup>3</sup> While Schaeffer and Stockhausen were working with variable density and transposition by fields in electronic music, Boulez proposed similar procedures in the acoustic textures of

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<sup>2</sup>On Babbitt, see Milton Babbitt, *Words about Music*, ed. Stephen Dembski and Joseph N. Straus (Madison, 1987); Andrew Mead, *An Introduction to the Music of Milton Babbitt* (Princeton, 1994). See also Paul Griffiths, *Modern Music and After: Directions since 1945* (Oxford, 1995), 64; on Stockhausen, see Robin Maconie, *The Works of Karlheinz Stockhausen* (Oxford, 1990), 58.

<sup>3</sup>For discussion and analyses of the Third Piano Sonata, see Pierre Boulez and Célestin Deliège, *Conversations with Célestin Deliège* (London, 1976), 50-51, 81-82; Boulez, 'Sonata, que me veux-tu?'; Robert Black, 'Boulez's Third Piano Sonata: surface and sensibility', *Perspectives of New Music*, 20 (1981-82), 182-198; William G. Harbinson, 'Performer Indeterminacy and Boulez' Third Sonata', *Tempo*, 169 (June, 1989), 16-20; Dominique Jameux, *Pierre Boulez*, trans. Susan Bradshaw (London, 1991), 299-308; Paul Griffiths, *Boulez* (Oxford, 1978), 38-43; Joan Peyser, *Boulez: Composer, Conductor, Enigma* (London, 1977), 126-129; Peter Stacey, *Boulez and the Modern Concept* (Aldershot, 1987), 77-86; Manfred Stahnke, *Struktur und Aesthetik bei Boulez: Untersuchung zum Formanten 'Trope' der Dritten Klaviersonate* (Hamburg, 1979); Wilma Anne Trenkamp, 'The Concept of *Aléa* in Boulez's Constellation-Miroir', *Music and Letters*, 57.1 (1976), 1-10; and Mark Wait, 'Liszt, Scriabin and Boulez: Considerations of Form', *Journal of the American Liszt Society*, 1 (1977), 9-16, pp. 14-15.

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'Strophe' and 'Séquence'.<sup>4</sup> Five years after Cage and the New York School composers first attempted graphic-style global formal exchanges, Boulez designed 'Antiphonie' around a strictly graphic conception, maintaining that it followed from the structural implications of serial permutation.<sup>5</sup>

The unprecedented complexity of the idea of the Third Piano Sonata and its ambitious proposal of a unique synthesis of post-war trends has encouraged the belief that the piece is 'unfinished', a reading that suggests it was a viable project left incomplete merely for practical reasons. Boulez promoted this reading in 'Sonata, que me veux-tu?'. There, he explained that the structural variability he was trying to achieve in the formant 'Strophe' was simply 'incompatible with our existing system of notation'.<sup>6</sup> He had been forced to 'reconsider' and 'sacrifice' some of the formants as he worked to establish their role in the greater project; with others, he suggested, his difficulty had been in realising his conception.<sup>7</sup>

'Séquence', the least articulated of the formants, was especially challenging. As he wrote in 1960, it was to be the 'furthest removed from predetermined form' and embodied an idea

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<sup>4</sup>Discussion with Robert Sherlaw Johnson, who has spoken to Boulez about his statement about the necessity of 'radical innovations in the transcription of variable pitches, this variability being incompatible with our existing system of notation' in 'Séquence' in 'Sonata', 153.

<sup>5</sup>A fragment of 'Antiphonie' was published under the title *Sigle* in 1968 and was then withdrawn.

<sup>6</sup>Boulez, 'Sonata', 153.

<sup>7</sup>Boulez, 'Sonata', 154.

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that presented significant obstacles, 'problems', he called them, for which he had 'still found no practical solutions'.<sup>8</sup> Each of these difficulties, this reading would suggest, was part of the complexity of the project. At the same time, it was testimony to the brilliance -- as yet unattainable -- of Boulez's advanced post-war musical vision.

Scholars have suggested that, if Boulez had been able to complete the piece in 1957, it would have been a work of the dimensions and scope of *Répons*, the expansive open-form electro-acoustic project first realised in 1981.<sup>9</sup> In turn, the success of *Répons* has had a considerable impact on the reception of the Third Piano Sonata, the reading of Boulez's abandonment the work at the end of the 1950s and the relationship of the Sonata to his other compositions. Dominique Jameux, for example, has said that the writing of the Third Piano Sonata 'led to a period of crisis, defined by an awareness of the inevitable problems of the open form work', a stage of research that 'was eventually resolved some twenty-five years later with *Répons*'.<sup>10</sup> Jean-Jacques Nattiez, similarly, has said that *Répons* 'represents the true completion of earlier works unfinished (the Third [Piano] Sonata, *cummings ist der Dichter*, *Eclats/ Multiples*) or problematic

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<sup>8</sup>Boulez, 'Sonata', 153.

<sup>9</sup>*Répons* and the aesthetic and technical conditions of its realisation are discussed in Chapter Four.

<sup>10</sup>Jameux, *Boulez*, 98.

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( '...explosante-fixe...' , *Poésie pour pouvoir* )'.<sup>11</sup> Elsewhere, Nattiez has gone so far as to say that *Répons* looks back to the pieces that are at the very root of Boulez's entire post-war project -- that the composition was Boulez's 'response' to the challenges posed by Cage's works for prepared piano.<sup>12</sup>

Boulez has condoned this relatively sweeping reading of the Third Piano Sonata, *Répons* and the importance of these works to his wider compositional agenda. He has called his compositions 'different facets of one central work, of one central concept', and has said that Joyce's idea of a 'work in progress' has united his work since the early 1960s.<sup>13</sup> The assessment of *Répons* as a piece that consummated Boulez's earlier open-form experiments would seem to justify this reading, while placing the Third Piano Sonata in an especially strategic position. It isolates the Sonata as an important step in a much greater process and justifies Boulez's decision to abandon the project by authenticating the insurmountable obstacle of a lack of technical means.

This reading has three implications that are important to the status of the Third Piano Sonata. First, it suggests that

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<sup>11</sup>Jean-Jacques Nattiez, 'On Reading Boulez', *Orientations*, 11-28, p. 22.

<sup>12</sup>Jean-Jacques Nattiez, 'Boulez à l'âge Postmoderne: le temps de *Répons*' in *Le Combat de Chronos et d'Orphée*, ed. Jean-Jacques Nattiez (Paris, 1993), 159-217, p. 185.

<sup>13</sup>Boulez and Deliège, *Conversations*, 50; see also Boulez, Document 6, in Jean-Jacques Nattiez, ed., *The Boulez-Cage Correspondence*, with Françoise Davoine, Hans Oesch and Robert Piencikowski, trans. Robert Samuels (Cambridge, 1993), 43-46, p. 46.

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electronic technology -- a means of realisation extrinsic to the conception of the Sonata -- was essential to its eventual realisation. Second, it implies that the imaginative possibilities offered by electronic technology were integral to Boulez's desire to write the Sonata in 1957, despite the fact that he cast the piece within the confines of an acoustic piano sonata. Finally, it brings together the two themes investigated separately in Chapters One and Two: developments in electronic technology and Boulez's ideal indeterminate work concept. It suggests that the combination of these factors was essential to creating unity in the post-war period, and confirms that, despite his inability to achieve it at the end of the 1950s, Boulez did have an independent indeterminate musical vision.

To a certain extent, this reading of the Third Piano Sonata and its place in Boulez's wider compositional output is reasonable. We have come to understand that Boulez's interest in proliferative development, the 'guiding conception of the work as a moving, expanding universe', is a common thread tying his works together across the decades, uniting them under the auspices of an advanced serial ideal.<sup>14</sup> The conviction that a single trajectory underlies Boulez's indeterminate work concept is more contentious, however, as is the assumption that that concept is part of an independent, in part electro-acoustically inspired, indeterminate serial vision. These assessments rely on a favourable reading of the 'unfinished' status of the Third

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<sup>14</sup>Boulez, 'Sonata', 153.

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Piano Sonata and on a set of assumptions -- none investigated -  
- about its role in shaping Boulez's compositions between the  
end of the 1950s and the period before the composition of  
*Répons*. Boulez's conviction in 'Sonata, que me veux-tu?' that  
the 'imaginative possibilities' of the Third Piano Sonata were  
'endless. provided the craftsmanship [was] there', for example,  
trades on this reading of the work, as do the assessments of  
both Jameux and Nattiez.<sup>15</sup>

The 'unfinished' status of the Third Piano Sonata  
inspires two threads of speculation: first, whether Boulez's  
conception of the work was beyond the scope of technical  
possibility at the end of the 1950s or whether the idea was  
simply untenable; and second, whether his inability to complete  
the project has any lasting, over-riding compositional  
implications. This chapter evaluates the resilience of  
Boulez's independent indeterminate work concept at the end of  
the 1950s through a study of the role of electro-acoustic  
procedures in shaping the aesthetic of the Third Piano Sonata  
and in influencing the design of key subsequent compositions.

## II

### *The Idea of an electro-acoustic synthesis in the 1950s: Background from Boulez writings*

The belief that the Third Piano Sonata is unfinished relies on  
a fragile association of a number of factors stemming from

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<sup>15</sup>Boulez, 'Sonata', 154.

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different parts of Boulez's post-war project. The claim that his interest in electro-acoustic music was relevant to the conception of the Sonata, for example, is crucial in establishing the viability of the project and its proposition against the climate of the late 1950s. In Chapter One, we noted that the Sonata and the text 'Sonata, que me veux-tu?' were roughly contemporary with *Poésie pour pouvoir*, the failed 1958 electro-acoustic composition that prompted Boulez to abandon his electronic experiments 'until better methods [were] discovered'.<sup>16</sup> There, we suggested that Boulez's dissatisfaction with electronic technology was part of a wider problem of isolating a viable means with which to realise his ideal indeterminate aesthetic at the end of the 1950s.<sup>17</sup> The question of electro-acoustic -- as opposed to electronic -- composition develops gradually and consistently in Boulez's writings in the 1950s. Before investigating the issue and its implications for his works after the Third Piano Sonata, it is worth establishing how Boulez addressed the subject of electro-acoustic composition in his writings across the early post-war

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<sup>16</sup>Pierre Boulez and Dominique Jameux, 'An Interview with Dominique Jameux', *Orientations*, 199-202, p. 202.

<sup>17</sup>Connections drawn between *Poésie* and other works, like the path of development traced from the Sonata to *Répons* by Jameux and Nattiez, further encourage this theory. Josef Häusler, for example, has noted that the similarities between the electro-acoustic design and spatial performance distribution of *Répons* and *Poésie* are striking, although Boulez has himself denied that there is a direct connection between these pieces. Pierre Boulez and Josef Häusler, 'Pierre Boulez: Über *Répons* -- ein Interview mit Josef Häusler', Teilton 4, *Schriftenreihe der Heinrich-Strobel-Stiftung des Südwestfunks* (Kassel, 1985), 7-14.

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period and evaluating the relevance of his assessment to the design of the Third Piano Sonata.

### *II.1. Writings 1952-57*

Boulez began to distinguish between electronic and electro-acoustic procedure in the 1954 text '*...Near and Far*'. There, he called for a re-evaluation of the musical work 'from the morphology of language right up to the conception of the work itself', a process that would involve the co-ordination of each of the 'components of language, that is all the components of sound'.<sup>18</sup> The 'modern work', he stated, should be based on a 'working potential which, by virtue of certain characteristics, generates a specific world of which the schema is one manifestation'.<sup>19</sup> The 'new organisation of sound' required to create such a work, he suggested, would require a 'fresh approach' to the concept of form and performance and should reject any delusions about a 'natural order' of sound. Instead, the key to the sound world necessary to create the 'modern work', he asserted, was to be found in the 'problems posed by electro-acoustics and electronic techniques', in the promise of experiments that were currently under way into the interface between electronic and acoustic sound.<sup>20</sup>

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<sup>18</sup>Pierre Boulez, '*...Near and Far*', in Pierre Boulez, *Stocktakings from an Apprenticeship*, collected and presented by Paule Thévenin, trans. Stephen Walsh (Oxford, 1991), 141-157, p. 141.

<sup>19</sup>Boulez, '*...Near and Far*', 142.

<sup>20</sup>Boulez, '*...Near and Far*', 141-142, 143.

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The most striking aspect of Boulez's first discussion of electro-acoustic procedure is its connection to two important issues: a process of experimentation rather than completed compositions in an electronic or electro-acoustic medium; and the idea of an evolving musical work. The belief that the 'modern work' would feature a 'schema' effecting numerous possible presentations of its idea in performance is familiar from our study of Boulez's prototype for a serially generated open-form work. At this stage, Boulez had yet to abandon his electronic project, but it had entered a theoretical stage after the disappointment of the two electronic *Etudes* and *Structures Ia*. In this same year, as we saw in Chapter One, 'Current Investigations' foreshadowed the design of the Third Piano Sonata and Boulez wrote to Cage about his interest in Stockhausen's work with the 'life of sounds'.<sup>21</sup> Boulez's call for a 'fresh approach' to the concept of form and performance outlines his desire to find practical solutions to the problem of realising an indeterminate musical work. At the same time, it highlights a pattern in Boulez's writings -- his championing of a new and untested compositional method after the failure of earlier, promising experiments.

The fact that the results of these experiments were unknown at the time the issue of electro-acoustic procedures entered Boulez's texts is significant for the way the idea was assimilated. It is clear from the text of '...Near and Far'

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<sup>21</sup>Pierre Boulez, 'Current Investigations', *Stocktakings*, 15-19, p. 17; Pierre Boulez, Document 45 in Nattiez, *Correspondence*, 146-150, pp. 149-150.

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that the composer was aware of this problem. As he wrote: 'we have not yet achieved an unassailable coherence, an irrefutable proof. Too many points remain obscure, too many desires unfulfilled, too many needs unformulated.'<sup>22</sup> Boulez's next text, the 1955 essay '"At the Edge of a Fertile Land" (Paul Klee)', took up the threads of '...Near and Far'. It, too, remained inconclusive on the practical effect of electronic experiments, however, despite its attempt to outline an exhaustive technological catalogue of the characteristics of electronic and acoustic sound.

Boulez began '"At the Edge of a Fertile Land"' by defining his terms. Acoustic music (what he called the 'natural sounding body') produced sounds that were characterised by timbre, register, dynamics and duration and were subject to the 'certain "inertia"' of a performer's physical limitations.<sup>23</sup> In electronic music, by contrast, composers had to 'create the various characteristics of the sound [themselves]'; within a situation of a 'non-limitation of possibilities', they must 'extract a work that is coherent not only in internal structure, but also in the actual composition of its sound material'.<sup>24</sup> The majority of '"At the Edge of a Fertile Land"' is concerned with codifying the differences (and in some rare cases the similarities) between electronic and

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<sup>22</sup>Boulez, '...Near and Far', 143.

<sup>23</sup>Pierre Boulez, '"At the Edge of a Fertile Land" (Paul Klee)', *Stocktakings*, 158-172, p. 158. First published as '"An der Grenze des Fruchtländes"', *Die Reihe*, 1 (1955), 19-29.

<sup>24</sup>Boulez, '"At the Edge of a Fertile Land"', 159.

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acoustic music, beginning with a discussion of each of the four characteristics of sound.<sup>25</sup> Boulez's account is notable, however, for the incongruence between its general sense of confidence and its inability to establish a sense of authority on these issues owing to a lack of reference to any method of practical means.

Boulez's main proposition in the text was that electronic and acoustic structures based on pitch could be unified through the dichotomous structural relationship between 'microcosm/macrocosm' or 'temperament/ non-temperament'. In particular, he suggested that electronics could be used to 'guarantee' the continuity of sounds generated acoustically by effecting the 'transformation' of basic material controlled by a series.<sup>26</sup> In his discussion of tempo, he differentiated clearly between the 'discontinuous', or unvarying, tempo of electronic music and the 'continuous', or 'psychological' tempo of acoustic music and suggested that the two could be brought together by a 'similar organisation of time-registration, whether revealed directly in the rhythmic unit or at a higher level in the actual "tempo"'.<sup>27</sup> Timbre, the dimension of sound that unites pitch, tempo and dynamics, contains the 'greatest divergences ... the fundamental antinomy' between acoustic and electronic

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<sup>25</sup>Boulez states that the two types of sound share 'a certain definition of duration' and that both instrumental and electronic dynamics exist on a similar kind of continuum (Boulez, '"At the Edge of a Fertile Land"', 166, 168).

<sup>26</sup>Boulez, '"At the Edge of a Fertile Land"', 163-164.

<sup>27</sup>Boulez, '"At the Edge of a Fertile Land"', 166-167.

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sound.<sup>28</sup> Boulez suggested he could overcome the difficulty in creating timbre in electronic music by focusing instead on the construction of what he called 'sound-objects' -- complexes of musical material that could be subjected 'on a higher level to transformations parallel to the ones which went to make them' and that could undergo ramified development through a series of transformations based on an extended serial ideal.<sup>29</sup>

From the vantage point of the end of the twentieth century, and in particular after the composition of *Répons* in 1981, each of these ideas is compelling, and seems a fair solution to a difficult problem -- one that looks to the musical future while still drawing on the serial design of *Le Marteau sans maître*, the piece Boulez was working on at the time. From the perspective of 1955, however, the idea in "'At the Edge of a Fertile Land'" was, to use the words that followed Boulez's discussion of pitch, simply 'a working project or hypothesis' worth considering 'even if the utopias [they] can hardly fail to conjure up are eventually refuted by experiments as yet unmade'.<sup>30</sup> Each of Boulez's attempts to outline a means for unifying electronic and acoustic music was followed by a disclaimer in the text: after his discussion of tempo, he wrote 'I may perhaps be thought unduly obsessed' with the idea of bringing the two sound worlds together; and after his exposition on the 'sound-object', he reiterated that the

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<sup>28</sup>Boulez, "'At the Edge of a Fertile Land'", 169.

<sup>29</sup>Boulez, "'At the Edge of a Fertile Land'", 170-171.

<sup>30</sup>Boulez, "'At the Edge of a Fertile Land'", 164.

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concept was 'essentially a question of working hypotheses, albeit based on experiments which, by their success or failure, will have helped us to formulate them'.<sup>31</sup>

These comments clarify that Boulez was working from theory rather than proof in 1955, although that fact alone does not detract from these potentially interesting solutions to the very real problem of establishing an interface between electronic and acoustic sound. Boulez was sufficiently committed to explorations into new developments in electronic technology by this time to have detached himself from Schaeffer and to have begun to cultivate his connection with Stockhausen in Cologne.<sup>32</sup> His tendency, established first in '...Near and Far', to overemphasise the potential of these theories to produce practical results in this second text is problematic, but it is also tempered somewhat by the text's occasionally apologetic tone. Furthermore, these factors would have made 'At the Edge of a Fertile Land' an exciting but realistic account from Boulez of his work in analysing and isolating the potential of electronic procedures when the issue dominated the culture of the avant-garde. Striking a balance in the text would also have been important to Boulez, however: it had been requested for the 1955 *Die Reihe* volume on electronic music by Stockhausen, who was editing the volume as part of his work at

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<sup>31</sup>Boulez, 'At the Edge of a Fertile Land', 167, 171.

<sup>32</sup>See Boulez, Document 45, 149-150.

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Cologne.<sup>33</sup>

## *II.2. Indeterminacy; Writings in 1957*

If the lack of conviction in '"At the Edge of a Fertile Land"' was in part a possible nod of respect to Stockhausen, it was also a component of a wider understanding of an eventual compromise between acoustic and electronic procedure, rather than a new dominance by the developing medium. Alongside the disclaimer about tempo in '"At the Edge of a Fertile Land"', Boulez wrote that 'it hardly seems reasonable to think of the one world supplanting the other, and the idea of a simple "progression" from one to the other strikes me as futile and unproductive'.<sup>34</sup> Later in the text he added: 'I thus refuse to believe in the idea of "progress" from instrumental to electronic music; there is only a shift in the field of action'.<sup>35</sup> Against this background, the 'mission statement' of '"At the Edge of a Fertile Land"' -- to 'bring...the two sound universes face to face within multi-dimensional constructions' -- seems a viable, if not inspired, solution to

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<sup>33</sup>Boulez's article was published in the *Die Reihe* collection with several other studies on electronics: Herbert Eimert, 'What is Electronic Music?', 1-10; H.H. Stuckenschmidt, 'The Third Stage', 11-13; Ernst Krenek, 'A Glance over the Shoulders of the Young', 14-16; Giselher Klebe, 'First Practical Work', 17-18; Henri Pousseur, 'Formal Elements in a New Compositional Material', 30-34; Karel Goeyvaerts, 'The Sound Material of Electronic Music', 35-37; Paul Gredinger, 'Serial Technique', 38-44; Karlheinz Stockhausen, 'Actuality', 45-51; Gottfried Michael Koenig, 'Studio Technique', 52-54; Werner Meyer-Eppler, 'Statistic and Psychological Problems of Sound', 55-61.

<sup>34</sup>Boulez, '"At the Edge of a Fertile Land"', 167.

<sup>35</sup>Boulez, '"At the Edge of a Fertile Land"', 172.

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the problem of an electro-acoustic synthesis. At the same time, it articulates the possibility of integrating this idea with his other public propositions, such as his statement, emphasised in his 1957 essays 'Tendencies in Recent Music' and 'Alea', that indeterminacy is an inherent and important characteristic of serially derived sound.<sup>36</sup>

In '...Near and Far', Boulez preserved the idea of an 'evolving' musical work whose 'working potential' could generate a 'specific world of which the schema is one manifestation'.<sup>37</sup> In '"At the Edge of a Fertile Land"', no mention was made of this idea, despite the fact that the publication of the text was roughly equidistant between the introduction of the concept of 'formants' in 'Current Investigations' and the time when Boulez must have been beginning work on 'Trope' and 'Constellation-Miroir'. In 'Tendencies in Recent Music', however, the idea of the 'transformation of sound-objects' from '"At the Edge of a Fertile Land"' leads to a more general discussion of expanded serialism, which itself turns to the issue of indeterminacy. Most importantly, 'Tendencies' defines what Boulez called the 'far end of the serial perspective' -- the end that proposes 'a universe peculiar to each work' -- and outlines how it could be applied to the characteristics at the structural centre of

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<sup>36</sup>Boulez, '"At the Edge of a Fertile Land"', 160.

<sup>37</sup>Boulez, '...Near and Far', 142.

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sound.<sup>38</sup>

In 'Tendencies', Boulez proposed applying the notion of the series to the design of musical development, a situation whereby the structural differences between sound-objects could be used organisationally across the dimension of time. He also outlined a situation in which all possible modifications of his basic musical material could be organised by this principle, establishing a new method of development that would, he suggested, create 'a category of works free at last from all constraint outside what is specific to themselves'.<sup>39</sup> This image recalls the idea of an open work based on expanded serialism that Boulez outlined in '...Near and Far'. It is especially significant for offering a practical means with which to apply that idea, and for the connection of the procedure to an idea introduced first in '"At the Edge of a Fertile Land"'.

His second 1957 text, 'Alea', takes up this theme. There, the problem of positing a viable electro-acoustic musical work features as part of the discussion of indeterminacy and the essentiality of the presence of a compositional system reducible to the directive of a composer's will.<sup>40</sup> Boulez's discussion of 'definite and indefinite',

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<sup>38</sup>Boulez, 'Tendencies in Recent Music', *Stocktakings*, 173-179, p. 179. This article will subsequently be referred to as 'Tendencies'.

<sup>39</sup>Boulez, 'Tendencies', 179.

<sup>40</sup>Boulez, 'Alea', *Stocktakings*, 26-38, p. 33. For a discussion of this subject, see Alastair Williams, *New Music and the Claims of Modernity* (Aldershot, 1999), 71-72. 'Alea' is

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'amorphous and directional' and 'divergent and convergent' structural pairs in 'Alea' marked his first attempt to expand on the question of methodology and to suggest how electronic and acoustic music could be brought together in indeterminate structures.<sup>41</sup> He wrote in 'Alea' that the 'requirements' of these structures would 'come out' on the surface of the music first through a method of composition that would use timbre, tempo and style (the three elements typical of a homogeneous sound space) to effect a kind of development that would feature fixed and variable, as well as 'criss-crossing' structures that could be readily assimilated by the listener.<sup>42</sup> In order to achieve 'total variability and relativity of structure', however, Boulez stated that the composer must apply them on a second level, that he 'must use a non-homogeneous sound space particularly as regards tempi and intervals'.<sup>43</sup> By applying the same kind of structural patterning characteristic of writing in homogeneous sound space to non-homogeneous sound space, he suggested, music could incorporate the 'functional' rather than simply 'decorative' potential of these elements, a development that would increase their compositional power.<sup>44</sup>

At the time, Boulez stated that this method incorporated the principal concern of contemporary music -- a 'dependence on

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discussed in detail in Chapter Two.

<sup>41</sup>Boulez, 'Alea', 33.

<sup>42</sup>Boulez, 'Alea', 34.

<sup>43</sup>Boulez, 'Alea', 35.

<sup>44</sup>Boulez, 'Alea', 35.

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concepts that are inherently variable, and obey evolving hierarchies' -- but that it did so by incorporating contemporary musical advances.<sup>45</sup> In particular, rather than using structures based directly on the series, it was based on what he called general variable structures that could be applied across both homogeneous and non-homogeneous sound.<sup>46</sup> This development was said to make possible a method of composition that used a 'series of sound blocks' and a 'series of durations of rhythmic blocks' as both structural and articulative devices. As Boulez wrote, 'electro-acoustical techniques, as well as various instrumental devices', allowed the composer to break up the homogeneity of sound space.<sup>47</sup> It produced musical works where the ideal of 'two dialectically opposed families' of elements could be unified through the functional application of electro-acoustical transformation to the variability inherent in basic serially organised sound.<sup>48</sup>

This was a powerful image, and one that would have seemed persuasive as part of Boulez's central purpose in writing the essay: to distance his use of indeterminacy from the 'random' procedures of Cage. Like the difficulties involved in differentiating 'meaningful' and 'meaningless' chance discussed

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<sup>45</sup>Boulez, 'Alea', 35. This point is significant in light of Boulez's later claim that the aesthetic of the Third Piano Sonata was inspired by 'literary' models, the subject of Chapter Two.

<sup>46</sup>Boulez, 'Alea', 34.

<sup>47</sup>Boulez, 'Alea', 35.

<sup>48</sup>Boulez, 'Alea', 34.

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in Chapter Two, however, 'Alea' also contained inconsistencies with respect to this question, problems that link it with '"At the Edge of a Fertile Land"' and 'Tendencies', and Boulez's eventual abandonment of the Third Piano Sonata and *Poésie*.

The most obvious of these inconsistencies is the most familiar: that Boulez followed statements about the potential of electro-acoustic music with disclaimers that exonerated him from providing practical proof. The inclination to write this way, which as we have seen peaked in '"At the Edge of a Fertile Land"', enters 'Alea' at a few crucial junctures. The most significant of these follows Boulez's statement that it was 'thanks to electro-acoustic techniques' that composers could break up the homogeneity of sound space and effect constructions of the sort featured in his ideal composition. 'The aim here is not to show how we get these non-homogeneous spaces', he continued; rather, it was 'simply to note the possibility so as to make clear what bearing it can have on the concept of structure; it imposes a new kind of "chance" on the very principle of structure' -- one, he suggested, that is 'certainly of the most disruptive kind'.<sup>49</sup> The fact that Boulez did not attempt to describe a practical realisation of this model was not simply because it would have fallen outside the scope of his essay on chance procedure in 1957. Rather, as he conceded later in the text, quoting Mallarmé's poem 'Un Coup de dés jamais n'abolira le hasard', it was owing to a lack of alternatives: '"Towards this supreme conjunction with

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<sup>49</sup>Boulez, 'Alea', 35-36.

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probability"', he wrote, 'one certainly cannot go with absolute self-confidence'.<sup>50</sup>

Despite the strength of the model outlined in 'Alea', it would seem, Boulez's ideal of an electro-acoustically derived indeterminate musical work was fragile in 1957. As we saw in Chapter Two, Boulez's reasons for writing the text were complicated and the essay is as much a chronicle of a composer struggling to codify a new level of achievement as it is a startling condemnation of rival chance procedures. Chapter One showed that electronic music, although inspirational, posed serious practical problems for Boulez, and that his pursuit of an electronic route out of his difficulties with serialism mid-decade was hindered by his investment in an idea of musical meaning that required an unattainable flexibility. This section has approached this dilemma from the opposite direction. It has isolated Boulez's discussions of the possibility of combining electronic procedures with acoustic structures, and has shown that, at the time when he conceived the Third Piano Sonata, his rhetoric of confidence in this vision was at odds with his inability to act in the media.

### III

#### *III.1 General Aesthetic c. 1960*

The tension between Boulez's ideal indeterminate aesthetic and the question of electro-acoustic media continued after he

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<sup>50</sup>Boulez, 'Alea', 37.

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abandoned the Third Piano Sonata and *Poésie*. Boulez's discussions of conceptual indeterminate structures in the period leading from 'Sonata, que me veux-tu?' to the re-introduction of electronic procedures in '*...explosante-fixe...*' in 1972, in particular, chart the interesting evolution these issues were to undergo. Before discussing those texts, however, it is worth outlining Boulez's early articulation of the structural means by which he predicted his ideas would be employed. In the essay '*Pli selon pli*', a key text from the period, Boulez wrote that Mallarmé, whose poem he used in the piece, was 'obsessed with the idea of formal purity'; in his poetry, Boulez suggested, he 'entirely rethinks French syntax in order to make it, quite literally, an "original" instrument'.<sup>51</sup> The procedure in Mallarmé's poetry that most impressed Boulez was the exploitation of the 'contrast between direct and indirect comprehension'.<sup>52</sup> In this method, the poet achieved a 'fusion of sound and meaning in a language of extreme concentration', a technique that exhibited the 'perfect adaptation of language to thought without any loss of energy'.<sup>53</sup>

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<sup>51</sup>Pierre Boulez, '*Pli selon pli*', sleeve note to the recording of the same name by Boulez, CBS 75 770. Quoted here and subsequently from Pierre Boulez, '*Pli selon pli*', *Orientations*, 174-176, p. 175.

<sup>52</sup>Boulez, '*Pli selon pli*', 175.

<sup>53</sup>Boulez, '*Pli selon pli*', 175. Boulez's comment is reminiscent of Cage's 1937 statement that forms in the music of the future will be 'related ... as they are to each other: through the principle of organisation of man's common ability to think'. John Cage, 'The Future of Music: Credo', *Silence*, 3-6, p. 6.

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Boulez's interest in what we shall call a 'linguistic' model of musical structure is familiar from our discussions in Chapters One and Two. Although he was quick to concede that music lacked an intrinsic meaning-embodying system like the syntax of language, Boulez asserted that it was essential for composers to restore the 'parity between the formal powers of music and its morphology and syntax' by adopting pseudo-linguistic structural models in 'Sonata, que me veux-tu?'.<sup>54</sup> In particular, he maintained, composers could harness the characteristic that distinguished musical material from the 'significant', 'directional' elements of a linguistic system -- its 'non-significance' and 'non-direction'.<sup>55</sup> They could achieve this by devising musical systems that worked like 'structured organisms, in accordance with formal principles much less restricted than those that obtain in the case of words'.<sup>56</sup>

The construction of these 'structured organisms' by 'less restricted formal principles' took a specific form at the end of the 1950s. In 'Sonata, que me veux-tu?', Boulez explained that the contrast of 'formants' and 'développants' in the Third

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<sup>54</sup>Boulez, 'Sonata', 144. For a fuller discussion of this idea in Boulez's work, see Pierre Boulez, 'Poetry -- Centre and Absence -- Music', *Orientations*, 183-198; see especially pp. 188-189. The text was originally given as a lecture at Donaueschingen in 1962. First published as 'Poésie -- centre et absence -- musique', *Melos*, 30.2 (February, 1963), 33-40.

<sup>55</sup>Boulez, 'Sonata', 144.

<sup>56</sup>Boulez, 'Sonata', 148.

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Piano Sonata created what he called 'syntactic' structures.<sup>57</sup> These structures preserved Mallarmé's idea of the formal potential of the 'thickness' of a book -- the situation in a literary work whereby the 'superimposing of lines or pages' could create meaning through cumulative references across time.<sup>58</sup> In the Sonata, this idea was incorporated by establishing what Boulez called a 'definite relationship' between a given formant and its various possible applications.<sup>59</sup> In part, as we saw in Section I, the relationship between these structures was to unfold over time as the piece progressed, creating a composition like a 'moving, expanding universe'.<sup>60</sup> In 'Trope' and 'Constellation-Miroir', however, the methodology employed to create these structures was specific: unity was created by preserving a common basic structural source in shared serial material.

### *III.2 Structure and form in compositions after 1960*

The compositions that occupied Boulez after 1960 can be divided into two general categories: pieces expanding the notion of the 'open form work' from the Third Piano Sonata in the 1960s; and those that have been called 'works in progress', unfinished or 'developing' projects leading from the beginning of the 1970s

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<sup>57</sup>Boulez, 'Sonata', 148.

<sup>58</sup>Boulez, 'Sonata', 152.

<sup>59</sup>Boulez, 'Sonata', 152. The procedure is particularly apparent in 'Strophe', although it also applies to the entire construction.

<sup>60</sup>Boulez, 'Sonata', 153. See page 108, above.

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to the composition of *Répons* in 1981.<sup>61</sup> Distinguishing these categories can be difficult, but Boulez's accounts show the following division: 'open-form works' include *Pli selon pli* (1957-1962/67), *Structures II* (1956-61), *Doubles* (1957-58), later *Figures*, *Doubles*, *Prismes* (1963, 1968) and *Domaines* (1961-68); and 'works in progress' include *Éclat/Éclat/Multiples* (1965, 1965-), *Livre pour cordes* (1968-), *cummings ist der Dichter* (1970), '*...explosante-fixe...*' (1971, 1972-). A detailed study of the relationship between musical structure and open form in these compositions falls outside the scope of this study. However, a number of observations about general trends in structure and mobility in this period can be made that are important to the investigation of the connection between electro-acoustic procedures and indeterminacy in Boulez's writings and the 'unfinished' status of the Third Piano Sonata.

### *III.2.1 Open-form Works (i) Pli selon pli*

Serially based mobile and variable structures were designed to effect a kind of general structural 'anonymity' at the end of the 1950s, while still maintaining strict ties to the basic root of the proliferative system.<sup>62</sup> Boulez appeared near to

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<sup>61</sup>For Boulez's introduction to the term 'work in progress', see Boulez, 'Sonata, que me veux-tu?', 148; for Boulez's statement that the second *Improvisation sur Mallarmé* (1958) was his first exercise in form that could be modified 'from one moment to the next', see Pierre Boulez, 'Constructing an Improvisation', *Orientations*, 155-173, p. 156.

<sup>62</sup>Boulez, 'Sonata', 154.

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inventing the impossible with these open-form compositions: a flexible indeterminate acoustic composition created by a method strongly reminiscent of his earlier articulations of ideal electro-acoustic musical structures.

This basic design was preserved and developed in Boulez's works from the end of the 1950s. In *Pli selon pli*, Boulez achieved an effect similar to that implied by the Third Piano Sonata, but did so by overtly exploiting the potential for generality in its meaning-embodying structural system.<sup>63</sup> In his investigation of the 'relationship between poem and music on a higher ... semantic plane' in *Pli selon pli*, Boulez derived a means of exploring how the 'presence' and 'absence' of the principal source governing meaning -- in this case the relationship between a poetic text and what Boulez established as corresponding musical elements in the cycle -- could drive an expressive network with or without direct reference to the root of its semantic system.<sup>64</sup>

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<sup>63</sup>Jameux (*Boulez*, 108) records the 'five stages of composition' of *Pli selon pli* as: (I) (1957) *Deux Improvisations sur Mallarmé* ('Le Vierge, le vivace, et le belle aujourd'hui'; 'Une Dentelle s'abolit'); (II) (1959) *Improvisation III* ('À La Nue accablante tu'); (III) (1959-61) 'Tombeau'; (IV) (1960) 'Don'; (V) (1960-) Modifications: 'Don', 'Le Vierge' rewritten for larger forces to balance 'Tombeau'. See also Peyser, *Boulez: Composer, Conductor, Enigma*, 143.

<sup>64</sup>Pierre Boulez, 'Constructing an Improvisation', *Orientations*, 155-173, p. 170. 'Construire une improvisation' was given as a lecture at Strasburg in 1961. First published as 'How the avant-garde works today', *Melos*, 28/10 (October, 1961), 301-308; For the relation of 'absence' to Mallarmé, see Peyser, *Boulez: Composer, Conductor, Enigma*, 141-144. For *Pli selon pli*, see Jameux, *Boulez*, 107-111, 312-333; Paul Griffiths, *Pierre Boulez*, Oxford Studies of Composers No. 16 (Oxford, 1978), 45-48; Peter Stacey, *Boulez and the Modern Concept*, 85;

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Boulez constructed the piece around the idea of a 'shifting degree of immediate comprehension' that will 'never be left to chance but will tend to alternate between allowing musical or verbal text to dominate'.<sup>65</sup> The structure of the cycle assumes that the listener is aware of the 'direct meaning' of the poem outside the musical context and has 'assimilated the data' on which the composer has built the work.<sup>66</sup> Additionally, Boulez set up a 'semantic' system relating music to text in the outer movements in the work, where fragments of the poems and musical gestures would become associated in simultaneous structures. On the basis of these constructions, the work would then sustain the association between musical and textual meaning in untexted sections. Musical gestures came to imply absent textual references in local structures by virtue of their relationship to them elsewhere in the work.

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Paul Griffiths, 'Pli selon pli selon pli', *Musical Times* (Dec, 1983), 747; Iwanka Stoianowa, 'Pli selon pli: portrait de Mallarmé', *Musique en jeu*, 11 (January, 1973), 75-98. The idea of 'presence' and 'absence' is closely related to Adorno's discussion of 'subject-object', the intimate partnership between the universal and the particular and the implications of transcendental subjectivity. Adorno writes: 'The concept of transcendental subjectivity reminds us that thinking, by dint of its immanent moments of universality, transcends its own inalienable individuation. The antithesis of universal and particular, too, is both necessary and deceptive. Neither one exists without the other -- the particular only as defined and thus universal; the universal only as the definition of something particular, and thus itself particular. Both of them are and are not.' Theodor W. Adorno, 'Subject-Object', in Andrew Arato and Eike Gebhardt, *The Essential Frankfurt School Reader* (New York, 1978), 510.

<sup>65</sup>Boulez, 'Pli selon pli', 175.

<sup>66</sup>Boulez, 'Pli selon pli', 175.

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Despite music's lack of an intrinsic semantic system, the design of *Pli selon pli* traded on the ability of a musical network to carry meaning by 'allying itself to modes of expression ... or by appropriating them to itself', a quality Boulez exploited to support both 'absent' and 'present' textual and structural references.<sup>67</sup> In *Pli selon pli*, Boulez created an extended interplay between strict and free sections articulated either through the duality of the composer/performer vs. the performer/performer dialectic or through manipulation of surface characteristics effected by an alternation between determinate and indeterminate sound complexes. His preference for word fragments and vocalises rather than declamatory text in the work blurred structural associations based on textual references, a procedure extending to purely musical structures to the same effect. Similarly, the system that linked text and music used indeterminate sound complexes to make 'present' otherwise 'absent' notes. By providing extended harmonic frequencies with 'semantic' relevance, for example, these complexes created a referential network without relying on direct contextual association. This procedure had the important effect of emancipating the listener, whose role was typically focused on assimilating structures through active recognition of the relationship between generative structural gestures and related outposts of

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<sup>67</sup>Boulez, 'Poetry -- Centre and Absence -- Music', 188.

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articulated musical text (Example One).<sup>68</sup>

In *Pli selon pli*, Boulez expanded the idea that the presence of basic structures in one part of a composition could support diverse material elsewhere, a procedure linked to the serial foundation of mobile elements in the formants of the Third Piano Sonata. More importantly, however, despite the association of musical meaning in *Pli selon pli* with textual references, Boulez's design suggested that, within the confines of an integrated system, these structures could support development in an extended construction in the absence of direct reference either to the musical structures or to the meaning (in this case from the text) that was meant to be conveyed as the greater purpose of the structure. This idea, which relates Boulez's experiments interestingly with post-serial musical form to the philosophies of Adorno, was to have considerable effect on Boulez's subsequent open-form works.<sup>69</sup> In particular, it raised the issue of the significance of observable structures to the idea of 'development' and the concept of the work, and proposed a new way in which musical gestures could exhibit 'thematic' status in the absence of

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<sup>68</sup>Boulez, 'Constructing an Improvisation', 164. For discussions of the symbolism of the determinate nature of the last movement, 'Tombeau', see Boulez, '*Pli selon pli*', 174-176 and 'Poetry -- Centre and Absence -- Music', 183; Griffiths, *Boulez*, 45; and Jameux, *Boulez*, 109-110. For an explanation of open form in the piece, see Boulez, 'Constructing an Improvisation', 155-156.

<sup>69</sup>An Adornian analysis of the musical structure of these works falls outside the scope of this study. For work in this area, see Williams, *New Music and the Claims of Modernity*, especially pp. 71-72. See also note 64, above.

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Example One: *Pli selon pli*

bar 55: A sound complex in which it is 'virtually impossible to determine which instrument is playing which note' (Boulez, 'Sonata', 162).

Musical score for bar 55, showing three staves: Cloches, Vib., and Piano. The Cloches staff has a treble clef and a key signature of one sharp (F#), with notes G4, A4, and B4. The Vib. staff has a treble clef and a key signature of one sharp (F#), with notes G4, A4, and B4. The Piano staff has a treble clef and a key signature of one sharp (F#), with notes G4, A4, and B4. The piano part includes the instruction *m.g. p ten.*

bars 42-43: An indeterminate sound complex; in which the sonorities featured 'modify the nature of the piano sound' while simultaneously contributing to the 'semantic' structure (Boulez, 'Sonata', 163).

Musical score for bars 42-43, showing the Piano part. The score is written for three staves (treble, middle, and bass clefs). The middle staff has a key signature of one sharp (F#) and a time signature of 3/4. The score includes a triplet of notes in the treble clef staff, marked *lâchez* and *ten.*. The middle staff has a sequence of notes with fingerings 5, 4, 3, 2, 1. The bass clef staff has notes marked *ff* and *8*. The score is marked with *ff* and *8* in the bass clef staff.

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observable foundational structural phenomena.

*III.ii Open-form Works (ii) Structures II*

Boulez's proposition in *Pli selon pli* was essentially conceptual, and the claim that conceptually rather than structurally established semantic systems could support the 'presence' of 'absent' musical gestures in a way liberated Boulez's work with open form in the 1960s. In the programme note at the first performance of *Structures II* at Donaueschingen in 1962, Boulez challenged the idea that a musical work should be a 'formal construction with a firmly fixed direction'; 'Could one not try to regard it as a fantastic succession', he suggested, 'in which the "stories" have no rigid relationship, no fixed order?'.<sup>70</sup> The idea of a 'fixed order' was already anathema to the composer of the Third Piano Sonata, and the compositions Boulez worked on immediately following *Pli selon pli* developed this notion by experimenting with the idea of a 'semantic' musical form. In *Structures II*, *Figures*, *Doubles*, *Prismes* and *Domaines* in particular, Boulez explored how the extremes of formal fluidity could be established in compositions exhibiting a conceptual structural norm.

In the second book of *Structures*, Boulez addressed the question of non-linear development by examining how basic material could proliferate through dichotomous relationships,

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<sup>70</sup>Boulez, Programme note, *Structures II*, Donaueschingen, October, 1962, where the pianists were Boulez and Yvonne Loriod; quoted here from Griffiths, *Boulez*, 43.

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an idea expounded in the work by two interacting pianists. The work is divided into two 'chapters', one fixed and one mobile, during which the players elaborate material and form through a complex network of gestures designated in the score by the composer. One player maintains a static, central registration throughout the piece, while the other oscillates between outer extremes, a procedure that allowed Boulez to 'define specific areas of sonority ... that would be as striking as possible' in order to differentiate and individualise his musical material.<sup>71</sup> In the first chapter, fully notated 'chord multiplication' creates specific harmonic fields through which the pianists interact by alternate 'summoning' and simultaneous playing, both of which effect superimposed chordal material (Example Two).<sup>72</sup> The second chapter, by contrast, features fixed and free moments of mobility that permit the activity of individual sonorities without a rigid contextual relationship.

The form of the section in performance evolves as the players 'signal' each other to execute specific passages, a procedure that uses 'referential' musical gestures 'understood' by both players by virtue of their shared musical context.<sup>73</sup> This interaction, as well as the greater formal relationships in the piece, are supported by what Boulez has called 'classes of objects' that '[answer] directly to one's perception of

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<sup>71</sup>Boulez and Deliège, *Conversations*, 89-90.

<sup>72</sup>For a discussion of this procedure, see Griffiths, *Boulez*, 43-44.

<sup>73</sup>The interaction of two pianists in this manner is strongly reminiscent of *Duo II for Pianists* (1958) by Christian Wolff.

Example Two: Structures II, Chapter I

(excerpts from pp. 56-57)

56

1<sup>er</sup> groupe

2<sup>e</sup> groupe

accelerando

Sost. Ped. ....

intercaler groupe à groupe: ambnc etc./abmcnd etc./abcmndne etc./abcdmenopq/abcdemnopq\*)  
ou faire succéder un groupe à l'autre.

pppp

(Ped.)

Sost. Ped. ....

lever doucement la pédale pendant la résonance du 1<sup>er</sup> piano

\*) tant que l'on intercale, enchaîner sans interruption; les éléments intercalés du deuxième groupe (mnopq) seront séparés par de très brèves césures; les éléments non intercalés du premier groupe (abcde) seront enchaînés sans interruption.

UE 13 833 LW

1<sup>er</sup> P.

2<sup>e</sup> P.

Signe

(Sost. Ped.)

♩ = 112

accel.

signe début: jouez

(Sost. Ped.)

1/2 Ped.

---

them'.<sup>74</sup> These 'classes' are created by the construction of 'perceptible and conspicuous centres', such as a focus on particular pitches or registers, which establishes them as 'constants' in the musical texture and creates 'polarisation' within these complex structures.<sup>75</sup> In turn, Boulez maintained, these objects support a harmonic vocabulary that 'obeys a law of evolution rather than statistical generalisation', avoiding mobility in which 'any accumulation at all would have produced the same result'.<sup>76</sup>

### *III.ii Open-form Works (iii) Figures, Doubles, Prismes*

'What is needed' in a musical work, Boulez has said, is 'an accumulation or rarefaction that has meaning'.<sup>77</sup> In *Figures, Doubles, Prismes*, Boulez continued to explore the techniques of chord multiplication and register fixing established in *Structures II* and expanded on the notion that a consistent referential harmonic method could support multi-level mobile structures.<sup>78</sup> In its original form, *Doubles* employed three

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<sup>74</sup>Boulez and Deliège, 91.

<sup>75</sup>For Boulez's account of this sort of referential pitch activity in the first chapter, see Boulez and Deliège, 91.

<sup>76</sup>Boulez and Deliège, 91-92. For a discussion of the relationship between *Structures II* and Webern's Second Cantata, Op. 31, see Boulez and Deliège, 90. See also the Introduction to this study, page 13.

<sup>77</sup>Boulez and Deliège, 92.

<sup>78</sup>*Doubles* was begun in 1958, but its composition was interrupted by *Poésie pour pouvoir*. At the first performance in 1964, *Figures, Doubles, Prismes* up to the first half of the *Violon chinois* was performed, while the version performed in 1968 included the addition of part of *Rappel/ Effacement*. The Los

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different types of variation on two types of thematic material (slow and fast) that were divided between six serial themes. Boulez has described his expansion of the piece into *Figures, Doubles, Prismes* as 'a deliberate and not an unconscious gesture of homage' to Berg, in particular to Berg's use in the Violin Concerto of a soloist who 'progressively infects all the violins' with its melodic line before it 'narrows down and comes back to the soloist'.<sup>79</sup> In *Figures, Doubles, Prismes*, Boulez created a 'kind of large melodic line' that spreads through each of the violins in the section before returning to its 'point of origin'.<sup>80</sup> Beneath this surface gesture, the larger texture of the work supports a method of 'perpetual variation' where the thematic activity is divided into three parts: 'figures', the basic structural gestures; their 'doubles', which can be simple variations on the figure; and 'prismes', constructions which are made up of the 'mutual interaction of the figures'.<sup>81</sup>

Allen Edwards has outlined how these themes interact on a

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Angeles Philharmonic commissioned the completion of the work in 1993. For a detailed study of the thematic activity in the work, see Allen Edwards, 'Boulez's "*Doubles*" and "*Figures, Doubles, Prismes*": a Preliminary Study', *Tempo*, 185 (June, 1993), 6-17, especially pp. 15-17. For contemporary accounts of *Figures, Doubles, Prismes*, see Antoine Goléa, '"*Figures, Doubles, Prismes*" de Pierre Boulez', *Journal musical français*, 159 (May, 1968), 17-18; Hans Heinz Stuckenschmidt, 'Viel Lob und eine Warnung für die Berliner Festwochen', *Melos*, 35 (December, 1968), 484.

<sup>79</sup>Boulez and Deliège, 99.

<sup>80</sup>Boulez and Deliège, 99.

<sup>81</sup>Boulez and Deliège, 102-103.

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'contextual' and 'internal' level of material, while simultaneously contributing towards the global organisation of the work, its 'superstructural elaboration'.<sup>82</sup> 'Contextual variation', he suggests, acts like traditional development, allowing for the activity of themes as individual gestures and as segmented material with the potential for consistent organic variation within the structure. The 'internal variation', he continues, varies the shape of a theme by manipulating its pitch-class, duration, serial segment or serial ordering, altering the basic material 'by playing on the partial indeterminacy and permeability of their abstract components'.<sup>83</sup> Global or 'superstructural elaboration', which is mainly applied to the slow theme, occurs through multi-layered pitch canons appearing in chord formations (*canons d'intensités*), as linear figures (*mélismes-récitatifs*) or as brief fluctuating chords (*accords complémentaires*).<sup>84</sup> The application of these techniques of variation to the otherwise static thematic material transforms the theme through the 'rotating assignment of the different principles' to its segments at various stages in the work.<sup>85</sup> As Boulez has explained, in addition to exploring the modification of players' positions within an orchestra, 'perpetual variation'

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<sup>82</sup>Edwards, '*Figures, Doubles, Prismes*', 7.

<sup>83</sup>Edwards, '*Figures, Doubles, Prismes*', 8.

<sup>84</sup>Edwards, '*Figures, Doubles, Prismes*', 10.

<sup>85</sup>Edwards, '*Figures, Doubles, Prismes*', 10.

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was the central focus of *Figures, Doubles, Prismes*.<sup>86</sup> It was designed to create multi-layered structures where 'figures and their doubles can make their appearance at certain moments and prisms at others, but the threads of these three aspects of a single reality are constantly present'.<sup>87</sup>

### *III.ii Open-form Works (iv) Domaines*

The idea that a constant presence of the separate 'threads' of a 'single reality' can support a mobile structure relies heavily on the purported power of thematic material to effect non-linear referential formal patterning.<sup>88</sup> *Domaines* integrates the notion of a fluid structural network of meaning from *Structures II* and *Figures, Doubles, Prismes* with the idea of 'present' and 'absent' musical material from *Pli selon pli* in a work free of textual associations.<sup>89</sup> Jameux has called *Domaines* the 'final stage in the hypothesis of interpretation set out after Boulez's work on Mallarmé's *Livre*', but the piece has remained unsatisfying to Boulez, who attempted to resolve a number of its ideas in *Répons*, as Chapter Four will show.<sup>90</sup>

*Domaines* was designed to 'create an interplay of

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<sup>86</sup>Boulez and Deliège, 102.

<sup>87</sup>Boulez and Deliège, 102-103.

<sup>88</sup>Boulez and Deliège, 103.

<sup>89</sup>Boulez originally composed *Domaines* for clarinet solo (1961-1968); this discussion refers to *Domaines* for clarinet solo and six instrumental groups (1961-1968).

<sup>90</sup>See Boulez and Deliège, 88; Jameux, *Boulez*, 346.

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perspectives in relation to the groups that are not being used'.<sup>91</sup> Boulez divided the piece into the 'total collectivity' and a set of 'isolated groups' set against each other in the course of the composition, a distinction that created a 'shadow of perspectives' between present and momentarily absent musical material.<sup>92</sup> *Domaines* employs six ensembles of increasing size and a soloist, who plays antiphonally with the ensembles, tracing the structural 'trajectory' of the relationship of his material to that of the ensembles by travelling physically to their distinct 'domaines' in the course of the work (Example Three). The soloist's material consists of six 'cahiers', A through F, each of which must be played in the course of the piece. In the 'original' versions of the cahier, the soloist determines the order in which the sheets are played; in the 'miroir' versions, the order is determined by the conductor (Example Four).

The physical mobility of the soloist in *Domaines*, Boulez has said, was designed to emphasise the structural relationships between the musical materials in the piece, which has 'a very clear tendency to individualise its various component parts'.<sup>93</sup> This 'individualisation', as we have

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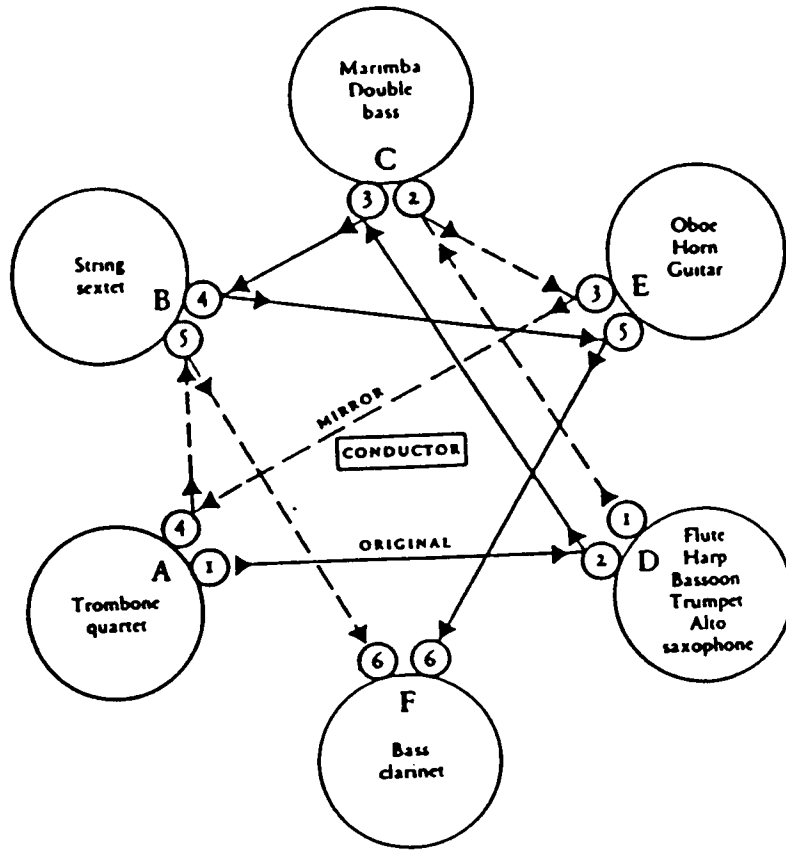
<sup>91</sup>Boulez and Deliège, 88.

<sup>92</sup>Boulez and Deliège, 88.

<sup>93</sup>Boulez and Deliège, 87.

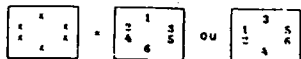
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**Example Three: *Domaines* (one possible arrangement)**



**Example Four: Domaines**

The original is published on separate cards, two of which are reproduced here side by side.



**CAHIER A**

Original

○ → *Très Lent*: harmonique  
 ○ → *Lent*: normal

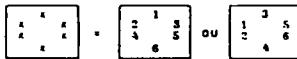
- a. *Modéré*: tr- tr- tr- tr- tr- tr- (1/2 ton inférieur)
- b. *Assez Vif*: Flatterzunge

*Vif*

*Modéré*

○ → *Lent* normal      Flatterzunge  
 ○ → *Très Lent* harmonique      Flatterzunge

*Assez Vif* + - + - + -



**CAHIER A**

Miroir

*Assez Vif*

a. *Assez Vif*: Flatterzunge  
 b. *Modéré*:  
 tr- tr- tr- tr- tr- tr- (1/2 ton sup.)

*Vif*

○ → *Très Lent* Flatterzunge      harmonique  
 ○ → *Lent* Flatterzunge      normal

*Modéré*

○ → *Lent* normal  
 ○ → *Très Lent* harmonique

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seen, grew throughout the period after the Third Piano Sonata: it appeared first as a structural factor in a partially texted 'semantic' system (*Pli selon pli*); it allowed for the thematic recalling of absent musical material through the exploitation of the developmental potential of gestures defined contextually by sonority (*Structures II*); it was sustained through proliferative systems based on perpetual fragmentation of variable thematic material (*Figures, Doubles, Prismes*); and eventually -- if somewhat unsatisfactorily for Boulez -- it was preserved in structures that effected a visual as well as structural awareness of the trajectory traced by thematic material across flexible mobile structures (*Domaines*). In '*...explosante-fixe...*', Boulez brought these ideas together in an electro-acoustic structure that recalls the design of *Poésie*. Before evaluating the goals of that piece, however, it is worth looking briefly at the acoustic works that precede it -- *Éclat/Multiples, Rituel* and *Notation I-IV* -- to see how Boulez's experiments with open form in *Pli selon pli, Structures II, Figures, Doubles, Prismes* and *Domaines* develop into 'works in progress'.<sup>94</sup>

### *III.iii Works in Progress (i) Éclat/ Multiples*

In the compositions between *Figures, Doubles, Prismes* and *Répons*, Boulez elaborated on the potential structural effect of variable proliferation and moved increasingly towards narrowing

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<sup>94</sup>Boulez, 'Sonata', 148.

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the gap between procedures that encourage the individualisation of musical material and those effecting variability of form. In *Éclat* (1965), later *Éclat/ Multiples* (1965-), Boulez elaborated on this idea through a structure that, like the title of the work, was to evoke images of a 'fragment', but that could also be read as a kind of 'explosion' or as the experience of observing elusive proliferative images that behaved like 'reflections of light'.<sup>95</sup>

*Éclat/Multiple* was principally conceived as a study of the nature of time and time control and an investigation into the potential for variability in musical structures exhibiting a fluid approach to the articulation of a sound continuum. The score omits tempo markings, and the responsibility for the execution of musical gestures in both their vertical and horizontal arrangement is for the most part shared between the conductor and the instrumentalists. Boulez designed a highly characteristic texture of fleeting musical images by establishing a two-part structure: a layer of background resonance of undulating trill patterns; and a soloistic layer that 'grafts and inscribes' its gestures onto the fluid background continuum through a number of variably indeterminate

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<sup>95</sup>Boulez and Deliège, 86-87; Peyser, *Boulez: Composer, Conductor, Enigma*, 165. For accounts of *Éclat/Multiples*, see Jameux, *Boulez*, 336-340; Griffiths, *Boulez*, 52; Peyser, *Boulez: Composer Conductor, Enigma*, 163-165; Boris Kremenliev, 'Boulez dirigiert die Uraufführung seines 'Éclat' in Los Angeles', *Melos*, 32 (July-August, 1965), 266-269.

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and mobile means.<sup>96</sup>

The musical texture in *Éclat/ Multiples* is articulated formally as the result of an interface between the two layers of material created over time in performance. Boulez provided the instrumentalists with clearly determined fragments with specific pitches and rhythms, but placed them in a variable relationship by imposing a specific combinative method. Their relationship is contingent on the interaction of two form-determining methods in performance: first, the point in the texture at which a gesture begins, an element that is determined by the conductor; and second, the rate at which the gestures unfold in relation to one another. In some sections, Boulez designated that the performers were to determine this latter detail (Example Five). Three different types of 'inserts' feature in the work that instruct the conductor and performers to apply a varying degree of freedom in executing musical gestures.<sup>97</sup> In some situations, for example, all of the pitches present must be played; in others, some pitches are optional.

Although the relationship between the soloistic gestures and their musical background is fluid and 'improvisatory' in *Éclat/ Multiples*, the indeterminacy in these sections is not meant to undermine their status as part of a directed musical whole. The implication is that the alignment of the horizontal

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<sup>96</sup>Jameux, *Boulez*, 336. The somewhat 'classical' two-part, either foreground/background or soloist/ensemble structure becomes characteristic after the Third Piano Sonata.

<sup>97</sup>See Jameux, *Boulez*, 339.

Example Five: *Eclat/Multiples* (pp.3 and 5)

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Chaque instrument écoutera la dynamique du premier instrument choisi et s'établira au même niveau

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and vertical aspects is essential to the idea of the work in performance, while at the same time being generally immaterial. Drawing on the works that precede *Éclat/ Multiples*, this design outlines how Boulez believed that the 'semantic' structure of the composition can be set up independently of performance context -- that it 'existed' in the potential relations among basic musical gestures. As these gestures enter and leave the texture (or are omitted altogether) some aspect of the 'structure' becomes manifest, and in doing so contributes to relational 'meaning'. The fact that, with the exception of pitch, each aspect of the musical material is treated relatively underlines the power of pitch-based relationships and their dominance in Boulez's developing concept of structure in this period. At the same time, it outlines the role of pitch in justifying these highly relative structures. Boulez has said that *Éclat* works on 'the principle of total determinacy in the writing'; 'there is no ambiguity at all in the text', he maintained, only 'fixed and single-course developments and multiple developments'.<sup>98</sup>

*III.iii Works in Progress (ii) Transition from Éclat to '...explosante-fixe...'*

In *Éclat*, Boulez has said, 'I reintegrate the classical approach that was customary up to our time'.<sup>99</sup> The use of 'classical' approaches, he maintained, were meaningful when

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<sup>98</sup>Boulez and Deliège, 87.

<sup>99</sup>Boulez and Deliège, 87.

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composing for groups of players since 'the collective can express itself in a purely collective way -- playing together, as an ensemble -- for a certain time, and then it can break apart to find its constituent individualities'.<sup>100</sup> At the same time as Boulez was aware of 'reintegrating' a 'classical' conception of contrasting textures, however, other commentators (and in some cases also the composer himself) read the significance of *Éclat/ Multiples* as a piece embodying an approach to form that ran contrary to these European procedures. Jameux, for example, has said that *Éclat* was an exercise in the 'contemplation of sound', a concept that purportedly had 'fascinated' Boulez, who saw it as 'the one lesson Western Music has learnt from the East'.<sup>101</sup> At a retrospective concert in New York in 1974, Boulez himself condoned this reading. He said that *Éclat* was in part an exposition on the difference between the Western belief that music was an 'aesthetic object' and the Eastern belief that it is part of 'ethical life'.<sup>102</sup>

We saw in Chapter Two that Boulez made clear his intolerance of the 'adoption of a quasi-oriental philosophy in

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<sup>100</sup>Boulez and Deliège, 87.

<sup>101</sup>Jameux, *Boulez*, 340. The intersection of the modernist reading of these structures with an 'Eastern' interpretation of a composer's desire to create freely floating structures is an important, uninvestigated part of Boulez's compositional trajectory after 1957, and one that falls outside the scope of this study.

<sup>102</sup>'I had been acquainted with Eastern music since 1946', he allegedly stated, but 'it is sometimes a long time before an acquaintance becomes an influence inside you' (Peyser, *Boulez: Composer, Conductor, Enigma*, 164-165).

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order to conceal a fundamental weakness in compositional technique' in 'Alea' in 1957.<sup>103</sup> He also acknowledged the importance of an understanding of the Eastern approach to his ideal indeterminate musical work, however, which 'respected' the '"finite" quality of Western art, with its closed circle ... while introducing an element of "chance" from the open circle of oriental art'.<sup>104</sup> Towards the end of the 1960s, this issue re-entered Boulez's writings, complicating both the interpretation of his compositions in relation to these texts and the reception of his larger project after the Third Piano Sonata.<sup>105</sup> The fact that these musical structures were said to combine a contemplative, 'Eastern' element with the desire to 'reintegrate the classical approach' is difficult to reconcile. This development is nevertheless interesting, however, in particular in light of the fact that it was at this same stage that Boulez made his third attempt to introduce an electronic element in his composition in the 1972 piece

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<sup>103</sup>Boulez, 'Alea', 26. See Chapter Two, pp. 77-78.

<sup>104</sup>Boulez, 'Alea', 35. See Chapter Two, page 73.

<sup>105</sup>See in particular Pierre Boulez, 'Where are we now?', *Orientations*, 445-463, especially pp. 448-449. 'Où en est-on?' was given as a lecture at Saint-Etienne in 1968, excerpts published in *Le Monde de la musique*, 2 (July-August, 1978), 20-22. Pierre Boulez, 'Sound, Word, Synthesis', *Orientations*, 177-182, especially pp. 179-182; first published as 'Son, verbe, synthèse', *Melos*, 25.10 (October, 1958), 310-313. Pierre Boulez, 'Oriental Music: A Lost Paradise?', *Orientations*, 421-424; first published as 'Musique traditionnelle -- un paradis perdu?', *The World of Music*, 9 (1967).

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'...explosante-fixe...'.<sup>106</sup>

*III.iii Works in Progress (iii) '...explosante-fixe...'*

Although in the later pieces, *Rituel in memoriam Maderna* (1974-75)<sup>107</sup> and *Notations I-IV* (1977-78),<sup>108</sup> he returned to conventional forces, Boulez combined electronic and acoustic music in '...explosante-fixe...' in a manner familiar from the design of the earlier *Poésie pour pouvoir*. '...explosante-fixe...' first appeared in the 1972 memorial volume of *Tempo* dedicated to Stravinsky, where it was presented as a set of directions for a potential composition centred on the pitch Eb ('Es' ['S'] in German) as an homage to its dedicatee (Example Six).<sup>109</sup> Boulez's own electro-acoustic version of the piece followed soon after its initial publication. Reconstructing its association of electronic and acoustic elements is at present

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<sup>106</sup>As we saw in Chapter One, his first two attempts to work with electronic or electro-acoustic media were the two electronic *Études* (1951-52) and *Poésie pour pouvoir* (1958).

<sup>107</sup>For discussions of *Rituel*, see Jameux, *Boulez*, 354-357; Griffiths, *Boulez*, 58-59; Michael Beiche, 'Seriellen Denken in *Rituel* von Pierre Boulez', *AM*, 38 (1981), 24-56; Ivanka Stoianova, 'Narrativisme, téléologie et invariance dans l'oeuvre musicale: à propos de *Rituel* de Pierre Boulez', *Musique en jeu*, 25 (1976), 15-31.

<sup>108</sup>For a discussion of the piece, see Brigitte Schiffer, 'Boulez's *Notations I-IV*', *Tempo*, 136 (March, 1981), 44-46. See also Ivanka Stoianova, 'Verbe et son "centre et absence": sur *cummings ist der Dichter* de Boulez, *O King* de Berio, et *Für Stimmen ... Missa est* de Schnebel', *Musique en jeu*, 16 (1974), 97-102.

<sup>109</sup>Pierre Boulez, '...explosante-fixe', trans. Susan Bradshaw, *Tempo*, 98 (1972). The 'article' was published without page numbers, although it is referred to subsequently here by number of openings, 1-7.

Example Six: '...explosante-fixe...' (Tempo, 1972)

This image shows a handwritten musical score for the piece '...explosante-fixe...' by Tempo, dated 1972. The score is written on ten staves, organized into four systems of two staves each. The notation is dense and includes various musical symbols such as notes, rests, and dynamic markings. The first system is labeled 'TRANSITION I' and the second 'TRANSITION II'. The score is heavily annotated with circles and arrows, indicating specific musical elements and their relationships. The circles are drawn around notes and rests, while the arrows point from these circled elements to other parts of the score, suggesting a complex web of musical connections or a specific analytical path. The handwriting is clear and legible, typical of a composer's or analyst's working draft.

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impossible -- Boulez's directions for applying electronic techniques to the *Tempo* score are not available, and both his 1972 version and the later 1989 expansion of the piece have been withheld from publication.<sup>110</sup> Boulez's detailed discussion of the work in a 1975 interview with Célestin Deliège outlines the composer's approach to the combining of these elements, however. It also offers an insight into the role the work was to play in drawing together his earlier interests, in particular, electronics, serialism and chance.

The principal premise of '*...explosante-fixe...*' is that transformation could be 'central to organisation and composition, rather than to preoccupations with sonority'.<sup>111</sup> The musical material in the piece is concentrated in two sources: an 'originel' containing the basic melodic/ rhythmic material and focusing on the pitch Eb; and six 'transitoires', sections that contain more varied material. The *Tempo* score states that the piece could be played by any number of instruments and could be transposed to make it suit the registers of the instruments employed. At the same time, however, it stipulates that the transformations suggested in the score would be most effective if they were executed by forces divisible by the maximum number of transpositions, which is seven.<sup>112</sup>

In the case of seven players, each reads one of seven

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<sup>110</sup>See Jameux, *Boulez*, 371-372.

<sup>111</sup>Boulez and Deliège, 106.

<sup>112</sup>Boulez, '*...explosante-fixe...*', *Tempo*, 6.

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individual scores, whose form, Boulez has said, is one of 'permutation at its most elaborate'.<sup>113</sup> Each of the seven parts features a set of near twelve or exactly twelve chromatic pitches related by a process of transposition that Boulez has called 'an oblique sort of co-ordination' rather than an 'immediate' one.<sup>114</sup> As the texture progresses, the piece takes shape through either the 'superposition' of all the parts or the playing of a single individual part. This differentiation is created by a structural opposition set up in the work between 'transients' -- sections featuring the sequences themselves -- and references to the original forms of these sequences, which arrest the progress of the transients. 'Thus', Boulez has said, 'there is a density across the superposition of the instruments' different courses ranging from one to eight layers which is very irregular'; the 'encounter' between these layers, he maintained, does not occur on a level of 'complete chance' but of 'prepared chance, and the encounter between actual sounds occurs on precisely the same plane'.<sup>115</sup>

The 'irregularity' that supports the reading of the relationship between these structures and sounds as 'prepared' rather than 'complete' chance is enhanced in '*...explosante-fixe...*', Boulez has maintained, by electronic technology, the

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<sup>113</sup>Boulez and Deliège, 104.

<sup>114</sup>See Griffiths, *Boulez*, 57; Boulez and Deliège, 104. For a list of the total permissible transpositions of the original material, see Boulez, '*...explosante-fixe...*', *Tempo*, 5.

<sup>115</sup>Boulez and Deliège, 105.

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means through which he purportedly made the idea of transformation 'central to organisation and composition' in the piece.<sup>116</sup> Electronics entered the texture, Boulez has said, to 'serve as a channel of communication' that is 'an essential and not just an additional phenomenon', and that forms a means of communication between instrumentalists 'of a kind that is absent at a direct and personal level'.<sup>117</sup>

Boulez made it clear that he employed electronic procedure on two levels. First, he used it to open up a level of communication across a spatial dimension. Loudspeakers could 'lift' sound objects from their 'direct source' in the instrumental groups and move them around and across the performance area, creating thematic 'cross-movements' in the overall performance texture.<sup>118</sup> Second, Boulez used

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<sup>116</sup>Boulez and Deliège, 106.

<sup>117</sup>Boulez and Deliège, 105.

<sup>118</sup>Boulez and Deliège, 105. The use of loudspeakers in a performance space was not a new development in 1972; it had interested Stockhausen as early as *Gesang der Jünglinge* in 1955-56 and by 1964 had become the central structural focus in Cage's work with performance space and amplifiers in the extended electro-acoustic event *Variations IV*. For a discussion of this procedure in *Gesang der Jünglinge*, see Maconie, *The Works of Karlheinz Stockhausen*, 57-61. For a discussion of *Variations IV*, see James Pritchett, *The Music of John Cage* (Cambridge, 1993), 155-156. As we have seen, Boulez had himself already experimented with the idea in the partially spatial structure of *Poésie pour pouvoir*, where he had employed a ring of loudspeakers in conjunction with a specific distribution of instrumentalists in 1958. In *Poésie*, Boulez placed loudspeakers behind the audience, who faced a central orchestra distributed on platforms in a 'mounting spiral'. The arrangement was to effect a distribution of textures that would combine 'visual support with an extended hearing space' and to make use of '"spatialisation" and the relay principle' in the articulation of the relationships between musical material (Boulez and Jameux, 201).

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electronic transformation to enhance proliferative development and formal context. In *Poésie pour pouvoir*, Boulez has said, there were three basic types of electronic material: gestures achieved by transformations of the Michaux text; 'purely electronic material' produced by an oscillator; or 'material based on chords' extracted from the instrumental sections of the piece and electronically transformed.<sup>119</sup> In '*...explosante-fixe...*', electronic transformation was employed to increase the breadth of thematic variation and to create an extra 'structural' dimension in the performance context by operating on the inner level of sound.

The distinction between these two methods becomes clear when they are considered with respect to performance. While the transformations that appeared as electronic objects in *Poésie* were derived before the performance began, in '*...explosante-fixe...*', Boulez applied what he called 'totally independent' electro-acoustic processes of transformation, creating variations on thematic material within the performance context. These spontaneous 'thematic' electronic transformations, which foreshadowed Boulez's work with *Répons* within a decade, made the process 'central to organisation and composition'.<sup>120</sup> More importantly, however, the procedures were designed to connect transformation -- the 'form-determining' element of a 'semantic' musical system -- to the inner world of material. At the end of a period in which

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<sup>119</sup>Boulez and Jameux, 'Interview', 201.

<sup>120</sup>Boulez and Deliège, 106.

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Boulez was interested in the 'fusion of sound and meaning in a language of extreme concentration', this method was an important development.<sup>121</sup> It allowed him to 'entrust to acoustical transformation the very principle of communication ... where it does not exist either on the geographical or the natural level'.<sup>122</sup>

#### IV

#### *Electronic transformation, serialism and chance: Reconciling '...explosante-fixe...' and the 'unfinished' Third Piano Sonata*

##### *IV.1 '...explosante-fixe...'*

In 1972, Boulez stated that 'two essential features' dominated '*...explosante-fixe...*': 'a renewal of the concept of chamber music, and a fresh justification for the inclusion of the electronic instrument'.<sup>123</sup> In chamber music, he maintained, the proximity of the individual players was an unavoidable structural element; their arrangement in a 'tiny society within a few square yards ... leads to immediate cohesion'.<sup>124</sup> In '*...explosante-fixe...*', he said, he 'moved completely away from this conception' and replaced it with a means of

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<sup>121</sup>Boulez, '*Pli selon pli*', 175.

<sup>122</sup>Boulez and Deliège, 105.

<sup>123</sup>Boulez and Deliège, 104.

<sup>124</sup>Boulez and Deliège, 104.

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communication that was 'absent at a direct and personal level'.<sup>125</sup> The use of electronics in the piece allowed Boulez to avoid cohesion and 'preoccupations with sonority', and to substitute a method that created unity by effecting multi-level thematic activity across the acoustic and electro-acoustic levels.<sup>126</sup>

This new 'means of communication' was in keeping with the general aesthetic direction, in particular his conviction, outlined at the beginning of the 1960s, that a composition could invoke a 'higher ... semantic plane' by exploiting the connection between 'present' and 'absent' structures.<sup>127</sup> His compositions had progressed from text-inspired systems deriving form from the interactive potential of material (*Pli selon pli*) to systems supporting extended formal mobility that used the potential for relative sound objects to create unity through virtual thematic relationships (*Éclat/ Multiples*). At the same time, this development brought together discussions about electro-acoustic music present in his texts from the 1950s. The design of a work in which electronic transformation acted on context-defined acoustic sound objects to unite homogeneous and non-homogeneous sound space powerfully recalls his discussions of electro-acoustic music from 'Tendencies',

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<sup>125</sup>Boulez and Deliège, 104, 105.

<sup>126</sup>Boulez and Deliège, 106.

<sup>127</sup>Boulez, 'Constructing an Improvisation', 170.

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'Alea', and '"At the Edge of a Fertile Land"'.<sup>128</sup>

Boulez's achievement across the 1960s and 1970s -- and in particular in '*...explosante-fixe...*' -- appeared to result in an exciting solution to a long-standing problem, and to offer a practical method for maintaining control over expanded structures in compositions featuring mobile form. The 'semantic' musical systems designed initially for the Third Piano Sonata and employed in '*...explosante-fixe...*' supported meaning by the interaction and transformation of related musical objects, an achievement that met the challenge of what Boulez called the central task of composers in 1960: to create structures that restored the 'parity between the formal powers of music and its morphology and syntax', where 'fluidity of form' could be 'integrated with fluidity of vocabulary'.<sup>129</sup>

These systems were meant to be related in a significant way, and it is not difficult to see how they can be used to support Boulez's claim that his works are 'different facets of one central work, one central concept'.<sup>130</sup> The theory that Joyce's idea of a 'work in progress' unites Boulez's compositions from the end of the 1950s, similarly, is useful in isolating a shared focus on a what appears to be a Mallarméan model of form in which structure is derived from the free

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<sup>128</sup>Boulez, 'Tendencias', 179; 'Alea', 35; '"At the Edge of a Fertile Land"', 170-171.

<sup>129</sup>Boulez, 'Sonata', 144.

<sup>130</sup>Boulez and Deliège, 50.

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interaction of context-defined 'linguistic' sound-objects.<sup>131</sup> Boulez's assertion that the structures of '*...explosante-fixe...*' provided him with a 'fresh justification for the inclusion of the electronic instrument' is problematic, however, and points to an issue of consequence for the evaluation of his assessments of his other compositions. In particular, it raises the question of the aesthetic and structural significance of his decision to invoke electro-acoustic procedure in 1972 and what light that might shed on the 'unfinished' status of the Third Piano Sonata.

We have seen that Boulez believed the availability of equipment allowing him to add a level of spatial and thematic variability in performance brought transformation to the centre of 'organisation' and 'composition' in '*...explosante-fixe...*' in a way that allowed him to unite the acoustic and electronic dimensions.<sup>132</sup> The use of this procedure was not stipulated in the 1972 *Tempo* version of the score, however, a fact that confirms that it was extrinsic to Boulez's initial structural vision. In the score, electronic procedure was listed among a number of options for the interpreter, but was not said to be essential to the activity of material. Rather, electronic transformation could be used, it suggested, to create a level of differentiation in the acoustic space of the instrumental groups along a continuum from 'very resonant' to 'very dry' -- it was to be an acoustic effect rather than a structural

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<sup>131</sup>Boulez and Deliège, 50.

<sup>132</sup>Boulez and Deliège, 106.

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necessity.<sup>133</sup>

The initial marginalisation of the structural potential of electronic technology is especially interesting in light of other elements of '*...explosante-fixe...*'. The most important of these is the fact that the unity of the work depended on a structure-defined conceptual system based on dichotomous thematic relationships -- relationships that were reminiscent of the connection between 'formant/ application' in the Third Piano Sonata, 'present/ absent' in *Pli selon pli* and 'class of object/ perception' in *Structures II*.<sup>134</sup> Like these acoustically conceived structures, rather than rely on electronic transformation, the unity of '*...explosante-fixe...*' was based on basic serial material.

As the *Tempo* score makes clear, Boulez was careful to delimit the variability of the piece by restricting the 'original' material to a number of 'permissible total transpositions' (Example Seven).<sup>135</sup> The profile of these transpositions in sounding relation, whether 'present' or 'absent', neither determines their semantic meaning through formal exchanges, nor relies on a method that could only be executed through an electronic medium, however. Rather, the derivation of form from mobile material in '*...explosante-fixe...*' conforms to a simple serial premise: that meaning can

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<sup>133</sup>Boulez, '*...explosante-fixe...*', *Tempo*, II, 6.

<sup>134</sup>Boulez, 'Sonata', 152; Boulez, 'Constructing an Improvisation', 170; Boulez and Deliège, 91. See also page 126, above.

<sup>135</sup>Boulez, '*...explosante-fixe...*', 6.

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Example Seven: '*...explosante-fixe...*' (Tempo, 1972)

Permissible total transpositions

The image shows a handwritten musical score for a piece titled '...explosante-fixe...'. The score is written on two systems of staves. The first system is labeled 'Original' and contains seven measures of music. Above the first measure, the word 'Original' is written. Above the second measure, the Roman numeral 'I' is written. Above the third measure, the Roman numeral 'II' is written. Above the fourth measure, the Roman numeral 'III' is written. Above the fifth measure, the Roman numeral 'IV' is written. Above the sixth measure, the Roman numeral 'V' is written. Above the seventh measure, the Roman numeral 'VI' is written. The second system of staves contains a transposed version of the music from the first system. Below the second system, there is a small musical notation enclosed in parentheses, which appears to be a key signature or a specific transposition instruction.

All these total transpositions must lie precisely within the indicated register, and each transposition may be used only once. If transposition II is compulsory, in one case or another, transpositions III to VII can take place unrestrictedly in the alternate octave indicated.

The key signatures are given to facilitate reading at sight; the transposed sections should eventually be written out.

Note that the *total transposition* must be applied homogeneously: to all of a group or groups (the ORIGINAL and the TRANSITIONS).

The maximum of 7 transpositions can only be achieved when there are 7 instruments – or 7 groups of instruments.

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only be maintained in expanding, mobile musical structures when form proceeds from the automatic combination of its basic permutable material.

#### *IV.2. The 'Unfinished' Third Piano Sonata*

The connection between a 'linguistic' model of meaning-determining formal structures and the potential for advanced serial structures to create meaningful abstracted connections between diversely permuted musical material is strong. It can be argued -- and Boulez proposes the idea in 'Poetry -- Centre and Absence -- Music' -- that these abstract, essentially conceptual, connections are appropriate to any kind of advanced serial or post-serial form.<sup>136</sup> With respect to the advancement of Boulez's independent indeterminate work concept, however, the composer's statements about the essentiality of an electronic element to the creation of derived 'semantic' musical structures in '*...explosante-fixe...*' has specific consequences. Like his assessments of electro-acoustic procedure in the 1950s, it shows that as late as 1972 he was still overstating this case, a fact with specific implications for the 'unfinished' status of the Third Piano Sonata.

In '"At the Edge of a Fertile Land"', Boulez stated categorically that electronic media could not operate on an independent structural level. Rather, he maintained, they could only be used to 'guarantee' a level of continuity between electronic and acoustic material generated as part of a serial

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<sup>136</sup>See page 130, and note 66, above.

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structure.<sup>137</sup> In a letter to Cage in 1950, he explained that he had foreseen structures in which 'sound aggregates, linked by a constant but movable within a scale of sonorities' would produce a situation where 'form does not stem from an aesthetic choice'.<sup>138</sup> This early belief in the origin of open-form structures was in part a serial conception. As Boulez explained in his letter, it was also indebted to the example of Cage's compositions, however, notably the two pieces for prepared piano, *Sonatas and Interludes* (1946-48) and *Music of Changes* (1951).

The combination of these factors -- the overemphasis of the potential of electro-acoustic procedures, the preservation of a serially inspired structure, and the indebtedness of Boulez's open-form aesthetic to the early idea of Cage -- is an important part of Boulez's evolving post-war indeterminate aesthetic. It shows that, despite his success in preserving a serially inspired model of unity across his compositions, Boulez took great pains to complicate this basic model, and that the vision of the unfulfilled promise of electronic technology remained a central, influential theme. Thus, if 'Strophe', 'Séquence' and 'Antiphonie' posed problems for which Boulez had 'still found no practical solutions' in 1960, it was not because their designs accommodated the potential of electro-acoustic structures before they were available, the

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<sup>137</sup>Boulez, '"At the Edge of a Fertile Land"', 163-164.

<sup>138</sup>Pierre Boulez, Document 26, Nattiez, *Correspondence*, 80-90, p. 85.

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reading that authenticates the belief that the Sonata was abandoned because of the insurmountable obstacle of a lack of technical means.<sup>139</sup> Rather, if the Third Piano Sonata was 'unfinished', it was owing to a lack of real evolution in Boulez's early belief in the power of serial structures to support indeterminacy without compromising intentionality, a fact that was to have specific consequences for the articulation of the relationship between form and aesthetic in his subsequent compositions.

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<sup>139</sup>Boulez, 'Sonata', 153.

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## Chapter Four

### Re-reading *Répons*

A piece of music is not like a picture. A picture is finished; one goes through an exhibition, looks at it and already, solely on the basis of its material, one has a completely different time-experience than one would in hearing a piece of music. The time it takes to look at a picture is already contained within it. But in music, the time-experience is also tied to chance: to the details that change a score from time to time. A score is -- for me at least -- only a pattern, and in order for it to be interesting, this pattern must become alive, even with its faults: something is right or it is not, or it works in another way through differences in interpretation that one person stresses here more strongly than another, there, one interpreter is slower or faster -- which is like material that one can make flexible. This time-concept, this living-time is, for me, the most important thing in music.

Boulez, 'Über *Répons*' (1985)<sup>1</sup>

#### I

Boulez's description of a time-dependent ideal musical work features three interrelated components: an unrealised pattern

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<sup>1</sup>'Eine Musik ist nicht wie ein Bild. Ein Bild ist fertig; Sie gehen durch eine Ausstellung, Sie schauen es an, und schon allein aufgrund seines Materials haben Sie ein ganz anderes Zeiterlebnis als beim Hören von Musik. Die Zeit, um das Bild anzuschauen, ist in ihm bereits enthalten. Aber in der Musik ist das Zeiterlebnis auch mit dem Zufall verknüpft: mit den Kleinigkeiten, die eine Partitur von Mal zu Mal verändern. Eine Partitur ist -- für mich wenigstens -- nur ein Muster, und um interessant zu sein, muß dieses Muster lebendig werden, selbst mit Fehlern: etwas stimmt oder es stimmt nicht, oder es stimmt auf eine andere Art durch Verschiedenheiten der Interpretation: der eine betont hier etwas stärker als der andere, da ist ein Interpret langsamer oder schneller -- das ist wie ein Stoff, den man flexibel machen kann. Dieser Zeitbegriff aber, diese Lebendigkeit der Zeit, ist für mich das Wichtigste in der Musik.' Pierre Boulez and Josef Häusler, 'Über *Répons* - ein Interview mit Josef Häusler', *Schriftenreihe der Heinrich Strobe-Stiftung des Südwestfunks*, 4 (Kassel, 1985), 7-14, pp. 13-14. (Translations in this chapter are by the present author.)

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of flexible material (the score), its sounding realisation (performance) and the variability inherent in the performer's interpretation that effects the transition from score to performance. The third of these elements, interpretation, invokes the vitality and expressive potential of the flexible dimension of time, the quality, Boulez stresses, that is 'the most important element in music'.<sup>2</sup> As he outlined in his 1985 interview with Häusler on *Répons*, it is a characteristic that is especially manifest in the unique structure of the piece, and it is strictly contingent on the presence in the score of an essential element of chance.

Boulez's statement offers considerable scope for an evaluation of his independent indeterminate aesthetic, both as it was regenerated in a new wave of criticism after the completion of *Répons* and in light of our study of earlier developments. His division of the musical work into three co-dependent parts and his clear articulation of the formal relevance of chance simplifies his indeterminate work-concept after 1980, emphasising the importance of the structural potential of conceptual connections between indeterminate structures over the unifying facility of observable directed serial constructs.<sup>3</sup> This definition affords *Répons* a significant status among Boulez's compositions; at the same

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<sup>2</sup>Boulez and Häusler, 'Über *Répons*', 14.

<sup>3</sup>For foundational work on this issue in the twentieth century, see Roman Ingarden, *The Work of Music and the Problem of Its Identity*, trans. Adam Czerniawski, ed. Jean G. Harrell (London, 1986), 34-40.

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time, it concludes from the work that the essential characteristics of a musical work contained in the score are dependent on the dimension of time. Against this background, *Répons* appears to have featured an integrated indeterminate structural design, an effective union of structure and aesthetic and a successful incorporation of electro-acoustic media -- all factors we have established to have been in some way complicating to Boulez's pursuit of an independent compositional trajectory. The belief that *Répons* marks a significant point of arrival in Boulez's indeterminate aesthetic requires attention, however, as does the assumption that this conceptual reading of the relationship between indeterminate structures in the musical work was part of an independent post-war trajectory. This chapter evaluates claims about the structure and success of *Répons* by examining Boulez's accounts of the piece and comparing them with key critical assessments of its success by Boulez and other writers.

## II

### *Répons* -- design/ aesthetic.

After a period of diagrammatic scores from the Third Piano Sonata through *Éclat/ Multiples* to '*...explosante-fixe...*', Boulez used a fairly conventional score format for *Répons* in 1981. He designated the instrumentation and outlined sets of parts and general instrumental sectioning, and integrated these divisions into the overall texture by applying consistent

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changes of mensuration reminiscent of the early prepared piano pieces of Cage (Example One).<sup>4</sup>

The score shows that articulation of the structure in performance is achieved principally through textural combinations. In some sections, individual thematic details are contrasted with an otherwise static chordal texture (Example Two); in others, in a procedure not unlike the vertical variability effected in *Éclat/ Multiples*, the overt individualisation of musical gestures on a static chordal background contrasts with a more wide-ranging texture where thematic differentiation is expressed through both instrumentation and the simultaneous application of variable tempi (Example Three).<sup>5</sup>

These techniques support antiphonal activity -- or formal 'responses' -- in the piece, a procedure that draws on Boulez's previous works, in particular his compositions from *Pli selon pli* through '*...explosante-fixe...*'. The use of texture and timbre to articulate sectioning is also reminiscent of some of his earliest works, in particular the 'sound blocks' of musical material to create form in the flexible serial texture of *Le Marteau sans maître* and the 'psychological contrasts' -- sections where the origin of serial material was intentionally obscured by fast or complex writing -- in the Second Piano

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<sup>4</sup>For a discussion of Boulez's awareness of this connection with Cage, see Jean-Jacques Nattiez, *Le Combat de Chronos et d'Orphée* (Paris, 1993), 185-186.

<sup>5</sup>Cf. Chapter Three, Example Five, p. 145.

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Sonata.<sup>6</sup>

The thematic profile of *Répons* is differentiated from those earlier works, however, by the role of electronic transformation in the articulation of form in performance. In addition to sections featuring flexible tempi and the importance of the conductor in determining the exact combination of the work's vertical aspect, indeterminacy in *Répons* is effected chiefly through spontaneous electronic transformation. The precise details of the causal relationship between the score and its realisation in performance are impossible to measure, in part because of a lack of access to source material about the application of the 4X and the Matrix 32 in past performances and in part owing to the piece's inherently expansive nature.<sup>7</sup> Despite the difficulty involved

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<sup>6</sup>For a discussion of this procedure, see Lev Koblyakov, 'Pierre Boulez *Le Marteau sans maître*', *Zeitschrift für Musiktheorie*, 8 (1977), 24-39, especially pp. 38-39; for a discussion of the structural potential of timbre in affiliation with sound-objects see Pierre Boulez, 'Timbre in composition -- timbre in language', *Contemporary Music Review*, 2 (1987), 161-171; on the relation of the piece to *Le Marteau*, see Jean-Jacques Nattiez, *Le Combat de Chronos et d'Orphée*, 203; for Boulez's account of 'psychological' contrasts in the Second Piano Sonata and other early works, see Pierre Boulez and Célestin Deliège, *Conversations with Célestin Deliège* (London, 1976), 40-41. The use of 'sound blocks' and the principle of formal articulation through 'psychological contrasts' draws these early works together with works like *Pli selon pli* and '*...explosante-fixe...*' and their relationship to Boulez's text 'Poetry -- Centre and Absence -- Music', *Orientations*, 183-198, originally published as 'Poésie -- centre et absence -- musique', *Melos*, 30.2 (February, 1963), 33-40. See Chapter Three, Section III, p. 123 and the present chapter, note 74.

<sup>7</sup>Since it premiered at a length of 19'30" in Donaueschingen in 1981, *Répons* has grown considerably, first to 32'15" in London in 1982 and eventually to 45' for its 1984 performances in Turin, Basel, Metz and Paris. Dominique Jameux, *Pierre Boulez*, trans. Susan Bradshaw (London, 1991), 358. For a related

Example One: Répons Instrumental sectioning; unified mensuration

The image displays a handwritten musical score for Pierre Boulez's 'Répons'. The score is organized into several systems of staves. The notation is highly complex, featuring a variety of note values, rests, and dynamic markings. Some notes are circled, and there are several annotations in the margins, including the word 'release' and some numerical markings. The overall structure suggests a focus on rhythmic precision and instrumental coordination, consistent with the 'unified mensuration' mentioned in the title.

account, see Reinhard Oelschägel, 'Koordination von Akustik und Musik', *Musiktexte*, 9 (1985), 51-54. For an opinion on the première and its political implications, see Georgina Born, *Rationalising Culture: IRCAM, Boulez and the Institutionalisation of the Musical Avant-garde* (Berkeley, Los Angeles and London, 1995), 91, 104 and 111. See also CD note by Andrew Gerzso, in 'Boulez: Répons', Deutsche Grammophon 457 605-2 (1998).

Example Two : Répons Thematic details contrasted with static chordal texture

The musical score is organized into ten systems of staves, numbered 13 through 22. Each system contains multiple staves, likely representing different instruments or voices. The notation is dense and includes various rhythmic values, such as eighth, sixteenth, and triplet notes. There are also rests and dynamic markings. Annotations like "After legend" and "1st" are present, indicating specific sections or first endings. The overall texture is characterized by the contrast between active, rhythmic thematic lines and more static, chordal accompaniment.

Example Three : Répons Thematic differentiation through timbre, tempi, duration

The image displays a handwritten musical score for 'Example Three', illustrating thematic differentiation through timbre, tempi, and duration. The score is organized into several systems of staves, with measures numbered 12 through 53. The notation is dense and complex, featuring various rhythmic patterns, dynamic markings, and articulation symbols. The score is divided into sections by vertical lines and includes several circled letters (A, B, C, D) marking specific points of interest. The notation includes notes, rests, and various rhythmic values, with some notes enclosed in boxes or other graphical elements. The overall style is that of a working manuscript or a detailed study score.

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in establishing structural and thematic connections between these performances, however, the details of the composition in the score, in association with published information, strongly suggest that electronic transformation is employed to enhance effects that feature as part of the general texture. In particular, the differentiation of musical gestures against a background texture shows a clear tendency toward the articulation of form through the interaction of a variety of instrumental, pitch-centred and thematic differentiations, each of which could be enhanced and varied in performance through electronic transformation.<sup>8</sup>

Boulez's discussions of the piece confirm this reading, which in a way links the relationship between score and electronics in *Répons* to the procedures the composer employed in '*...explosante-fixe...*' in 1972.<sup>9</sup> In our examination of that work in Chapter Three, we saw that electronic transformation was employed to enhance the interaction of 'sound-objects' in performance, a technique designed to increase the differentiation of these objects, thereby increasing the tendency of the form to be expressed through the activity of evolving basic musical structures. *Répons* draws to a great extent on this model of the relationship of form to content and the role of thematic transformation in supporting

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<sup>8</sup>For a discussion of how contrast is achieved by juxtaposing thematic activity with electronically generated 'musical wallpaper' (*die Klangtapete*) or 'background music' in the piece, see Boulez and Häusler, 'Über *Répons*', 11, 13.

<sup>9</sup>See Pierre Boulez and Andrew Gerzso, 'Computers in Music', *Scientific American*, 258.4 (April, 1988), 26-32, p. 29.

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an aesthetic dialogue across a multi-level interface of non-hierarchical sound. The otherwise broad-ranging variation permitted in '*...explosante-fixe...*' was restricted by a limited set of permissible transformations of the basic material outlined by Boulez in the *Tempo* score (Chapter Three, Example Eight). The structure of *Répons*, similarly, is held together by a fixed set of basic materials against which the expanded acoustic and electro-acoustic activity in the piece makes structural sense. As Boulez and the technician Andrew Gerzso explained in 1988, the progress of the piece occurs principally through a method of chord derivation; most of the harmonic material can be traced to a group of five chords stated in the first bar of the score (Example Four).<sup>10</sup>

*Répons* is said to mark an important point of departure from the texture of '*...explosante-fixe...*', however, owing to the availability of a technical facility that could effect these structures as part of a texture in which musical gestures moved fluidly across acoustic and electronic sound. In 1985,

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**Example Four: *Répons* Five primary chords**



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<sup>10</sup>Boulez and Gerzso, 'Computers in Music', 31-32.

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Boulez explained that past electro-acoustic pieces had been subordinated to the inflexible time-dimension specific to tape, because there was 'no point of contact' between the types of sound.<sup>11</sup> In conducting works of other composers featuring acoustic sound and music for tape, Boulez maintained, the 'interpretive gesture' of the score became 'paralysed' by the lack of temporal flexibility offered to the conductor or performer in tape-dominated texture.<sup>12</sup> 'Tape-time is chronological, rather than psychological, time', he wrote, 'the time of the interpreter -- a conductor or an instrumentalist -- is, by contrast, psychological'.<sup>13</sup> Ideally, musical gestures would not simply be able to cross from one realm to the other; they would exhibit the 'psychological' time-dimension of acoustic music equally in musical material generated by electronic means.<sup>14</sup>

The 4X and Matrix 32 made it possible to cross the boundary between electronic and acoustic sound.<sup>15</sup> The 4X was

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<sup>11</sup>See Pierre Boulez and Dominique Jameux, 'An Interview with Dominique Jameux', in Pierre Boulez, *Orientations: Collected Writings*, ed. Jean-Jacques Nattiez, trans. Martin Cooper (London, 1985), 199-202, p. 202. This text will subsequently be referred to as 'Interview'.

<sup>12</sup>Boulez and Häusler, 'Über *Répons*', 7.

<sup>13</sup>'Die Zeit des Tonbandes ist keine psychologische Zeit, sondern eine chronologische; die Zeit des Interpreten -- eines Dirigenten oder eines Instrumentalisten -- ist dagegen eine psychologische', Boulez and Häusler, 'Über *Répons*', 7.

<sup>14</sup>Boulez and Häusler, 'Über *Répons*', 14.

<sup>15</sup>This discussion draws on two main texts: Boulez and Gerzso, 'Computers in Music'; and Boulez and Häusler, 'Über *Répons*', especially pp. 10-12. For secondary studies, see Theo Hirsbrunner, 'Elektro-akustische Techniken zeitgenössischer

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a computer processor that could store pre-determined sounds and recreate them as part of a flexible electro-acoustic texture. In association with the Matrix 32, a sophisticated computerised mixing board, the 4X could effect the spontaneous digital transformation of acoustic sound material, and so amplify, transform and relocate musical gestures that were produced acoustically by instrumentalists in the context of performance. When a pitch-pattern played by an instrumentalist corresponded to a pattern stored by the 4X, the computer could respond by activating mechanisms that would transform these patterns spontaneously before feeding them back into the texture through loudspeakers surrounding the performance space.

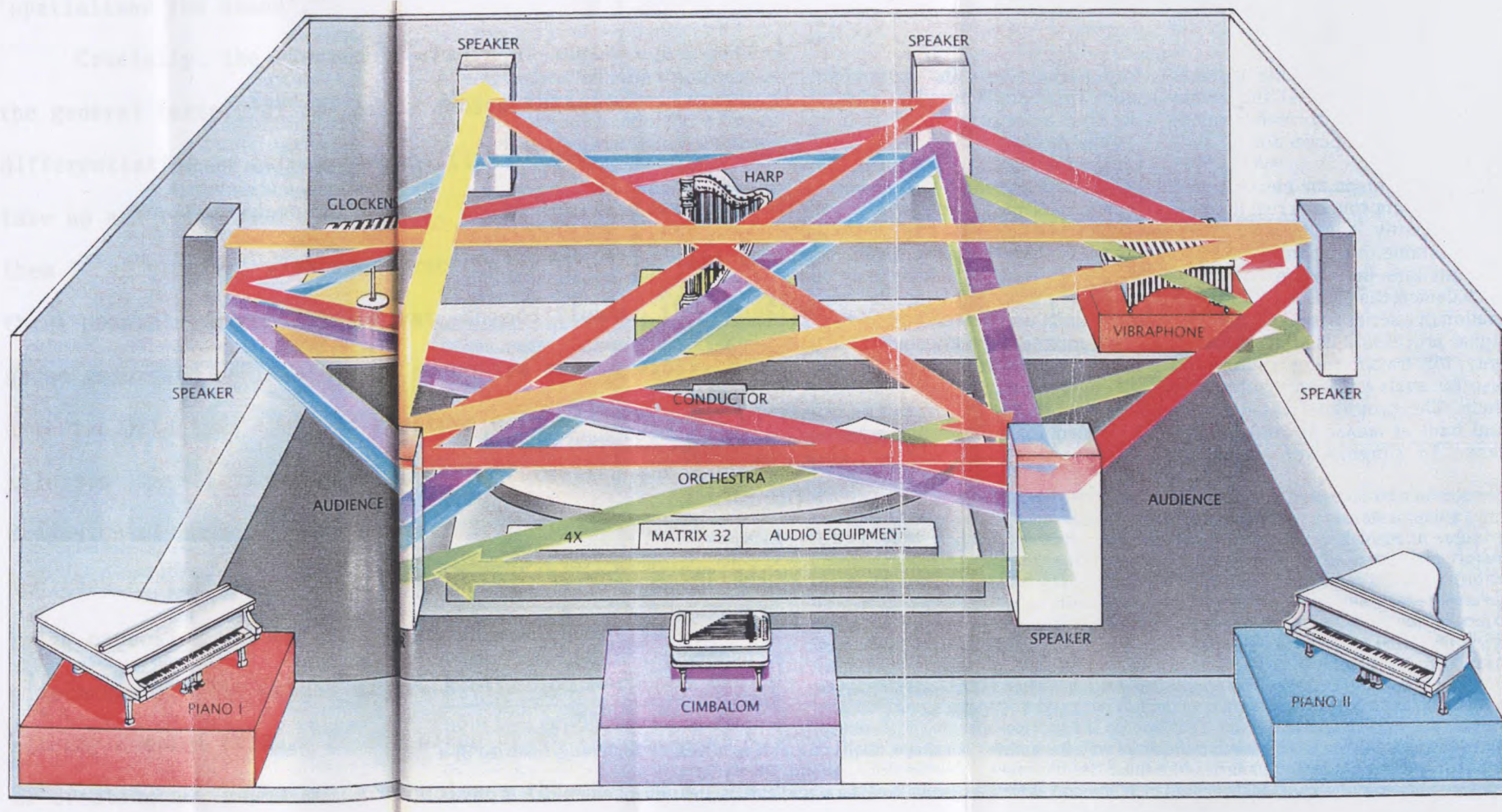
As in *Poésie pour pouvoir* and *Domaines*, the distribution of instrumentalists in space -- in particular in relation to the audience -- was integral to this process. The performance space of *Répons* was divided into three layers or 'spirals' of sound: a centrally located chamber orchestra surrounded by the audience, a middle ring of soloists outside the audience and an outer ring of loudspeakers (Example Five).<sup>16</sup> This arrangement allowed for the instrumentalists' material to have a multi-layered effect on the overall texture; it would appear in their initial acoustic location, but could also be collected and sent, via the feedback mechanism, on a separate trajectory

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Musik -- Tiefenstrukturen in Boulez's *Répons*', *Universitas*, 40.1 (1985), 79-86; and Martin Knakkegaard, 'Boulez, IRCAM og *Répons*', *Dansk Musik Tidsskrift*, 73.3 (November, 1996), 82-87.

<sup>16</sup>For 'spirals', see also Boulez and Jameux, 'Interview', 202; for a discussion of Boulez's working title, 'The Ring' (*Der Ring*), see Boulez and Häusler, 'Über *Répons*', 8.

Example Five: Répons Performance space  
(Scientific American, 258/4 [April, 1988], pp. 26-27)



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across the room. The combined activity of the ensemble, soloists and loudspeakers (via the 4X and Matrix 32) created a mobile texture of intersecting thematic and spatial trajectories, a context in which electro-acoustic manoeuvres 'spatialised the sound'.<sup>17</sup>

Crucially, the electronic return of musical gestures into the general texture of the piece caused thematic differentiation in both space and time -- the Matrix 32 could take up and relocate these sounds, while the 4X could transform them in unforeseen, although structurally related, ways through three possible procedures. First, in addition to the acoustic sound generated by the chamber orchestra and soloists, Boulez drew two principal types of electronic sound events out of the soloists' material: sound-colour transformation and structural expansion of sound.<sup>18</sup> Sound-colour transformation was achieved by the synthetic modulation of the solo material, while expansion was effected through the use of delay and phase displacement. The method of transformation enriched the already-complex texture of the piece by mixing existing colours or creating new sound-colour complexes through the electronic enhancement of one or more of the timbral qualities of a given sound. Electronic delay and phasing, by contrast, enabled Boulez to add a multi-level rhythm-based structural dimension to the piece. He could derive complex networks of thematic rhythmic patterning in the performance context by increasing or

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<sup>17</sup>Boulez and Gerzso, 'Computers in Music', 31.

<sup>18</sup>Boulez and Häusler, 'Über *Répons*', 9-10.

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delaying the sound waves and other acoustic properties of the soloists' basic musical material before feeding it back into the texture. Significantly, this electronic material could be reintroduced immediately as the soloists were stating their themes, or it could be delayed and made to return to the texture later.<sup>19</sup>

Second, in addition to creating a three-dimensional sound-scape in the performance space, spatial transformation was used to add a level of integrated expansion to the texture that was derived from the acoustic properties of the solo instruments. As Boulez explained to Häusler, the direction of acoustic sound movement in space was in part contingent on the specific physical trajectories traced by the material produced by different instruments.<sup>20</sup> In cases where the acoustic properties of an instrument or overall musical gesture traced specific curves, corresponding circles and bows could be created in the performance space by applying differing speeds to the transformation and acoustic transfer of electronic material in loudspeakers around the room. Varying methods for the spatial distribution of material could also be derived from acoustic properties such as dynamic, attack and, more importantly, decay. The instrumentation allowed for maximum differentiation in this kind of activity: in addition to the chamber ensemble, the texture employed solo pianists, a harp, a

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<sup>19</sup>Jameux, *Pierre Boulez*, 360-361; see also Boulez and Häusler, 'Über Répons', 10.

<sup>20</sup>Boulez and Häusler, 'Über Répons', 10-11.

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vibraphone and a cimbalom and glockenspiel, each of which combined the crucial element of percussive attack with a different rate of dynamic and decay.<sup>21</sup> 'With these different speeds and differing times [of decay]', Boulez maintained, 'one gets an impression that I find much richer than a normal circle or arc moving around to the left or around to the right.'<sup>22</sup>

Third, 'gate-circuits' were used to link the spatial dimension of the piece to its structural realisation in two ways. In the case where a transformation followed the acoustic curve pattern of a specific instrument or instrumental group, they could be used to project that same structural trajectory on to material generated by a separate group elsewhere in the performance space. In the case where a sound transformation had already occurred, by contrast, they could be used to cancel sounding structures at any time.<sup>23</sup> The effect of this procedure on the flexibility of the structure of *Répons* in performance was considerable. It allowed Boulez to produce and control the material that was being generated by the two-stage soloist/transformation process at will in the context of performance.

Of more consequence, however, was a fourth element: the

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<sup>21</sup>For a discussion of the instrumentation, see Jameux, *Pierre Boulez*, 359.

<sup>22</sup>'Mit diesen verschiedenen Geschwindigkeiten, mit diesen verschiedenen Zeiten auch bekommt man einen Eindruck, der für mich viel reicher ist als nur ein normaler Kreis oder eine Schleife linksherum, rechtsherum.' Boulez and Häusler, 'Über *Répons*', 11.

<sup>23</sup>Boulez and Häusler, 'Über *Répons*', 10.

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fact that gate-circuits integrated an 'aleatory' element within the context of an otherwise structurally fixed textural field. Although gate-circuits could be controlled manually, they could also be activated to effect sudden transfers from one to another acoustic or electro-acoustic sequence. As Boulez explained, he could 'flip-flop' between two sequences by following randomly generated patterns, a technique that would guarantee the consistent production of irregular structures.<sup>24</sup> This created spontaneous aleatory structural patterning against the background of a fixed field of possibilities. At the same time -- crucially -- it guaranteed that even the most unexpected electronically generated effects would be integrated into the larger texture on a fundamental structural level.<sup>25</sup>

### III

#### *Répons -- critical reception*

Transformation by sound-colour, through space or in speed and direction with the 4X and the Matrix 32, drew the texture of *Répons* together thematically by means of a complex network of procedures that had unprecedentedly expansive formal potential.<sup>26</sup> Additionally, it incorporated a number of

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<sup>24</sup>Boulez and Häusler, 'Über *Répons*', 10.

<sup>25</sup>Boulez and Häusler, 'Über *Répons*', 10.

<sup>26</sup>'Das Verfahren selbst birgt einen enormen Reichtum, wenn man bedenkt, daß hier auch die Struktur der Musik und das Verhältnis der Instrumente zueinander eine konstitutive Rolle spielen'; (The procedure carries enormous riches when one considers that here the musical structures and the relationship

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procedures of interest to Boulez that had yet to be realised in a viable indeterminate musical work. Where Boulez had expressed to Cage that it would be possible to control the chance procedures, facilities that had to be 'necessary' features in a musical structure in December 1951, in *Répons*, aleatory events essential to the preservation of structural vitality were produced by a strictly derivative network of relationships.<sup>27</sup> Where Boulez maintained that exploiting the functional potential of acoustic sound-objects in 'non-homogeneous sound space particularly as regards tempi and intervals' could achieve 'total variability and relativity of structure' in 'Alea' in 1957, *Répons'* electro-acoustic interface was easily supported by the 4X and Matrix 32.<sup>28</sup> And where 'Sonata, que me veux-tu?' in 1960 claimed that the Third Piano Sonata was an ideal Mallarméian musical work revealing the 'prismatic subdivisions of the Idea' that offered 'new possibilities of interpreting the work' to be 'discovered' over time', in *Répons*, formal relationships evolved multiply and fluidly through the transformation of thematic material.<sup>29</sup>

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between the instruments have a form-determining role).' Boulez and Häusler, 'Über *Répons*', 10.

<sup>27</sup>Pierre Boulez, Document 35, in Jean-Jacques Nattiez, ed. *The Boulez-Cage Correspondence*, with Françoise Davoine, Hans Oesch and Robert Piencikowski, ed. and trans. Robert Samuels (Cambridge, 1993), 112-127, p. 112. See also Chapter One, page 42.

<sup>28</sup>Pierre Boulez, 'Alea', in Pierre Boulez, *Stocktakings from an Apprenticeship*, collected and presented by Paule Thévenin, trans. Stephen Walsh (Oxford, 1991), 26-38, p. 35.

<sup>29</sup>Boulez, 'Sonata, que me veux-tu?', *Orientations*, 143-154, pp. 146, 148.

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This single work, it seemed, 'redeemed' Boulez's troubled indeterminate project. At the same time, it provided justification for his tendency to withdraw or abandon his compositions, while providing compelling evidence to support the belief in the distinctness of his independent indeterminate aesthetic.

Estimations of *Répons'* aesthetic and significance after 1981 are markedly consistent in corroborating this reading. Two accounts have been especially influential: the 1989 volume *Jalons (pour une décennie)* and the 1993 *Le Combat de Chronos et d'Orphée*, both of which were written and/or edited by Boulez and Nattiez.<sup>30</sup> These books are particularly relevant for bringing two articles on *Répons* into general circulation -- 'Le Système et l'idée', written originally by Boulez in 1986, and 'Boulez à l'âge postmoderne: le temp de *Répons*' by Nattiez.<sup>31</sup> A close examination of these articles demonstrates the importance of *Répons* to accounts of his indeterminate aesthetic in the later twentieth century. In particular, the essays show marked similarities in their evaluation of the symbolic significance of *Répons'* design and the intimate

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<sup>30</sup>Pierre Boulez, *Jalons (pour une décennie): dix ans d'enseignement au Collège de France (1978-1988)*, ed. Jean-Jacques Nattiez (Paris, 1989). This book will subsequently be referred to as '*Jalons*'; Nattiez, *Le Combat de Chronos et d'Orphée*.

<sup>31</sup>Boulez, 'Le Système et l'idée', *Jalons*, 316-390; originally published in *InHarmoniques*, 1 (December, 1986), 62-104; Nattiez, 'Boulez à l'âge postmoderne: le temps du *Répons*', *Le Combat de Chronos et d'Orphée*, 159-217. For a related study of *Répons*, see Alastair Williams, '*Répons*: Phantasmagoria or the articulation of space?', in Anthony Pople, ed., *Theory, Analysis and Meaning* (Cambridge, 1994), 195-210.

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structural connection between the concept of the work and its practical realisation in performance.

### *III.1. Boulez, 'Le Système et l'idée'*

Discussions of a symbolic post-serial structural universality persisted in Boulez's writings after his dissociation from Cage's method of 'absolute chance' in December 1951, and the connection between past and present in his general aesthetic is emphasised in 'Le Système et l'idée'.<sup>32</sup> The main points of the essay are familiar: they amount to a late summary of the central tenets of the philosophy of musical meaning that we have seen reiterated in Boulez's writings in one context or another since the early 1950s. After a period, stretching from the late 1960s to the early 1980s, in which Boulez wrote little and appeared in print principally in interviews, however, 'Le Système et l'idée' is noteworthy, in part for marking Boulez's re-entry into the general critical dialogue.<sup>33</sup>

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<sup>32</sup>Boulez, Document 35, 112. The publication of 'Le Système et l'idée' in *Jalons* marked the second appearance of Boulez's text in three years; it was published in the French journal *InHarmonique* in 1986 before being reissued for the 1989 Boulez-Nattiez volume. The 1986 publication of the article had a considerable impact on Boulez scholarship -- it is cited in a number of publications on the composer and on *Répons* towards the end of the 1980s and has sustained a strong critical presence in texts on the subject subsequently. See in particular Célestin Deliège, 'Moment de Pierre Boulez: sur l'introduction orchestrale de *Répons*', in *Répons-Boulez*, ed. Dominique Jameux (Paris, 1989), 45-69, p. 46; Jean-Jacques Nattiez, '*Répons* et la crise de la "communication" musicale contemporain', in *Répons-Boulez*, 23-43, p. 29; Williams, '*Répons: phantasmagoria*', 199.

<sup>33</sup>On the issue of the lack of texts by Boulez after *Pli selon pli*, see Jean-Jacques Nattiez, 'On Reading Boulez', *Orientations*, 11-28, p. 15.

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Boulez's text is based on the belief that 'the musical idea does not exist as an indefinite absolute, outside of a system', but rather that 'it is entirely conditioned by [a system], in its profile, its function and its development'.<sup>34</sup> In the course of Boulez's exploration into the '*uncertainties* that link system and idea', he explains the move to indeterminacy in post-serial structures as part of a single proposition: that the rejection of functional harmony in music before the Second World War led to the development of a new work-concept in which perception became a valid structural attribute.<sup>35</sup>

The majority of 'Le Système et l'idée' is taken up with an explanation of how both the Austro-German and the French musical traditions had developed increasingly conceptual alternative musical systems since the end of the nineteenth century, and how those developments were brought to an advanced state in the fluid serial structures of Webern. 'The evolution of these two lines' -- Wagner-Mahler-Schoenberg and Mussorgsky-Debussy-Stravinsky -- 'however distant they may have appeared to be', Boulez maintained, 'is based on a single phenomenon: the rejection of established function as a consistent and coherent basis of language'.<sup>36</sup>

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<sup>34</sup>(1) l'idée musicale n'existe pas dans un absolu vague, en dehors d'un système'; (2) 'elle est entièrement conditionnée par lui, dans son profil, dans ses fonctions, dans ses prolongements'. Boulez 'Le Système et l'idée', 321.

<sup>35</sup>'*incertitudes* qui relie le système à l'idée', (italics, Boulez). Boulez, 'Le Système et l'idée', 318.

<sup>36</sup>'L'évolution de ces deux lignées aussi distantes qu'elles

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Where the first line of development created 'multi-directional chords', the second used 'essentially chromatic aggregates in which functionality is put in doubt from the beginning owing to the tension created in the very heart of the harmonic object'.<sup>37</sup> These composer, Boulez suggested, created musical networks in which 'there is no longer strictly speaking a system: the idea is omnipotent'; in these structures, which mark a reversal in the historical relationship of structural function to aesthetic system, he maintained, 'the less there is a system, the more there is free will, the more perception must go through reflection ... to be capable of appreciation'.<sup>38</sup> In Webern's work, in particular from Op. 21 on, this situation was brought to its logical conclusion: 'the idea coincides completely with the organisation of the system'. As Boulez stated (quoting Webern), rather than derive the work-concept secondarily from the activity inherent in its functional material, 'the series ... is *"the result of an idea that is related to an intuitive vision of the work conceived as a*

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aient pu paraître se base donc sur un même phénomène: le reject de fonctions établies comme base consistante et cohérente du langage'. Boulez 'Le Système et l'idée', 328.

<sup>37</sup>(1) 'accords multidirectionnels'; (2) 'des agrégats essentiellement chromatiques ... la fonctionnalité est mise en doute dès le départ, à cause des tensions créées à l'intérieur même de l'objet harmonique'. Boulez, 'Le Système et l'idée', 327, 328.

<sup>38</sup>(1) 'Il n'y a plus de système à proprement parler: l'idée est toute-puissante'; (2) 'moins il y a de système, plus il y a de libre arbitre, plus la perception devra passer par la réflexion ... pour être en mesure d'apprécier'. Boulez, 'Le Système et l'idée', 333.

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whole"'.<sup>39</sup>

This idea that the musical work is a virtual object conceived in its intuitive entirety has specific implications for a reading of the role of chance and randomly derived material in musical structures in the post-war period. As Boulez states, 'the work is a virtual model from which one can derive actual copies at will'; in this situation, 'system and idea keep referring back to one another in a game of seesaw between the finite and the infinite'.<sup>40</sup> This model does not trade on the structural potential of chance, Boulez maintains, but rather on a refusal to abolish chance, and on the exploitation of the open potential of a work-concept in which the 'idea' of the work is considered to be completé but indistinct and waiting to be revealed in performance. As Boulez writes: 'the idea is captured, fixed in a musical being, but the uncertainty of its manipulation remains'; into this fixed, potential state, 'free will intervenes until the last moment, even if it is rather disciplined, tamed, reduced to a subordinate task'.<sup>41</sup>

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<sup>39</sup>'L'idée coïncide totalement avec l'organisation du système'; (2) 'la série ... est "le résultat d'une idée qui est en relation avec une vision intuitive de l'oeuvre conçue comme un tout"' (italics, Boulez's). Boulez, 'Le Système et l'idée', 363. (Boulez does not cite Webern.) For Webern on this notion, see Anton Webern and Willi Reich, *Wege zur neuen Musik* (Vienna, 1960).

<sup>40</sup>(1) 'L'oeuvre est un modèle virtuel dont on peut tirer à volonté des exemplaires réels'; (2) 'le système et l'idée se renvoient l'un à l'autre dans un jeu de bascule entre fini et infini'. Boulez, 'Le Système et l'idée', 379.

<sup>41</sup>(1) 'L'idée est saisie, fixée dans un être musical, mais l'incertain de la manipulation demeure'; (2) 'le libre arbitre

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Boulez's explanation of a musical work recalls his description of a three-part musical work in his interview with Häusler the previous year. At the same time, however, it marks a crucial point in the reception of Boulez's work-concept after *Répons*: the point at which Boulez's essentially separate musico-structural and aesthetic models of musical meaning merge, reversing his reading of chance as a form-determining element and replacing it with the notion that the concept of the work overrides its specific realisation in performance. In this explanation, chance is preserved as an essential element in executing the work in performance, but its functional status is subordinated, rendering performance a feature that is secondary to the fundamental concept of the work. Significantly, this concept then is seen to exist as a fixed variable object derived from the composer's will.

Boulez's most concise explanation of how the work is 'fixed in a musical being' occurs in 'Le Système et l'idée' as part of a discussion on how the interplay of varying material effects an 'amorphous', 'non-directional' structure. In a situation in which the composer has defined a system of intervals, densities, durations, silences and attacks, each with a different periodicity, Boulez suggests, these elements will combine in a diverse network and create objects belonging to the same family in constant evolution that can be left to sound in a continuous succession without intervention from the

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intervient jusqu'au dernier moment, même s'il est passablement discipliné, apprivoisé, réduit à une tâche subalterne'. Boulez, 'Le Système et l'idée', 379.

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composer. Such structures do not require constant and active listening since the work 'is equal to itself at each of its points and since strictly speaking there is no evolution in its nature'.<sup>42</sup> Rather, he states, 'the systems of application work to shape the raw material on the level of the isolated element as well as on the level of the ensemble of elements that condition the form directly'.<sup>43</sup>

If this model shows the system of application rather than its practical combinations creating the form of the work directly, it would seem to follow that the interaction of the musical elements in performance becomes less essential to the idea of the work and the relationship of the work-concept to the directive of the composer's will. Boulez addresses this issue indirectly. Although he states that there is no real structural 'evolution' of the musical work in performance, he does suggest that perception can act on sounding material to differentiate its character and to effect the realisation of its detailed variations.

Two types of perception apprehend the differing levels of activity of musical material, he suggests: global, intuitive or 'passive' perception; and precise, analytical or 'active' perception. 'Passive' perception apprehends the totality of

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<sup>42</sup>'Puisqu'elle est égale à elle-même en chacun de ses points et qu'il n'y a pas à proprement parler d'évolution dans sa nature'. Boulez, 'Le Système et l'idée', 382.

<sup>43</sup>'Les systèmes d'application s'emploient pour façonner le matériau brut au niveau de l'élément isolé comme au niveau de l'ensemble des éléments, qui conditionné directement la forme'. Boulez, 'Le Système et l'idée', 382.

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the composition without completely taking in the specificities of its contents, while 'active' perception is 'forged inside the musical discourse'.<sup>44</sup> Together, the two kinds of perception can 'assist in the continuation of the work in its successive phases'.<sup>45</sup> In association with a second listener-specific element, memory, perception can become a means of exchanging information within a structural hierarchy in a composition, while at the same time contributing to the definition of that hierarchy. As Boulez explains: 'thus, the system refers to the idea that transforms the system that recreates the idea, and so it happens endlessly in a spiral of development'; the relationship between the two implies 'a perpetual evolution analogous to an expanding universe', and it exists as a 'cycle of exchanges, if not unpredictable, at least not entirely predictable, [where] there is a dialectic between rule and accident'.<sup>46</sup>

### *III.2. Nattiez, 'Boulez à l'âge postmodern: le temps du Répons'*

In a detailed exposition of modern and postmodern trends in music and how they intersect with the larger dimension of an

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<sup>44</sup>'Se nouent à l'intérieur du discours musical'.. Boulez, 'Le Système et l'idée', 388.

<sup>45</sup>'Aider à suivre l'oeuvre dans ses phases successives'. Boulez, 'Le Système et l'idée', 388.

<sup>46</sup>(1) 'Ainsi, le système renvoie à l'idée qui transforme le système qui recrée l'idée, et ainsi en va-t-il sans cesse dans la spirale du développement'; (2) 'une perpétuelle évolution, indique l'analogie avec un univers en expansion; (3) 'cycle d'échanges, sinon imprévisible, du moins pas entièrement prévisible, il y a dialectique de la loi et de l'accident'. Boulez, 'Le Système et l'idée, 389.

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established historical continuum, Nattiez makes *Répons* the centrepiece of an investigation into the crisis in musical communication that arose after the Second World War.<sup>47</sup> Framing his discussion with a critique of the 1985 study by Pierre-Michel Menger, *Le Paradoxe du musicien*, Nattiez initially addresses the difficulty in balancing musical modernism, which strives for a universal system, with postmodernism, which seeks multiplicity and the juxtaposition of widely accessible styles.<sup>48</sup> The difficulty with these historical approaches -- and the challenge to the composers who must balance them in the post-war period -- Nattiez suggests, is that each lacks a 'classical dimension': neither communicates directly through an object where the discrepancy between its aesthetic and its poïetic (*poïétique*; creative production) is minimal; neither expresses a unified 'style' comparable to that between harmony and structure in the works of Haydn, Mozart and Beethoven; and neither displays a level of accomplishment in the matter of invention of the sort displayed in Bach's Passions or in *Tristan*.<sup>49</sup>

In investigating an historical period that lacked these direct modes of aesthetic communication, Nattiez outlines how

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<sup>47</sup>Nattiez's discussion draws on his earlier text '*Répons et la crise de la "communication" musicale contemporain*'. The 1989 text was originally given as a talk to the colloquium 'Musical Composition and Perception' at the University of Geneva in 1987.

<sup>48</sup>Pierre-Michel Menger, *Le Paradoxe du musicien* (Paris, 1985); Nattiez, 'Boulez à l'âge postmoderne', 160-161.

<sup>49</sup>Nattiez, 'Boulez à l'âge postmoderne', 162.

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Menger turned to the study of cultural 'determinations' to explain the move to open form in composers of the post-war era. From a Hegelian perspective, which presupposes the intervention of an inspired individual (*individu génial*) or a greater force underlying progressive historical development, serial technique is the inevitable outcome of tonal music.<sup>50</sup> At the point where it began to become clear that serial logic failed the basic needs of perception, composers at the centre of the movement -- Nattiez suggests especially Boulez -- 'are obliged to rewrite history to justify it retrospectively'.<sup>51</sup> As part of this retrospective justification, he states, '"mobility", that is to say resorting to aleatory techniques, is presented as the solution to the difficulties of the generalised series'.<sup>52</sup>

Menger's reading of the move to open form after serialism becomes a springboard for Nattiez's discussion of Boulez's post-serial open-form project. Rather than simply embody a 'rewriting' of history, Nattiez is convinced that Boulez's move to embrace open form on the basis of a serial impulse is part

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<sup>50</sup>This is also Leibowitz's opinion. See René Leibowitz, *Introduction à la musique de douze sons: les Variations pour Orchestre, Op. 31, d'Arnold Schoenberg* (Paris, 1949); and Wolfgang Ludewig, 'René Leibowitz und die Darmstadter Schule' in *Verfemte Musik: Komponisten in den Diktaturen unseres Jahrhunderts* (Frankfurt, 1995), 343-348.

<sup>51</sup>'[Ils] sont obligés de récrire l'histoire pour la justifier rétrospectivement'. Nattiez, 'Boulez à l'âge postmoderne', 164.

<sup>52</sup>'La "mobility", c'est-à-dire le recours aux techniques aléatoires, est ... présentée comme la solution aux difficultés de la série généralisée'. Nattiez, 'Boulez à l'âge postmoderne', 164.

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of a fundamental aspect of the post-war historical condition. Nattiez explains this development in terms of his belief in a truism about the state of musical language, the growth of what he calls 'parametrisation' (*paramétrisation*; the idea of an intrinsic aesthetic potentiality in a system) in its process of evolution.<sup>53</sup>

This development marks the introduction of a tangible philosophical dimension to musical structures after serialism. In Boulez's works, Nattiez asserts, it occurred as the result of his appropriation of two characteristics of his historical condition: his extraction of a system of abstract principles implying the development of a new, homogeneous sound universe out of Webernian serialism; and his fulfilling of the Hegelian 'necessity' of his historical moment, the creation of a 'poïetic space' out of the combined influence of Webern, Messiaen and Cage.<sup>54</sup> The development of open form out of serialism was not a retrospective aesthetic construction; rather, Nattiez concludes, it was the act of a composer deriving his works and their methodology out of his historical moment, and responding to the unavoidable artistic impulse to give that moment aesthetic form.

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<sup>53</sup>Nattiez, 'Boulez à l'âge postmoderne', 170. As Nattiez notes, the term originates in the aesthetic theory of Leonard B. Meyer, in particular in *Music, the Arts and Ideas* (Chicago and London, 1967/94) and 'Towards a theory of style' in Berel Lang, ed., *The Concept of Style* (Philadelphia, 1967), 3-44. The idea is also discussed at length in Nattiez, 'Répons et la crise de la "communication" musicale contemporain', 23-26.

<sup>54</sup>Nattiez, 'Boulez à l'âge postmoderne', 171-172.

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Against the background of this clearly defined symbolic aesthetic drawn from an historical continuum, *Répons* enters Nattiez's discourse as part of his discussion of crisis in musical "communication" in the period of total serialism between 1951 and 1953. He begins with a premise that binds each of his subsequent statements about the link between structure and aesthetic in *Répons*: that the subtleties of the system underlying total serialism are imperceptible because its objectives are purely poïetic.<sup>55</sup> The belief that serialism effected an evolution in the status of aesthetic forms in the post-war period -- and in particular that the significance of that new status was imperceptible -- provides Nattiez with a central platform for a two-part discussion: first, on the connection between structure and aesthetic in *Répons*; second, on the association of the work to its own 'historical moment'.

On the issue of the connection between structure and aesthetic in *Répons*, Nattiez's conclusions are dictated by the assumption that structural details have direct symbolic significance. He states that *Répons* is part of both a general historical continuum and 'la trajectoire boulezienne', and that in each context it marks 'the first response to his quest for

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<sup>55</sup>Nattiez, 'Boulez à l'âge postmoderne', 176. For a discussion of serialism, Boulez and Adorno, see Alastair Williams, 'Répons: phantasmagoria or the articulation of space?', 197-198. For Adorno on the issue, see Theodor W. Adorno, 'The Aging of the New Music', trans. R. Hullot-Kendor and F. Will, *Telos*, 77 (1988), 95-116; and Adorno, *The Philosophy of Modern Music*, trans. Anne G. Mitchell and Wesley V. Blomster (London, 1973), especially pp. 32-37 and 95-104. See also the Introduction to this study, pp. 15-19.

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totality'.<sup>56</sup> Three principal structural facts give it this totality-affirming status: that 'the work successfully achieves a fusion between the instrumental and the electronic'; that 'after *Pli selon pli*, it strives to occupy the entire temporal space of a concert'; and that, 'it succeeds in occupying, through the spatialisation of sound, the entire space of the room'.<sup>57</sup> *Répons* achieves a 'symbolic totality', Nattiez implies, in its representation of the moment at which experiments in electro-acoustic sound, temporal structure and spatialisation reached a point of conclusion -- the moment, in short, when the central concerns of the post-war period were brought together in a single viable work.

The idea that the use of these procedures in a single composition is symbolically significant connects Nattiez's account of the structural importance of the piece to its role in defining the historical continuum of Boulez's post-war aesthetic, while at the same time expanding on Boulez's own summary of his historical precursors with the claim that the *l'espace poïétique* of *Répons* was rooted in part in Webern and in part in Messiaen and Cage. We saw in Section II that Boulez was aware that the rhythmic structuring and the focus on indeterminate sound complexes in sections of *Répons* was

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<sup>56</sup>'Une première réponse à sa quête de la totalité'. Nattiez, 'Boulez à l'âge postmoderne', 185.

<sup>57</sup>'L'oeuvre réussit la fusion de l'instrumental et de l'électronique'; (2) 'après *Pli selon pli* elle tend à occuper tout l'espace temporel d'un concert'; (3) 'elle réussit à occuper, par la spatialisation sonore, tout l'espace de la salle'. Nattiez, 'Boulez à l'âge postmoderne', 185.

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reminiscent of Cage, in particular his work for prepared piano. Nattiez outlines these similarities, but differentiates clearly between Boulez's work and 'Cage's research into the sphere of sounding material and his general direction as a composer'.<sup>58</sup>

At the time Boulez met Cage, Nattiez asserts, he was looking for 'an alternative "medium of discourse"'; his solution in the 1950s was to create an alternative that incorporated indeterminacy while at the same time maintaining the premise that 'there can be no disjunction between material and invention, between the structure of the works and the expression of its sounding substance'.<sup>59</sup> Although aspects of *Répons* recalled Cage's work thirty years on, Nattiez maintained, it was nevertheless in '*un sens autre*' -- with a difference that had been marked in their work from the beginning of the post-war period. Where Cage's structures may have produced autonomous musical objects, they did so only as a result of the dictates of chance. Boulez's work in the 1950s, like the structure of *Répons*, marked a crucial difference: in it, 'new material integrates into a syntax that is the result of compositional will'.<sup>60</sup>

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<sup>58</sup>'La recherche de Cage dans le domaine du matériau sonore et sa démarche en tant que compositeur'. Nattiez, 'Boulez à l'âge postmoderne', 185-186.

<sup>59</sup>(1) 'Un autre "support du discours"'; (2) 'il ne peut y avoir d'hiatus entre le matériau et l'invention, entre la structure des oeuvres et la substance sonore où elle s'exprime.' Nattiez, 'Boulez à l'âge postmoderne', 186.

<sup>60</sup>'Le matériau nouveau s'intègre à une syntaxe résultant d'une volonté compositionnelle'. Nattiez, 'Boulez à l'âge postmoderne', 186.

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#### IV

If Boulez's (and with it Nattiez's) vision of 'l'oeuvre-spirale, l'oeuvre-labyrinthe' emphasises the symbolic potential of the three-part design of an ideal indeterminate musical work familiar from his 1985 interview with Häusler, it does so within historical context -- an historical context, Nattiez makes clear, that incorporates Boulez's debt to the past without sacrificing his claim to the most resilient contemporary musical vision. This vision, it would seem, was the culmination of a number of trends established early in Boulez's development. The idea of a 'spiral' of musical activity passing through varying thematic levels in the performance space in *Répons*, Boulez stated to Häusler, was derived from the 1958 composition *Poésie pour pouvoir*.<sup>61</sup> Musical development following the course of a 'labyrinth' or 'maze' recalls his 1960 account of the Third Piano Sonata.<sup>62</sup> And Boulez's desire to create 'a multi-dimensional space which takes specific account of the ear's capacity to adjust' -- one that could 'be happily expressed through the real multiple dimensions of stereophonic space' was expressed as early as '"At the Edge of a Fertile Land"' in 1955.<sup>63</sup>

In the period after *Répons*, Boulez maintained that the

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<sup>61</sup>See Boulez and Jameux, 'Interview', 201.

<sup>62</sup>Boulez, 'Sonata, que me veux-tu?', 153.

<sup>63</sup>Pierre Boulez, '"At the Edge of a Fertile Land" (Paul Klee)', *Stocktakings*, 158-172, p. 163. See the discussion of electronic music in Chapter One above.

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relationship between structural system and conceptual idea was intimate, creating a musical work in which 'chance is abolished in the very same moment when [the work] brings it back to life in order to exist'.<sup>64</sup> *Répons* appeared to meet those criteria in a powerful way. A composition in which 'musical structure and the instrumental conditions play constitutive roles', provided a clearly articulated practical realisation of Boulez's ideal indeterminate musical work that accommodates the philosophical readings in 'Le Système et l'idée' and 'Boulez à l'âge postmoderne'.<sup>65</sup>

Yet the comparison of Boulez's to Nattiez's text raises questions, in particular about the discrepancy in their assessment of the musical inheritance of composers of the post-war avant-garde. In his account of the historical justification for indeterminate structures after serialism in the text, Boulez acknowledged the destruction of harmonic function and highlighted Webern's advances in serial function, but failed to mention the two composers Nattiez said were essential to his 'poïetic space': Messiaen and -- more importantly -- Cage.<sup>66</sup> It is possible to read this omission as a function of Boulez's confidence. We know that he considered Messiaen's influence on his work to have been

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<sup>64</sup>'Le hasard s'abolit par l'oeuvre dans le temps même où elle le ressuscite pour pouvoir exister'. Boulez, 'Le Système et l'idée', 390.

<sup>65</sup>'Die Struktur der Musik und das Verhältnis der Instrumente zueinander eine konstitutive Rolle spielen'. Boulez and Häusler, 'Über *Répons*', 10.

<sup>66</sup>Boulez, 'Le Système et l'idée', 326.

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formative but limited; Cage's work may also have seemed too peripheral to the greater purpose of *Répons* to bear mention, even if, as Nattiez has pointed out, Boulez was aware of the parallels between the last section of *Répons* and his early works for prepared piano.<sup>67</sup> Two pieces of evidence shed light on these evaluations of the success of the *Répons* aesthetic and of Boulez's omission of Cage: the nature of other *Répons* criticism published in the late 1980s; and other accounts of a viable indeterminate aesthetic in earlier texts by Boulez.

#### *IV.1. Répons criticism after 1986*

A group of essays titled *Répons-Boulez* published in 1989 is the most authoritative and broad-ranging publication on the composition produced in the twentieth century. *Répons-Boulez* corroborates each of the central claims about the manifestation of Boulez's symbolic aesthetic of indeterminacy in *Répons* by the composer and Nattiez examined in detail above. One of the essays, 'L'Ordinateur et l'écriture musicale', reiterates how, with the 4X and the Matrix 32, 'composers can much more easily mix the computer with other instruments and eliminate a fairly artificial barrier [between the two]'.<sup>68</sup> In uniting electronic and acoustic sound, it suggests, the composer can 'traverse an unknown musical terrain while writing for known

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<sup>67</sup>Nattiez, 'Boulez à l'âge postmoderne', 185-186.

<sup>68</sup>'Les compositeurs peuvent beaucoup plus aisément mêler l'ordinateur aux autres instruments et éliminer une barrière assez artificielle'. Andrew Gerzso, 'L'Ordinateur et l'écriture musicale', *Répons-Boulez*, 71-81, p. 73.

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instruments'; 'this contrast between "known" and "unknown" will be explored in establishing a variety of connections, both near and far, between the passages written for instruments and their transformation.'<sup>69</sup> A second essay in the volume, 'Moment de Pierre Boulez: sur l'introduction orchestrale de *Répons*', provides a detailed discussion of the first seven minutes of the piece, focusing on how the initial basic chordal references create a perception-based system of differentiation that holds the structure together. Listeners will feel the consistency in these relationships even in their absence, it states, owing to the fact that 'in *Répons*, the harmony/timbre complex is one of the dimensions that will prove to be the morphological constant that is the most apt for defining the syntax'.<sup>70</sup>

A third essay, 'Pierre Boulez, l'oeuvre singulière', places the piece -- and with it, Boulez's indeterminate aesthetic -- in the context of the larger history of his works and associations, while also implying a connection to other studies of apparently similar aesthetic proportions, such as Umberto Eco's literary study *The Open Work*.<sup>71</sup> Each of these

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<sup>69</sup> (1) 'Parcourir un terrain musical inconnu, tout en écrivant pour les instruments connus'; (2) 'ce contraste entre "connu" et "inconnu" sera exploré en établissant une variété de rapports, proches et lointains entre les passages écrit pour instruments et leur transformation.' Gerzso, 'L'Ordinateur et l'écriture', 73.

<sup>70</sup> '[D]ans *Répons*, le complexe harmonie/timbre est l'une des dimensions qui va se révéler la constante morphologique la plus apte à définir la syntax'. Célestin Deliège, 'Moment de Pierre Boulez: sur l'introduction orchestrale de *Répons*', *Répons-Boulez*, 45-69, pp. 51, 53.

<sup>71</sup> Dominique Jameux, 'Pierre Boulez, l'oeuvre singulière', *Répons-Boulez*, 15-21, p. 18; Umberto Eco, *The Open work*

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texts confirms the favourable reception of *Répons* in the 1980s and corroborates Boulez's claims about the connection between its structure and aesthetic. At the same time, this collection also marks a crucial point in the critical reception of *Répons*: the stage when Boulez's accounts of the structure and significance the work were fleshed out in other specialised studies, giving *Répons* a particular character as an historical artifact at the same time as it began to gain specific currency in the wider context of post-war musical criticism.

The findings of these studies are in keeping with what we know about the piece, and it would appear both viable and justifiable that *Répons* should enter the critical dialogue on post-war music in a corroborated version of Boulez's exposition of the structural, aesthetic and historical significance of the work. Yet the list of contributors to the 1989 publication reads like an assembly of the principal champions of Boulez's post-war project: the essays mentioned were written by Andrew Gerzso, Célestin Deliège and Dominique Jameux, respectively. The fourth essay that completed the collection was a later publication of the 1986 lecture by Nattiez, '*Répons et la crise de la "communication" musical contemporain*' -- the same text that reappeared as '*Boulez à l'âge postmoderne: le temps de Répons*' in Nattiez's book *Le Combat de Chronos et d'Orphée* in 1993. That each of these writers collaborated actively with Boulez in the 1970s and 1980s -- and in the case of Nattiez, continues to work with him today -- does not undermine their

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(London, 1985)

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validity as contributors to Boulez's own evaluation of the significance of *Répons*.<sup>72</sup> It does suggest, however, that it is difficult to dissociate the initial critical reception of the piece from the composer's aesthetic vision of the work, or from the 'institutionalised' focus of the *Répons-Boulez* project, which was published by IRCAM.<sup>73</sup>

Although *Répons-Boulez* does not in itself provide insight into Boulez's omission of the influence of Messiaen and Cage in 'Le Système et l'idée' in 1986, it does strongly suggest that few independent studies exist that connect Boulez's mature indeterminate aesthetic to the prominent paradigm of *Répons*. Nattiez's assessment of the difference between Boulez's concern to preserve 'compositional will' and Cage's acceptance of structures that enter his works by chance, similarly, has undergone little independent assessment. The comparison of the claims in 'Le Système et l'idée' with Boulez's earlier texts goes some way to redressing this imbalance. In particular, it

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<sup>72</sup>Much of the Gerzso article is drawn from the text 'Computers in Music', published in 1988 by Gerzso and Boulez; Deliège's article cites Boulez's texts *On Music Today (Penser la musique aujourd'hui* [Paris, 1963]) and 'Le Système et l'idée' (Deliège, 'Moment de Pierre Boulez', 45-46), while at the same time drawing on the aesthetic ideas outlined in his conversations with the composer (Boulez and Deliège, *Conversations avec Célestin Deliège*); Jameux's 1974 interview with Boulez touched on many of these ideas in association with *Poesie pour pouvoir* (Jameux, 'Pierre Boulez: sur *Polyphonie X* et *Poesie pour pouvoir*', *Musique en jeu*, 16 [November, 1974], 33-35) while his 1984 book dealt directly with *Répons* (Jameux, *Pierre Boulez*, 359-363); Nattiez's 1985 introduction to Boulez's collection *Orientations*, also discusses *Répons* similarly (Nattiez, 'On Reading Boulez', especially pp. 24-25).

<sup>73</sup>For an opinion on the significance of *Répons* to the legitimisation of IRCAM, see Born, *Rationalising Culture*, 91.

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provides a wider contextual background against which to assess Boulez's omission of the influence of Cage in his 1986 text and the independence of *Répons* as a mature indeterminate electro-acoustic compositional vision.

#### *IV.2 Early texts by Boulez*

We saw in Section III that Boulez's account in the mid-1980s of the intimate relationship between 'system' and 'idea' in post-war music was in part historical summary and in part aesthetic extrapolation.<sup>74</sup> Historically, he outlined the importance of

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<sup>74</sup>It is worth pointing out that these ideas are especially relevant to texts not examined in detail in this study. The series of lectures on subjects such as time, form and serialism given by Boulez in Darmstadt in 1960 and 1961, published later in part in the 1963 volume *On Music Today*, for example, provide interesting reading with respect to Boulez's aesthetics in the 1980s, as do a scattering of other mid-period essays, such as the text 'Sound, word, synthesis', published in *Melos* in 1958. [Boulez's principal Darmstadt lectures are: 'Putting the phantoms to flight', *Orientations*, 63-83, originally published as 'Nécessité d'une orientation esthétique', *Mercur de France*, 4-5 (April-May, 1964), 623-639 and 110-122; 'Time, notation and coding', originally titled 'Temps, notation et code'; 'Form', *Orientations*, 90-96; 'Towards a conclusion', *Orientations*, 97-99, originally titled 'Conclusion partielle'; 'Aesthetics and the fetishists', *Orientations*, 31-43, originally published as 'L'Esthétique et les fétiches', *Panorama de l'art musical contemporain*, ed. C. Samuel (Paris, 1962). Other relevant essays are 'Poetry -- centre and absence -- music', [see Chapter Three, Section III]; 'Sound, Word, Synthesis', *Orientations*, 177-182, originally published as 'Son, verbe, synthèse', *Melos*, 25.10 (October, 1958), 310-313.] These texts offer considerable scope for further discussion on issues related to the findings of this study. Some of these directions are addressed below in the Conclusion. The Darmstadt lectures and *On Music Today* in particular fill in details of an interesting sub-plot in Boulez's post-war project. These texts show him writing as an important and popular teacher and lecturer in the late 1950s and early 1960s, outlining his belief in the importance of a serial model of musical unity at the same time as he was writing on more contentious issues such as 'taste' with notable confidence elsewhere. [See especially 'Taste: "the spectacles worn by

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a new means of creating unity that was based on a piece-specific network of concept and structure. Rather than exist 'as an indefinite absolute outside of a system', Boulez wrote, the musical idea 'is entirely conditioned by it, in its profile, its function and its development'.<sup>75</sup> Composers before the Second World War, he maintained, created works without a system; rather, he suggested, 'the "idea" is omnipotent'.<sup>76</sup> The relationship of system to idea contingent on the interaction of perception and free will was drawn, Boulez maintained, from the compositions of Webern. In Webern the idea of a musical work was the same as the organisation of a system. The result was a musical work that existed as an idea -- an idea as an intuitive vision of the composition conceived as a whole.<sup>77</sup>

Boulez raised each of these ideas decades before the composition of *Répons*, however, a fact with specific implications for his accounts of the piece and of its relationship to its compositional precursors. In 'Possibly...' in 1952, for example, Boulez called serialism 'a boiling over of musical problems which have been simmering since 1910' and

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reason"?' , *Orientations*, 44-62, originally published as 'Le Goût et la fonction' (Darmstadt, 1961) *Tel quel*, 14-15 (1963), 32-38 and 82-94. Although *On Music Today* was published in 1963, it was the result of an idea for a technical study into the broader application of serial structures that Boulez mentioned in a letter to Cage as early as 1950. See Boulez, Document 26, p. 86.]

<sup>75</sup>Boulez, 'Le Système et l'idée', 321.

<sup>76</sup>Boulez, 'Le Système et l'idée', 333.

<sup>77</sup>Boulez, 'Le Système et l'idée', 363.

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referred to the 'functional distribution of intervals' as 'a crucial moment in the history of music' that was brought to its fullest articulation in the compositions of Webern.<sup>78</sup> He wrote of the 'universe' of the work in a serial composition as an overriding idea defined by the 'network of possibilities' of its basic material -- the same network by which the composer could '[take] possession of this universe, which remains undifferentiated up to the moment we choose our series'.<sup>79</sup> The relationship between a serial concept and its structure in performance -- what in 1986 he called its 'idea' and its 'system' -- would be connected through 'similarity of fields' that allowed 'more or less continuous play' on the properties in ideal serial structures, he predicted in 1952.<sup>80</sup>

In 'Possibly...', Boulez wrote that these ideal serial textures would evolve through 'transformations' of 'cells of musical material', while the serial foundation of those cells would act to '[regulate] permutations of sound objects that are in some sense fixed'.<sup>81</sup> His discussion of the 'possibility of creating non-tempered sound spaces' that promised to achieve

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<sup>78</sup>Pierre Boulez, 'Possibly...', *Stocktakings*, 111-140, pp. 113, 114. The idea of a 'functional distribution' of musical elements is significant: it was Schoenberg's 'profound misunderstanding of serial FUNCTIONS' (Boulez's emphasis) that he most derided in the 1952 essay 'Schoenberg is dead', *Stocktakings*, 209-214, p. 213. Originally published as 'Schoenberg est mort', *Score*, 6 (February, 1952), 18-22. See also the Introduction to this study, note 20.

<sup>79</sup>Boulez, 'Possibly...', 116-117.

<sup>80</sup>Boulez, 'Possibly...', 119.

<sup>81</sup>Boulez, 'Possibly...', 119, 121, 130.

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'individuality' with advanced serial procedure, complicates this image, however, in particular for the claims it made about the goal of serial structures: a situation in which it would be possible for temporal repetitions to create a 'global, hierarchical neutrality'.<sup>82</sup> The complexity of such structures, Boulez wrote, would create a context that would 'ensure, at each occurrence of any given note, a different character for that note' -- a situation that Boulez called a 'reversibility between cause and effect' that is 'worth stressing'.<sup>83</sup> The similarity of these ideas to those outlined in 'Le Système et l'idée' over forty years later is striking. In 1986, however, Boulez omits a crucial detail: that in 1952, he stated that they were procedures characteristic of the work of Cage.<sup>84</sup>

V

*Post-Webernian musical structures: precedents by Cage*

Boulez's omission of the early relevance of Cage to his mature aesthetic in 'Le Système et l'idée' would suggest that Cage took a direction that marginalised the relevance of his writings and compositions to the pursuit of a serially inspired conceptual indeterminate musical work after 1952. It also accommodates the evaluation of scholars such as Peter McCallum,

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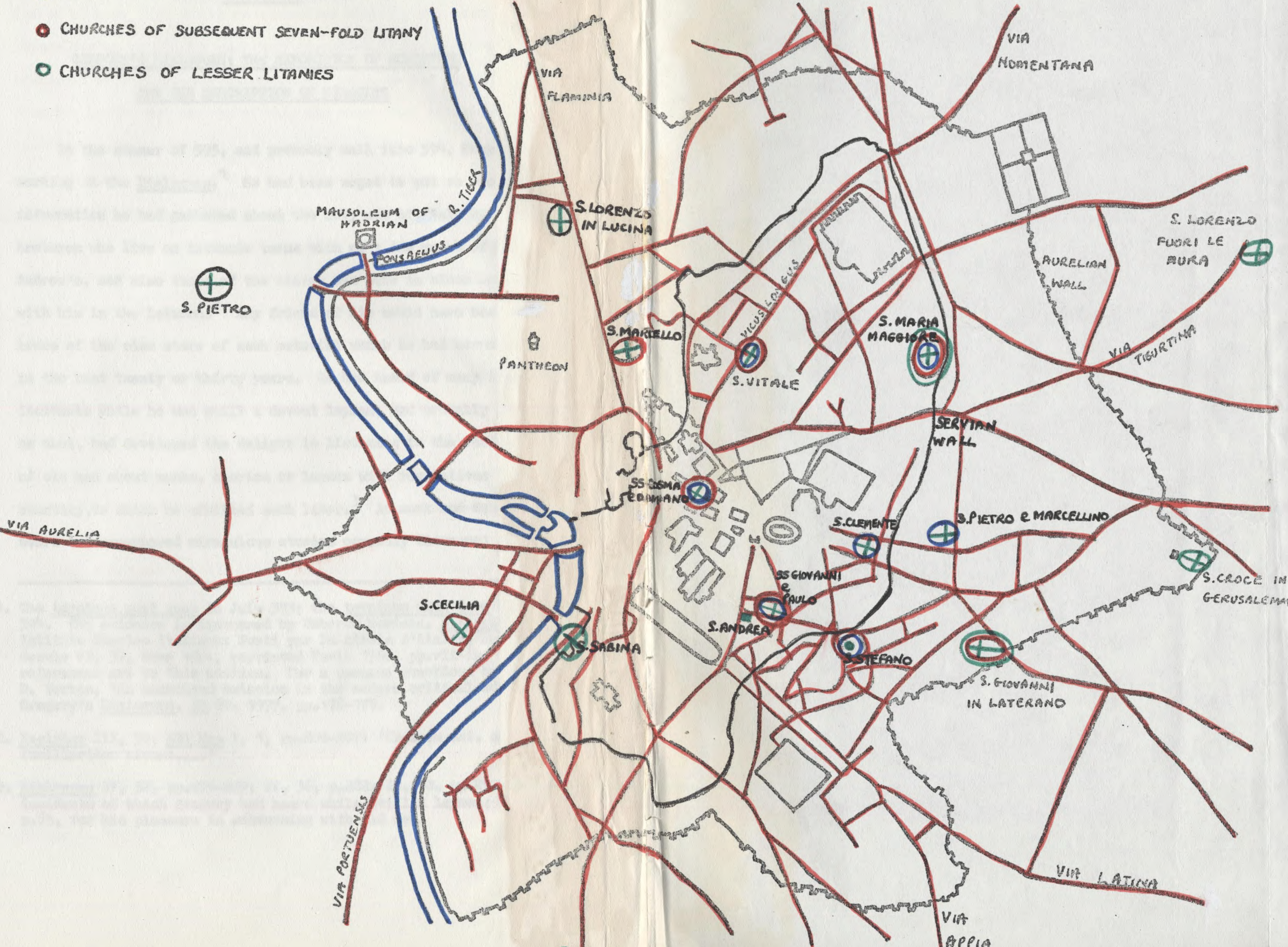
<sup>82</sup>Boulez, 'Possibly...', 135.

<sup>83</sup>Boulez, 'Possibly...', 134, 135.

<sup>84</sup>Boulez, 'Possibly...', 135. See Chapter Two, page 99.

# ROMAN PENITENTIAL PROCESSIONS, 590 - c. 800 AD

- CHURCHES OF GREATER LITANY
- CHURCHES OF FIRST SEVEN-FOLD LITANY
- CHURCHES OF SUBSEQUENT SEVEN-FOLD LITANY
- CHURCHES OF LESSER LITANIES



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who have suggested that *Répons* created 'a correlation of time with space which is totally new' and that opened up 'a dimension in music which hasn't been used with this kind of syntactic cogency before'.<sup>85</sup> These assessments overlook two important pieces of evidence from Cage's output after 1952, however: the text 'Composition as Process II: Indeterminacy' (1958) and the piece *Variations IV* (1964).<sup>86</sup>

### *V.1 'Composition as Process II: Indeterminacy'*

In the essay 'Composition as Process II: Indeterminacy', Cage makes three important statements about his indeterminate aesthetic that complicate the belief in his peripheral relevance to Boulez's ideal post-Webernian conceptual musical work delimited by the directive of the composer's will.<sup>87</sup> First, in his examination of the definition of 'composition which is indeterminate with respect to its performance', Cage addresses the question of pieces designed to incorporate some variable element outside the composer's directive.<sup>88</sup> Cage

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<sup>85</sup>Pierre Boulez and Peter McCallum, 'An Interview with Pierre Boulez', *Musical Times* (January, 1989), 8-10, pp. 8-9. See also Susan Bradshaw, 'The Instrumental and vocal music', in William Glock, ed., *Pierre Boulez: A Symposium* (London, 1986), 127-299, p. 229.

<sup>86</sup>'Boulez's compositional thought is inseparable from his conception of material and of time.' Nattiez, 'Boulez à l'âge postmoderne', 188. It is difficult to trace a network of 'systematic' thematic relationships across performances of *Répons*, a fact that currently limits the pursuit of an objective critical tradition.

<sup>87</sup>It is significant the publication of Cage's text followed the appearance of 'Alea' the year before.

<sup>88</sup>John Cage, 'Composition as Process II: Indeterminacy', *Silence*

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contrasts compositions that match this description -- works like *The Art of Fugue* by Bach, *Klavierstück XI* by Stockhausen and *Intersection 3* by Morton Feldman -- with his own *Music of Changes*, the piece Boulez rejected for its 'method of absolute chance (by tossing the coins)' in his letter of December 1951.<sup>89</sup>

Boulez's objection to *Music of Changes* in the letter was predicated on the same belief he held in 'Alea' in 1957 and that Nattiez articulated in 1986: these structures were untenable, he maintained, because they featured formal systems that generated material without reference to the composer's will. In his defence of this procedure in 1958, Cage challenged this assessment. Rather, he suggested that it was the connection between the idea of the piece and its variable network of relationships that was most significant. As he wrote, in 'Composition as Process II: Indeterminacy', the fact that he used chance operation in the composition of *Music of Changes* 'identifies the composer with no matter what eventuality'.<sup>90</sup>

The second issue addressed by Cage in the text strikes especially close to Boulez's own work in the late 1950s. It

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(London, 1987), 35-40, p. 35-36. The text was originally given as a lecture at the Darmstadt summer courses in 1958. This essay will subsequently be referred to as 'Indeterminacy'.

<sup>89</sup>Pierre Boulez, Document 26, in Nattiez, *Correspondence*, 112-129, p. 112.

<sup>90</sup>Cage, 'Indeterminacy', 36. Whether or not Cage was himself guilty of historical revision in this article falls outside the scope of this study.

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assesses the relationship between serialism and indeterminacy and evaluates the viability of the structures proposed by Stockhausen's *Klavierstück XI*, a piece that closely resembles 'Constellation-Miroir' from the Third Piano Sonata. Cage wrote that his prepared piano piece *Music of Changes* produced a more 'progressive' union of form and idea than Stockhausen's serial piece *Klavierstück XI* for four important reasons: the sound gamut of *Music of Changes* was not restricted to twelve chromatic notes; the piece was not organised by a regular beat; it did not exist as an individual object in time; and it did not follow a typically Western structural trajectory from beginning, through middle, to end.<sup>91</sup> Indeterminate compositions built on serial structures fall short of the shared pursuit of a 'prominent individuality', he maintained; at the same time, they do not further the relationship between form and material set out in Cage's prepared piano pieces -- the compositions, Boulez and Cage had agreed, which were essential to the investigation of post-serial structures after Webern.

Finally, in his explanation of his ideal indeterminate work in the text, Cage outlined a model of the musical work that powerfully foreshadows *Répons*. Cage suggested that the most important aspects of an indeterminate musical work were its structural articulation through material of 'physical space' and 'physical time'.<sup>92</sup> In the case where a performance

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<sup>91</sup>Cage, 'Indeterminacy', 36.

<sup>92</sup>Cage, 'Indeterminacy', 39.

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involves a number of players:

it is advisable for several reasons to separate the performers' one from the other, as much as is convenient and in accord with the action and the architectural situation. This separation allows the sounds to issue from their own centres and to interpenetrate in a way which is not obstructed by the conventions of European harmony and theory about relationships and interferences of sounds. ... the action of the players is productive of a process, no harmonious fusion of sound is essential. A non-obstruction of sounds is the essence. The separation of players in space where there is an ensemble is useful towards bringing about this non-obstruction and interpenetration, which are of the essence.<sup>93</sup>

In 'matters concerning the physical time' of a performance, he continued:

The situation of sounds arising from actions which arise from their own centres will not be produced when a conductor beats time in order to unify the performance. ... All that is necessary is the slight suggestion of time. ... Where a conductor is present, who by his actions represents a watch which moves not mechanically but variably, it is not possible to foresee the time, by reason of the changing progress from second to second of the conductor's indications. ... His actions will interpenetrate with those of the players of the ensemble in a way which will not obstruct their actions.<sup>94</sup>

We have seen from Boulez's account of Cage's structural methodology in 'Possibly...' that Cage was working with viable structures for realising a shared indeterminate ideal in the period before 1952.<sup>95</sup> 'Composition as Process II: Indeterminacy' shows that, as late as 1958, Cage was still developing these ideas. With the exception of the fact that Cage did not base his conclusions on a serial structure, these observations confirm the closeness of his on-going project to

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<sup>93</sup>Cage, 'Indeterminacy', 39.

<sup>94</sup>Cage, 'Indeterminacy', 40.

<sup>95</sup>See Chapter Two, page 99.

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Boulez's.

### *V.2 Variations IV*

*Variations IV* (1964) confirms this similarity.<sup>96</sup> It features each of the key elements Boulez applied in *Répons* to achieve a texture supporting his dialectic between 'system' and 'idea': the use of 'psychological' time to connect gestures in space and time; the integration of electronic and acoustic sound; and the spontaneous and evolving articulation of form through the use of gate-circuits in the context of performance. The use of the dimensions of an action to define the parameters of a performance space forms the basis of the piece, which is designed, as its score states, 'for any number of players, any sounds or combinations or sounds produced by any means, with or without other activities'.<sup>97</sup>

Drawing on the multi-work concept of the Concerto for Piano and Orchestra (1957-58), *Variations IV* is the second work in a set of three -- *Atlas Eclipticalis* is the first and *0'00" (4'33" No. 2)* (1962) the third. Like *Fontana Mix* (1958), the published score of *Variations IV* consists in written directions and a set of materials to be used to construct a second, performing score. The score consists in a plan of the performance space and a series of nine transparencies, two

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<sup>96</sup>For discussions of *Variations IV*, see Michael Nyman, *Experimental Music: Cage and Beyond* (Cambridge, 1999), 92, 103-4; James Pritchett, *The Music of John Cage* (Cambridge, 1993), 155-156.

<sup>97</sup>*Variations IV* is published by Universal, 1964.

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featuring circles and seven showing points, which are 'let fall' across the plan.<sup>98</sup> The intersection of circles and points on the plan creates a performance arena that is defined internally by an interface between 'operative' and 'inoperative' lines of activity. Performers are instructed to read the material as many times as they wish, either before or during the performance.

The piece evolves as the result of the production of sound and action in physical relationship to the performance space that conforms to the patterns of the score. Sound can be planned or spontaneous and can be produced anywhere along the lines denoted outside the performance area. The experience of this space and the incorporation of sound production both inside and outside the set performance space are central to the concept of the work. In the score, Cage suggests the use of open doors, windows or different rooms to achieve this effect, although he stipulates that a performance can just as well happen in a closed space, such as a cave, or in a non-structural space, such as an outdoor area of any size.

*Variations IV* is conceived without time or space 'measurement' -- time and space are considered flexible and allow for an interpenetration between these virtual, fluctuating dimensions and real, but variable, dimensions of the performance space itself. Finally, a performer involved in the creation of *Variations IV* is not restricted to the performance of this piece; in addition to the two other

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<sup>98</sup>See Pritchett, *Music of John Cage*, 155-156.

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compositions Cage conceived with the piece, he stipulates that other works may be incorporated into the performance at any time.

*Variations IV* shares a number of characteristics with its predecessors in Cage's oeuvre; in fact, it introduces little of what might be called 'musical' or 'structural' content that was new to Cage in the mid-1960s. The use of transparencies, amplification, gesture, gate-circuits to mix sound and movement across the performance space, and a free approach to content had been employed elsewhere, as had the attitude that the performance was one partial manifestation of a greater work whose identity was not disturbed by the presence or absence of any of its parts. These procedures -- and especially the stipulation that other works can be incorporated in a performance -- reflect the fact that Cage's work, like Boulez's at this time, had become focused on a single basic approach to the idea of a musical work. Each of his compositions, from *Music of Changes* and *Imaginary Landscape No. 4*, through *4'33"*, the '10,000 Things', and *Fontana Mix* and the Concerto for Piano and Orchestra, were designed to exploit the structural possibilities inherent in spontaneously sounding acoustic or electro-acoustic phenomena.

In light of Boulez's work in expanded conceptual structures, however, *Variations IV* is especially important. Although it lacks of a fundamental set of foundational pitch configurations like the five basic chords used in *Répons*, it exhibits the key features of Boulez's later electro-acoustic

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vision, in particular, those that support the idea that the musical work exists in the tension between 'system' and idea'. *Variations IV* brings together the reciprocity between formal and aesthetic structures created by the dimensions of the work in performance, the connection of these structures to the abstracted formal relationships in the score, and a single, over-riding concept of the composition. Like Boulez's claim for *Répons* in 'Le Système et l'idée', in *Variations IV*, the musical idea does not exist outside the design -- however abstract -- of the musical work, but is conditioned by it.<sup>99</sup> To quote Boulez, 'the idea coincides completely with the organisation of the system'.<sup>100</sup>

## VI

Boulez's serial reading of an ideal post-Webernian indeterminate musical work in *Répons* in 1981 was powerful, in particular, as an interesting and important study on how multi-level thematic transformation can create musical 'meaning' by extending the role of chance and interpretation in the realisation of composition in performance. Nattiez's belief that this achievement was part of a 'trajectoire boulézienne' differentiated by its use of structures in which 'new material integrates into a syntax that results from compositional will' does not necessarily follow from this model, however, which is

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<sup>99</sup>Boulez, 'Le Système et l'idée', 321.

<sup>100</sup>Boulez, 'Le Système et l'idée', 333.

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predicated on the assumption that these structures can only be supported in a directed, serial environment.<sup>101</sup>

The idea that *Répons* proposed a unique union of 'system' and 'idea' is difficult to establish against the wider background of the achievements of the post-war avant-garde. In particular, it relies on a specific reading of the notion of a musical 'system' and its role in creating a musical work in performance. The assumption behind Boulez's -- and with it Nattiez's -- reading is that meaning is preserved in evolving musical structures through implication, and that the relationship between material and form is ultimately conceptual. The belief that expanded indeterminate structures have symbolic potential is at the root of this reading, which makes up an essential part of the post-Webernian musical agenda. Boulez's assertion is that the symbolic potential of these conceptual structures is manifest only when indeterminate elements share a common, pitch-based serial foundation. This conviction does not take into account the wider implications of Boulez's advanced conceptual vision, however, or its relationship to other, non-pitch-based, post-serial indeterminate structures. Despite the extraordinary achievement that is *Répons* as a composition, its design cannot be said wholly to articulate an aesthetic that is unique, either structurally or aesthetically, to Boulez.

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<sup>101</sup>Nattiez, 'Boulez à l'âge postmoderne', 185, 186.

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## Conclusion

As I see it, the idea of the labyrinth, or maze, in a work of art is roughly comparable to Kafka's procedure in his short story 'The Burrow'. The artist creates his own maze; he may even settle in an already existing maze since any construction he inhabits he cannot help but mould to himself. He builds it in exactly the same way as a subterranean animal builds the burrow so well described by Kafka, continually moving his supplies for the sake of secrecy and changing the network of passages to confuse the outsider.

Boulez, 'Sonata, que me veux-tu?' (1960)<sup>1</sup>

In *Remaking the Past: Musical Modernism and the Influence of the Tonal Tradition*, Joseph Straus outlines Harold Bloom's theory of the 'anxiety of influence', which suggests that 'the relationship between artists and their predecessors is not one of generous and mutually beneficial borrowing, but one of anxiety, anger and repression'.<sup>2</sup> For Bloom, the meaning of a poem is not autonomous, but resides in its relationships, both with other individual texts and with the wider world of

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<sup>1</sup>Pierre Boulez, 'Sonata, que me veux-tu?', in Pierre Boulez, *Orientations: Collected Writings*, ed. Jean-Jacques Nattiez, trans. Martin Cooper (London and Boston, 1986), 143-154, pp. 145-146.

<sup>2</sup>Joseph N. Straus, *Remaking the Past: Musical Modernism and the Influence of the Tonal Tradition* (Cambridge, MA, and London, 1990), 12. Harold Bloom's theory is explained in his *The Anxiety of Influence: A Theory of Poetry* (Oxford, 1973).

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literary language.<sup>3</sup> The connection to predecessors 'crucially defines every work' and is an essential element both of poetic expression and of the process of critical interpretation.<sup>4</sup> Two facts are fundamental to this process: that the later artist 'does not surrender but rather learns to struggle with and neutralise the predecessor' in his search for artistic freedom; and that the history of 'fruitful poetic influence' is typically one of 'self-serving caricature, of distortion, of perverse, wilful revisionism'.<sup>5</sup>

Straus appropriates Bloom's theory in his discussion of musical influences after the period of extreme chromaticism, when stylistic diversity and the 'rich interplay of contrasting and conflicting elements' in the works of composers such as Schoenberg and Stravinsky becomes characteristic, isolating their work from a wider network of shared historical precedent. This isolation renders the task of comparative analysis of contemporary composers especially challenging. Bloom's theory, Straus suggests, illustrates the creative tension produced by their differing solutions to a similar historical condition and it becomes easier -- and more critically relevant -- to evaluate contradictory contemporary threads of formal and stylistic iconoclasm. Crucially, while Bloom's theory justifies the comparison of these differing solutions against a

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<sup>3</sup>Straus, *Remaking the Past*, 13.

<sup>4</sup>Straus, *Remaking the Past*, 12.

<sup>5</sup>Straus, *Remaking the Past*, 14; Bloom, *The Anxiety of Influence*, 30.

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wider historical framework, it has a second consequence: it authenticates itself as a critical method through an essential feature of its subjects' artistic agenda. The shared belief among contemporary composers in the inescapable nature of their historical position licenses a comparative critical method constructed on those perceived similarities.<sup>6</sup> As Schoenberg wrote in 'How One Becomes Lonely':

While composing for me had been a pleasure, now it became a duty. I knew I had to fulfil a task; I had to express what was necessary to be expressed and I knew I had the duty of developing my ideas for the sake of progress in music, whether I liked it or not.<sup>7</sup>

Webern, Schoenberg's student and contemporary, reiterated this belief in the inescapable force of change among composers in the first part of the twentieth century:

Our push forward *had* to be made, it was a push forward such as never was before. In fact we had to break new ground with each work; each work is something different, something new.<sup>8</sup>

The knowledge that composers have substantiated their contributions to the history of music by working against the achievements of powerful predecessors is of course not new. That an unsatisfying musical inheritance prompted Schoenberg and Webern to forge their own directions is characteristic of defiant impulses generally, and draws the creative tension

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<sup>6</sup>For a recent opinion on this self-perception, see Arnold Whittall, 'Millennial Prelude', in his *Musical Composition in the Twentieth Century* (Oxford, 1999), 1-7, especially p. 5.

<sup>7</sup>Arnold Schoenberg, 'How One Becomes Lonely', in *Style and Idea*, ed. L. Stein (London, 1975), 104.

<sup>8</sup>Anton Webern, *The Path to New Music*, ed. Willi Reich, trans. Leo Black (Bryn Mawr, PA, 1963), 45.

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generated by the disagreement between Schoenberg and Stravinsky together with debates as distant as that of Artusi vs. Monteverdi through characteristic features of the ebb and flow of stylistic development. What is different about Straus' reading of the works of these divergent personalities is the conviction that contemporaries such as Schoenberg and Webern -- and with them, their antithesis Stravinsky -- acted out of a shared belief in historical necessity despite their divergent compositional approaches, a reading that offers a new way of assessing conflicting streams of iconoclasm within a single generation. This reading differentiates the aspiration for 'newness' from typical stylistic shifts for two reasons: it sublimates the desire of an individual composer to rebel against the music of his predecessors to the wider cultural force of historical necessity, and it attributes to these same individuals a wilful desire actively to devalue the achievements of the previous generation with their own, more historically meaningful compositions. As Peter Bürger explains, with this belief in the necessity of 'newness' in a composition:

we have neither a variation within the narrow limits of a genre (the 'new' song) nor a schema that guarantees surprise effects (tragicomedy) or the renewal of ... techniques in works in a given genre. We are dealing not with development but with a break with tradition. ... It is no longer the artistic techniques or stylistic principles which were valid heretofore but the entire tradition of art that is negated.<sup>9</sup>

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<sup>9</sup>Peter Bürger, *Theory of the Avant-Garde*, trans. Michael Shaw (Minneapolis, MN, 1994), 60.

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*Constructing a critical commentary:  
the problem of the post-war avant-garde*

Although the modernist image of divergent composers united against the outmoded work of a common predecessor assists the task of engaging contemporaries such as Schoenberg and Stravinsky in a comparative critique, it does little to establish a dialogue between post-war composers, whose network of influences is more complicated. While Straus can construct a critical approach around Schoenberg's and Stravinsky's differing solutions to the same problem of extreme chromaticism, for example, it is less easy to engage the mature works of Stockhausen with the serialism of Babbitt, or Schnittke with Peter Maxwell Davies or Franco Donatoni through this same image of a common nemesis looming from a previous generation.<sup>10</sup> The urge toward innovation in the post-war period produced a plurality rather than a division of styles, many of which benefitted from the fertile tension inherent in a wide range of polarised aesthetic influences. The combination of a fragmented stylistic inheritance and the shift from a national to a global cultural environment after the Second World War resulted in a complexity and diversity in post-war music that has required new critical mechanisms. As Whittall suggests, rather than seeking to establish a singular reading of the period and its music, commentaries have become as widely inclusive as the music itself:

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<sup>10</sup>For a recent discussion of these and other significant but less widely studied composers, see Arnold Whittall, 'Polarities, Pluralities', in his *Musical Composition in the Twentieth Century*, 364-392.

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At the end of the twentieth century, serious art music is still modern, still plural, its classicising potential still strong, its radical inheritance continually reasserted and continually questioned, while its need to relate to aspects of the wider world, like ethnic identity and technological advance, remains undiminished.<sup>11</sup>

Scholarship in the 1980s and 1990s began to bridge the divide between Boulez's and Cage's work by appropriating aspects of the period's aesthetic plurality as the basis for new critical mechanisms. Alastair Williams, for example, brought elements of the divergent American and European traditions together through effective juxtaposition. Where Cage's early work drew on 'the ideas of the Futurists, and [was] fed by the American experimental tradition', his other interests, notably in organisation and control in his 'preference for raw sound' were 'commensurate with the rationality of European high modernism'.<sup>12</sup> The fertile critical potential inherent in the contrast between modernism and postmodernism was also used by Robert P. Morgan, whose reading of Cage as a 'post-tonal' composer offered him the possibility of historicising the experimental outcome of Cage's prepared piano pieces within a wider twentieth-century framework. Rather than focus on the throwing of dice to determine the relationships between material, Morgan

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<sup>11</sup>Whittall, 'Polarities, Pluralities', 392.

<sup>12</sup>Alastair Williams, *New Music and the Claims of Modernity* (Aldershot, 1999), 64 (see also page 103); Williams' text was originally published in 1997. See Robert P. Morgan, 'Rethinking Musical Culture: Canonic Reformulations in a Post-Tonal Age', in Katherine Bergeron and Philip V. Bohlman, eds., *Disciplining Music: Musicology and its Canons* (Chicago and London, 1992), 44-63, especially pp. 48-54.

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concentrated instead on the pieces' formal implications -- their representation of 'the ideal image reflecting the artificiality of musical structure in the post-tonal period'.<sup>13</sup>

Jos De Mul, similarly, found critical potential in a possible 'serial' reading of Cage's 'call to the exploration of all sounds' in these chance compositions.<sup>14</sup> He considered chance procedures in light of their potential to gain a new kind of control rather than freedom, a difference that places this aspect of Cage's work within the Schoenbergian 'tradition of the increasing control of nature'.<sup>15</sup> Taking this re-reading to an extreme, a relationship can be established between Cage's later open-form works and total serial compositions through observable similarities of aesthetic effect rather than actual structure. In De Mul's work, these types of composition are said to bear comparison because in both 'despite the total domination of the composer, the end-result practically appears not to be perceived in advance'.<sup>16</sup>

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<sup>13</sup>Morgan, 'Rethinking Musical Culture', 51.

<sup>14</sup>Jos De Mul, *Romantic Desire in (Post)modern Art and Philosophy* (Albany, New York, 1999), 212; originally published in Dutch as *Het romantische verlangen in (post)modern kunst en filosofie* (Rotterdam, 1990). De Mul bases this remark on an excerpt from Cage's 'The Future of Music: Credo' (*Silence* [London, 1987], 3-6), pp. 3-5.

<sup>15</sup>De Mul, *Romantic Desire in (Post)modern Art and Philosophy*, 212.

<sup>16</sup>De Mul, *Romantic Desire in (Post)modern Art and Philosophy*, 219. De Mul goes on to outline the essential need for a divergent aesthetic approach however: '...despite this agreement in indetermination of the sound material, there are fundamental differences with respect to the intentions of both

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These accounts of the connection between Cage's compositions for prepared piano and a serially conceived aesthetic are characteristic of the critical climate of the later twentieth century, when scholarship became free to engage with a subject unencumbered by the burden of reconciling individual observations with a wider global aesthetic. The desire to subsume Cage's experiments with chance procedures within the Euro-centric serial dialectic became a trend in these studies generally. Michael Chanan, for example, illustrates this tendency in socio-cultural studies when he writes that Cage's

evacuation of the subject position of the composer, which pre-echoes the French literary theorists' idea of the death of the author, is clearly cousin of the impersonality sought by Boulez, and probably explains the affinity which the two composers originally felt for each other'.<sup>17</sup>

Whittall makes a different, but related point about Cage's role in *4'33"* when he writes that 'the decisions the composer *has*

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parties. Where, in serialism, indetermination appears in opposition to the attempt to make the subjective work-concept safe (that which only works because the composing subject subordinates himself to the autonomy of the composed work), Cage's aleatoric [sic] is precisely aimed at undermining that work-concept. ....where serial music still holds ... to an external organisation via the composer, at this point the affirmation of chance in Cage's aleatory music implies a radical break with teleology and subjective representation.' (219-220).

<sup>17</sup>Michael Chanan, 'Towards Postmodernism', in Michael Chanan, *From Handel to Hendrix* (London and New York, 1999), 271-311, pp. 299-300. For a more wide-ranging reading of the 'death of the author' in Cage's work, see Jos De Mul, 'Cage's Total Aleatoric', 'Nietzsche Heidegger, and the World of Chance' and 'The Aeolian Harp', in *Romantic Desire in (Post)modern Art and Philosophy*, 218-230. See also Whittall, 'Radicals and Rituals', in *Musical Composition in the Twentieth Century*, 266-285, p. 266.

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made are still very important' and suggests that the attitude of acceptance of environmental noises as part of the soundscape of the piece 'can in some way be compared with a Bach suite or a Boulez sonata'.<sup>18</sup>

Crucially, these readings redress the lack of attention to Cage's contribution to the European critical dialectic, a tendency typical of the foundational studies on the composer outlined in the Introduction above.<sup>19</sup> Recent examinations such as those by Williams, Morgan, De Mul and Whittall underline the importance of Cage to the evolution of a distinctive -- if plural -- approach to musical composition in the second half of the twentieth century. At the same time, they shed light on timely questions about the difficulty both in historicising experimental composers and in articulating the difference between modernism and postmodernism in music after 1945.<sup>20</sup>

It is also possible to approach the question of an ongoing connection between the compositions and aesthetics of Boulez and Cage from the opposite direction, however, and to challenge the assumption that Boulez's work described a distinctive post-Webernian aesthetic to which aspects of Cage's structures sometimes aspired. This study in no way proposes to

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<sup>18</sup>Whittall, 'Radicals and Rituals', 279. Whittall's comment about Bach recalls Cage's discussion of his own work in the 1958 text 'Composition as Process II: Indeterminacy' (*Silence*, 35-40).

<sup>19</sup>See the Introduction to this study, pages 14-17.

<sup>20</sup>For an illuminating discussion on this subject, see Williams, 'Discourses of Modernity', in his *New Music and the Claims of Modernity*, 119-135.

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challenge Boulez's reputation as one of the most articulate and substantial composers of the post-war period. However, the evidence presented in this investigation suggests the possibility of a related, alternative reading of the connection between Boulez's and Cage's aesthetics that complements these recent critical assessments.

*The Three stages of 'dissociation': conclusions*

Taking the image of the historicised Cage as a point of departure, this alternative reading begins with a brief review of the principal findings of the chapters above. In the introduction to this study, we saw that Nattiez called the intimate correspondence between Boulez and Cage from 1949 to 1951 'surprising' in light of the subsequent prolonged opposition in their compositions and writings.<sup>21</sup> In the four central chapters, we addressed the validity of that assessment by examining key 'instruments of dissociation' that have contributed to the view that Boulez's work moved away from the influence of Cage in observable stages from 1952.<sup>22</sup> Chapter One investigated the background to Boulez's initial dissociation from Cage's work in the letter of December 1951. It examined the broad impact of developments in electronic technology on composers in the early post-war period, and from

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<sup>21</sup>Jean-Jacques Nattiez, 'Introduction -- Cage and Boulez: a chapter of music history', in Jean-Jacques Nattiez, *The Boulez-Cage Correspondence*, with Françoise Davoine, Hans Oesch and Robert Piencikowski, ed. and trans. Robert Samuels (Cambridge, 1993), 3-24, p. 3.

<sup>22</sup>See the Introduction to this study, page 24.

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there it posited that Boulez's belief in the imminence of a new phase in the history of a composer's relationship to his material may have strengthened his faith in a serially derived indeterminate musical work in 1951. Indeed, his enthusiasm for technology as a means with which to explore and 'control' indeterminacy may have influenced his assessment of Cage's chance procedures. Chapter One then examined Boulez's treatment of serialism and electronics in his writings throughout the 1950s. It concluded that, despite his attempts to construct an alternative to Cage's indeterminate aesthetic, Boulez did not achieve this goal at that time. In particular, this chapter asserted that what he called a different 'literary' structural model later in the decade was not distinct, either structurally or aesthetically, from the early serially inspired model of indeterminacy that he shared with Cage before 1951.

Chapter Two addressed the question of Boulez's 'literary' model by examining the consistency of its articulation in the Third Piano Sonata and the essay 'Sonata, que me veux-tu?'. It raised the question of Boulez's purpose in conceiving a work of its aesthetic dimensions as late as 1957 and set out to assess the claim that it appropriated for music an unexplored model of open form. This chapter traced a number of Boulez's claims for the 'unexplored' aesthetic of the Third Piano Sonata to his 1957 essay 'Alea', where many of these same ideas were discussed without reference to the models of Joyce and Mallarmé. The chapter investigated Boulez's delineation

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between 'good' and 'bad' chance in this article and noted the text's inconsistencies and acknowledged limitations. It then discussed 'Alea' as a thinly disguised attack on Cage's compositions and questioned the coincidence of the near simultaneous publication of the text and the conception of the Third Piano Sonata late in the decade. The chapter concluded by addressing the aesthetic of the Sonata in light of Boulez's early essays and letters. These documents suggested that, despite Boulez's claims to the contrary, Cage had in fact been a formative influence on the structure and aesthetic said to be a 'literary' model in the essay 'Sonata, que me veux-tu?'.

Chapter Three approached the Third Piano Sonata from a different direction -- it addressed its unfinished status in light of Boulez's compositions from the 1960s and 1970s. This chapter pursued the relationship of the 'literary' aesthetic outlined in 'Sonata, que me veux-tu?' to Boulez's later structural models and sought to establish whether the Sonata embodied a viable aesthetic that was beyond technical possibility at the end of the 1950s. In an extended discussion of Boulez's accounts of the relationship between musical structure and aesthetic in the works of this period, it raised the question of the importance of electronic procedures in realising his ideal of an evolving independent indeterminate composition, which was at that time predicated on the possibility of creating a 'linguistic' model of syntactic musical meaning. As part of that discussion, Chapter Three examined the use of electronic procedures to achieve high-level

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thematic transformation in '*...explosante-fixe...*' in 1971. By comparing features of its original score with Boulez's written accounts of its aesthetic, it concluded that electronic transformation was not an essential factor in the success of the composition's structure or aesthetic. Rather, electronic transformation, although effective, was shown merely to have acted to vary the types of proliferation already present in the piece by virtue of its serially derived structural foundation.

The Introduction to this study showed that the pieces and documents addressed in these first three chapters delineated the principal stages of dissociation of Boulez's from Cage's indeterminate aesthetic across the post-war period.<sup>23</sup> Having established that key texts by Boulez contain either overstatement or directed historical revision at important points in each of these stages, Chapter Four investigated the claim that *Répons* 'redeemed' Boulez's project by establishing a viable model of unity and authority in a workable composition in 1981. The chapter began by addressing the structure of *Répons* and Boulez's accounts of its physical design and aesthetic. It then examined the claims made by Boulez and Nattiez in the 1980s and 1990s about the success of its aesthetic and how it was distinct from the open-form works of Cage. The discussion showed that Boulez's and Nattiez's assessments were predicated on a unified reading of the connection between 'present' and 'absent' musical structures, a model of meaning familiar from some of Boulez's texts in the

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<sup>23</sup>See the Introduction to this study, pages 24-25.

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1950s and 1960s. The chapter went on to suggest that these assessments were not independently corroborated. Although it was acknowledged that the unity of structure and material proposed by *Répons* was a virtuosic tribute to Boulez's inventiveness as a composer, the discussion suggested that the aesthetic design of *Répons* was not wholly unique. Finally, Chapter Four addressed Nattiez's assertion that *Répons* was different from Cage's open-form compositions in its preservation of the composer's will. It showed that evidence from Cage's text 'Composition as Process II: Indeterminacy' contradicted that assertion, which was also complicated by the design of Cage's non-serial piece *Variations IV*.

The findings of each of the chapters above confirm that Boulez's writings do not articulate a clear alternative indeterminate aesthetic across the post-war period. Rather, they show that, at crucial stages in the course of his compositional development and in key letters and essays, Boulez took pains to differentiate his work from Cage's compositions without having fully conceived a viable practical alternative. These findings provide important background information to foundational studies in Boulez criticism that outline the principal events and stages of development in his compositions and aesthetics.<sup>24</sup> Despite Boulez's difficulty in establishing a consistent serially inspired indeterminate aesthetic across the post-war period, his writings also show him unrelenting in

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<sup>24</sup>For a commentary on these foundational texts, see the Introduction to this study, pages 5-8.

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its pursuit, a fact that is testimony both to the seriousness of his contribution to post-war music and to his unwillingness to compromise his ideal vision in the face of considerable practical and theoretical opposition.

*Bridging the 'two radically opposed streams of post-war music history' (Nattiez)*

Although the individual conclusions in Chapters One through Four establish the need to re-evaluate some key assumptions about the independence of Boulez's indeterminate aesthetic from Cage's for historical reasons, they also offer evidence to support the use of his commentaries as the basis for a reading of larger patterns of influence. To this end, while explaining his at times sporadic compositional activity, Boulez's writings can also illuminate an important fact about his role in shaping music in the second half of the twentieth century. In particular, they can inform the question of whether his ongoing insistence on the need to establish a means for determining indeterminacy after 1945 derives from a specific historical factor with unifying critical potential.

Bloom's image of the poet creating poetry out of a desire to overcome the legacy of a powerful adversary is useful as a starting point for this second interpretation of the connection between vision and revision in Boulez's post-war commentaries. The idea that the poems themselves derive meaning from their place within an ongoing creative struggle, too, offers a fertile critical context. Although, as we have seen, Straus appropriated these images in order to compare differing

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contemporary composers with a common powerful predecessor, Bloom's theory also offers considerable scope for measuring other influential relationships not predicated on this same division between past and present. In the pluralist climate of the post-war avant-garde -- and, in particular, in the case of its two most prominent contemporary adversaries -- Bloom's framework invites a different, though related, comparative methodology. It offers an especially useful tool for illuminating the tension between two strong creative personalities when the roles of both 'past adversary' and 'present stylistic rival' are played out within a single generation.

As we have seen throughout this study, Boulez's abiding belief in the generative potential of serialism was a central theme in his post-war commentaries. A serially derived model of musical unity figured throughout his writings and offered crucial theoretical consistency in a creative atmosphere characterised by experiment and innovation. In this sense, Boulez's interpretations and evaluations are an essential element of his compositional project. They play a key role in illuminating what Max Paddison has called the 'mute' structural rendering characteristic of avant-garde music and are an important contribution to post-war musical aesthetics.<sup>25</sup>

Boulez's commentaries also outline a number of key aesthetic features that draw together serially inspired compositions as

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<sup>25</sup>Max Paddison, *Adorno, Modernism and Mass Culture: Essays on Critical Theory and Music* (London, 1996), 63. This idea was first introduced in the Introduction, above, pages 20-21.

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diverse as *Polyphonie X*, The Third Piano Sonata and *Répons*. A brief review of these features in light of the general findings of this study highlights a difficulty in Boulez's accounts that has implications for a reading of the reception of his work after his split with Cage in 1952.

In the first chapter, we saw that Boulez's earliest experiments sought to establish a method for unifying musical material based on an extension of the serial principle. His method was designed to determine the entire 'sound space' of the composition and bring each of the elements of musical language together such that they became a 'single idea'.<sup>26</sup> Boulez's first fully generative compositional system, designed for *Polyphonie X*, achieved this by combining 'sound aggregates' through 'functional' serial or serially derived relationships.<sup>27</sup> While this design ensured a close connection between structure and material, it also guaranteed that the form was the result of the combinations of musical material. This meant that the composition was not conditioned by the composer's 'aesthetic choice'.<sup>28</sup> Crucially, because the combinative potential of the system itself was predicated on the 'specific structural character' of the composer's musical material, the composition was still an intentional object.<sup>29</sup>

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<sup>26</sup>Pierre Boulez, Document 26, in Nattiez, *Correspondence*, 80-90, pp. 86-87. For the first discussion of these ideas to appear in this study, see Chapter One, pages 44-45.

<sup>27</sup>Boulez, Document 26, 86-87.

<sup>28</sup>Boulez, Document 26, 85. See page 47 in Chapter One, above.

<sup>29</sup>Boulez, Document 26, 85.

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As Boulez wrote in his essay '...Near and Far', the close relationship between design, proliferative system and unforeseen musical form both historicised his contribution to wider musical traditions and preserved the composer's will. Without this derivative model, he maintained, the generative potential of serial structures would become 'redundant'.<sup>30</sup> As we saw in Chapter One, it would simply be a more complicated way of tossing a coin.

The early notion that serial mechanisms could unite material, system and musical work in performance so closely that they became part of a 'single idea' was the basis of Boulez's more expanded open-form compositions beginning with the Third Piano Sonata, as Chapters Two and Three have shown.<sup>31</sup> From the basic belief in the power of the serial method to create 'intentional' formal relationships between the indeterminate sounding realisation of a composition in performance and its identity as a musical work, Boulez was able to extrapolate vastly expansive compositional designs incorporating a high level of surface and structural indeterminacy in works like *Pli selon pli*, *Figures*, *Doubles*, *Prismes* and '*...explosante-fixe...*'. Boulez's commentaries in 'Sonata, que me veux-tu?', his essays, lectures and interviews in the 1960s and 1970s and his writings after the premiere of

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<sup>30</sup>Pierre Boulez, '...Near and Far', in Pierre Boulez, *Stocktakings from an Apprenticeship*, collected and presented by Paule Thévenin, trans. Stephen Walsh (Oxford, 1991), 141-157, p. 149. This idea was first discussed in this study in Chapter One, page 50.

<sup>31</sup>Boulez, Document 26, 86-87.

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*Répons* in 1981 played an essential role in disseminating this conceptual model of unity in a serially derived indeterminate system. 'Poetry -- centre and absence -- music' and 'Le Système et l'idée' outline the features that distinguish this aesthetic especially clearly.<sup>32</sup> In 'Poetry -- Centre and Absence -- Music', Boulez wrote that music 'has its own semantics firmly rooted in its own basic structures and obeying specific laws'.<sup>33</sup> In 'Le Système et l'idée', he stated that 'the musical idea does not exist as an indefinite absolute, outside of a system' but is entirely conditioned by that system, by its 'profile', 'function' and 'development'.<sup>34</sup>

As we saw in Chapter Four, Boulez derived this model from Webern, who believed that the relationship between the series and the concept of a musical work was intimate and reciprocal.<sup>35</sup> In Webern's model of a meaningful musical system, both elements originate in the composer's invention and are present as essential features of what he called the

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<sup>32</sup>Pierre Boulez, 'Poetry -- Centre and Absence -- Music', *Orientations*, 183-198. For an earlier discussion of ideas related to this text, see Chapter Three, pages 125 and 130. Pierre Boulez, 'Le Système et l'idée', in Pierre Boulez, *Jalons (pour une décennie): dix ans d'enseignement au Collège de France (1978-1988)*, ed. Jean-Jacques Nattiez (Paris, 1989), 316-390. For the first discussion of Boulez's text in this study, see Chapter Four, pages 184-190.

<sup>33</sup>Boulez, 'Poetry -- Centre and Absence -- Music', 189.

<sup>34</sup>Boulez, 'Le Système et l'idée', 321. For the first discussion of this idea, see Chapter Four, page 185.

<sup>35</sup>See Chapter Four, page 186-187. See also the Introduction to this study, page 13.

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'intuitive vision of the work conceived as a whole'.<sup>36</sup>

Paraphrases of this definition are common in Boulez's texts, in particular in those written after he abandoned the Third Piano Sonata and began work on compositions based on his belief in the unifying potential of 'present' and 'absent' formal structures, as examined in Chapter Three.<sup>37</sup> In these commentaries, Boulez shows how these systems are distinguished from other kinds of proliferative structures that lack derivative meaning. His assertion that structures preserve meaning when they obey laws of 'evolution' rather than statistical generalisation is especially relevant.<sup>38</sup>

'Evolving' structures are said to maintain the principle of 'total determinacy' in these compositions and can create expansive open-form compositions while admitting no 'ambiguity' in either the structure or its intended aesthetic effect.<sup>39</sup>

Boulez's explanation of the difference between 'good' and 'bad' chance in the essay 'Alea' exposes the problem with this model of musical meaning, however. In that text, Boulez created a model for subordinating proliferative structures to the

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<sup>36</sup>Boulez, 'Le Système et l'idée', 363.

<sup>37</sup>For the first discussion of these structures, see Chapter Three, page 130. Boulez discusses 'present' and 'absent' structures in 'Poetry -- Centre and Absence -- Music', 188.

<sup>38</sup>Pierre Boulez and Célestin Deliège, *Conversations with Célestin Deliège* (London, 1976), 91-92. This idea is first discussed in this study in Chapter Three, page 136. Boulez's statement about the unifying potential of 'classes of objects' in 1976, for example, is strongly reminiscent of the 'sound aggregates' discussed in relation to *Polyphonie X* in 1949.

<sup>39</sup>Boulez and Deliège, 87. This idea is first discussed in this study in Chapter Three, page 147.

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directive of the composer's will by adapting 'the serial concept to the entire process of composition' in order to unify musical morphology and rhetoric by the same organising principle.<sup>40</sup> Although Boulez was consistent in his reiteration of his familiar model of derived musical structure, his definition became problematic as his discussion turned to the question of aesthetics, where he implied that musical meaning was proportional to the level of abstraction on which it took effect. As we saw in our discussion of 'Alea' in Chapter Two, this claim had consequences. It undermined the notion that meaning was dependent on the actual combination of material, replacing it instead with a conceptual imperative. The implication was that meaning was not contingent on the realisation of the composer's idea of the work in performance. Rather, in a definition that contradicts Boulez's assertion elsewhere that the composer's will is preserved when musical systems articulate the 'specific structural character' of derived musical material in performance, he suggests that meaning exists outside performance as a singular idea contained within the composer's vision of the work.<sup>41</sup>

This image strongly echoes Boulez's quotation of Webern's belief in the 'intuitive vision of the work conceived as a whole' in 'Le Système et l'idée' above.<sup>42</sup> However, it also

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<sup>40</sup>Boulez, 'Alea', 36, 28. For the first discussion of 'Alea' in this study, see Chapter Two, pages 76-93. For these specific ideas, see pages 82 and 90-92.

<sup>41</sup>Boulez, Document 26, 85.

<sup>42</sup>Boulez, 'Le Système et l'idée', 363. See page 233.

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recalls Cage's statement, made in reply to the publication of 'Alea', that the use of chance procedures to combine materials 'identifies the composer with no matter what eventuality'.<sup>43</sup> The closeness of these two conceptions of how meaning is preserved in evolving post-serial musical models is striking, and it emphasises the considerable difficulty in arguing for the preservation of an actual -- as opposed to virtual -- connection between the 'constructive' potential of a serial model and its derivative 'expressive' aesthetic effect. In part, this is a problem specific to Boulez's writings, which ventured into a discussion of a conceptual definition of musical meaning, while remaining inflexible about its implications for the question of intentionality. At the same time, however, they underline a general problem of post-war aesthetic commentaries: the difficulty in seeking to establish a privileged reading of the nature of musical 'meaning' in an evolving post-serial indeterminate musical work.<sup>44</sup>

Cage's approach to this issue was simplified by his early distinction between 'constructive' potential and 'expressive' effect in the design of a composition, a fact that helps to uncover the root of the problem with indeterminacy. In the late 1940s, he isolated the structural function of duration from the aesthetic experience of timbre, pitch and intensity, a move that clearly segregated the idea of a serially inspired

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<sup>43</sup>John Cage, 'Composition as Process II: Indeterminacy', *Silence*, 35-40, p. 36. This text was discussed earlier in this study in Chapter Four, page 207-211.

<sup>44</sup>Pierre Boulez, 'Alea', *Stocktakings*, 26-38.

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organising mechanism from its sounding, 'meaningful' effect.<sup>45</sup> The next logical step for him was in many ways the most consequential for the post-war period. In a structure based on duration, he maintained, 'any sounds of any qualities and pitches (known or unknown, definite or indefinite), any contexts of these, simple or multiple' become 'natural and conceivable'.<sup>46</sup> Cage's model preserves a sound's 'prominent individuality' -- the flexible activity of musical material in time that Boulez called 'the most important thing in music' in his interview with Häusler on *Répons* in 1985.<sup>47</sup> But it also makes Boulez's conviction that music has its 'own semantics firmly rooted in its own basic structures and obeying specific laws' appear to contradict his belief that a serial model was essential to the notion that the musical idea was not independent, but was entirely conditioned by a 'system'.<sup>48</sup> In making musical meaning contingent only on the unforeseen

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<sup>45</sup>John Cage, Document 5, in Nattiez, *Correspondence*, 38-42, especially page 41, and page 39 note 3. For the first discussion of this document in this study, see Chapter One, pages 43-44.

<sup>46</sup>Cage, Document 5, 41.

<sup>47</sup>For 'prominent individuality', see Pierre Boulez, Document 1, in Nattiez, *Correspondence*, 27-32, p. 30 (for an earlier discussion of this document, see Chapter One, pages 38, 43, and 60-61). The idea is also discussed in Boulez's, 'Possibly...', 134-135 (see Chapter Two, page 99). For 'living-time', see Pierre Boulez and Josef Häusler, 'Über *Répons* -- ein Interview mit Josef Häusler', *Schriftenreihe der Heinrich Strobe-Stiftung des Südwestfunks*, 4 (Kassel, 1985), 7-14, p. 14 (for its initial discussion in this study, see the quotation at the beginning of Chapter Four, page 165).

<sup>48</sup>Boulez, 'Poetry -- Centre and Absence -- Music', 189; Boulez, 'Le Système et l'idée', 321.

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activity of musical material in performance, Cage eliminates the aesthetic relevance of an organising mechanism. While organisational systems are made essential to the general existence of a musical work as a conceptual object, they become irrelevant to its specific musical character. In a model that undermines Boulez's reading of the reciprocal relationship between concept and material, Cage suggests that where the one is the 'idea' (conception of the musical work as an object in time), the other is the 'system' (character of its spontaneously sounding material) that makes the elements articulated within that idea meaningful.<sup>49</sup>

Schoenberg's writings suggest an awareness of the thin line between a serial conception of structure and an all-inclusive -- if at the time differently conceived -- aesthetic of musical meaning when he formulated the method in 1923. What he called the 'weightiest assumption' of his method was that

whatever sounds together (harmonies, chords, the result of part-writing) plays its part in expression and in presentation of the musical idea in just the same way as does all that sounds successively (motive, shape, phrase, sentence, melody, etc.), and it is equally subject to the laws of comprehensibility.<sup>50</sup>

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<sup>49</sup>For the summary of Boulez's model from 'Le Système et l'idée', see Chapter Three, page 190.

<sup>50</sup>Arnold Schoenberg, 'Composition with Twelve Tones (I)', in *Style and Idea*, ed. L. Stein (London, 1975), 214-245, p. 207. This quotation has interesting implications for Boulez's much quoted 1952 statement about Schoenberg's 'profound misunderstanding of serial FUNCTIONS ... as engendered ... by the serial principle' (Pierre Boulez, 'Schoenberg is Dead', *Stocktakings*, 209-214, p. 212-213), a connection that falls outside the scope of this study. For a thought-provoking assessment of Schoenberg's poetics with direct implications for a reading of his relevance to this question, see Carl Dahlhaus, 'Schoenberg's Poetics of Music', in his *Schoenberg and the New*

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Elsewhere, Schoenberg continued,

The elements of a musical idea are partly incorporated in the horizontal plane as successive sounds, and partly in the vertical plane as simultaneous sounds ... The unity of musical space requires an absolute and unitary perception. In this space ... there is no absolute down, no right or left, forward or backward. Every musical configuration, every movement of tones has to be comprehended as a mutual relation of sounds, of oscillatory vibrations, appearing at different times and places.<sup>51</sup>

Despite his reservations about Schoenberg's use of the method, Boulez acknowledged its foundational relevance to the post-war avant-garde in 1952 when he wrote that its 'aesthetics, poetics and technique are all in phase' and that 'one can detect here a discipline that will have fruitful consequences'.<sup>52</sup> Cage's 1937 belief that 'new methods will be discovered, bearing a definite relation to Schoenberg's twelve-tone system' was part of a different, related reading of the potential in that model.<sup>53</sup> In it, he could read that the 'principle of form', the 'principle of organisation or man's common ability to think' would connect the historical foundations of music to the music of the future on the eve of the Second World War.<sup>54</sup>

The attitude of good will in which the close

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*Music*, trans. Derrick Puffett and Alfred Clayton (Cambridge, 1987), 73-80, especially p. 76. See also Peter Franklin, *The Idea of Music: Schoenberg and Others* (Basingstoke, 1985).

<sup>51</sup>Schoenberg, 'Composition with Twelve Tones'. Quoted here from Peter Stacey, *Boulez and the Modern Concept* (Aldershot, 1987), 10.

<sup>52</sup>Boulez, 'Schoenberg is Dead', 211.

<sup>53</sup>John Cage, 'The Future of Music: Credo', 5.

<sup>54</sup>Cage, 'The Future of Music: Credo', 5.

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correspondence between Boulez and Cage was conceived on the other side of that global catastrophe was part of a wider feeling of general post-war optimism, but it also reflected an unusual point of arrival in the history of the development of musical language. That Boulez's writings chart the gradual -- and eventually total -- ebbing away of that benevolence was part of the natural tension created by two strong creative personalities grappling with an elusive and challenging contemporary problem. In this light, while Boulez and Cage were both engaged in reconciling the central inheritance of their generation, they also maintained an ongoing struggle with each other that has, in turn, influenced a divergent reading of their post-war contributions. To this end, the belief that Boulez and Cage embody 'two radically opposed streams of post-war music history' cannot be separated from the pivotal role Boulez's texts played in driving an independent reception.<sup>55</sup>

At the same time, the commentaries themselves take on an especially resonant quality. In part, they can be seen as what Bloom has called 'wilful misreadings' -- contemporary examples of intentional revision that are 'usually the most interesting interpretations' of their subject.<sup>56</sup> They also tell us an important related fact about the music of the post-war period: that it became increasingly difficult to maintain that a composer's control over his material was an essential element

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<sup>55</sup>Nattiez, 'Introduction', 3.

<sup>56</sup>Bloom, *The Anxiety of Influence*. Quoted here from Straus, *Remaking the Past*, 14.

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in a musical work after serialism. As one reading of the potential embodied in the serial inheritance, Boulez's is a welcome solution and offers a powerful promise of renewal in an artistic climate prone to pluralist relativism. His defence of the superiority of his reading of the serial inheritance is less convincing in his writings than in his compositions, however, and his articulation of an independent serially derived indeterminate musical work is neither wholly consistent nor entirely distinct from the claims of Cage's alternative. The conclusions of this study offer a way of bridging the 'divergent streams' in post-war music by drawing their courses together through the unifying potential at the heart of serialism's dangerous incongruity. At the same time, these findings bring a new understanding of Boulez's rejection of Cage's method of composition by tossing dice. As he implied in his letter to Cage in 1951, it was an act of historical necessity: 'For after all, in the interpolations and interferences of the different series ... there is already quite enough of the unknown'.<sup>57</sup>

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<sup>57</sup>Boulez, Document 35, in Nattiez, *Correspondence*, 112-127, p. 112-113.

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Catalogue of Principal Works by Boulez

in alphabetical order

(Sources: Nattiez, *Le Combat de Chronos et d'Orphee*, 118-119;  
Jameux, *Pierre Boulez*, 369-372)

<i>cummings ist der Dichter</i>	
for small choir and chamber orchestra	1970
(published by Universal, 1976)	
revision for medium choir and chamber orchestra	1986
<i>Dérive</i> for small ensemble	1984
<i>Deux Études</i> for single-track tape	1952
1. <i>Étude sur un son</i>	
2. <i>Étude sur un accord de sept sons</i>	
<i>Dialogue de l'ombre double</i>	1985
for clarinet and electro-acoustic equipment	
<i>Domaines</i>	
for clarinet solo	1961-68
for solo and small ensemble	1961-68
(published by Universal, 1970)	
revised	1970
second revision	1975
<i>Doubles</i> for large orchestra	1957
<i>Éclat</i> for fifteen instruments	1965
<i>Éclat/Multiples</i> (developed from <i>Éclat</i> )	1970
for twenty-seven instruments	
in preparation	
'...explosante-fixe...'	
for variable instruments	1971
(published Tempo, 1972)	
for flute and small ensemble	
with electronics	1972
fragment of a new version	1991

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<i>Figures-Doubles-Prismes</i> developed from <i>Doubles</i>	
for large orchestra	
first version	1963
second version	1968
(published by Universal, MS)	
final version	1985
<i>Initial</i> for ensemble	1987
<i>Livre pour quatuor</i>	
version for string quartet	1948-49
(published by Heugel, 1960 without part IV)	
<i>Livre pour cordes</i>	
reorchestration of Ia and Ib from	
<i>Livre pour quatuor</i>	1968
new version	1988
<i>Le Marteau sans maître</i>	
for small ensemble	
first version	1954
revision	1957
<i>Mémoriale</i>	
(subtitled: ' <i>...explosante-fixes...</i> ' <i>originel</i> )	
for flute solo and eight instruments	1985
(published by Universal, 1985)	
<i>Messagesquise</i>	
for solo cello and six cellos	1976
<i>Notations</i>	
twelve pieces for piano	1945
twelve pieces for orchestra	1980
orchestration of parts v and vi	
in preparation	
Piano Sonatas:	
First Piano Sonata	1946
(published by Amphion, 1951)	
Second Piano Sonata	1948
(published by Heugel, 1950)	
Third Piano Sonata	
<i>Antiphonie</i>	
fragment published as <i>Sigle</i>	1968
( <i>Sigle</i> withdrawn)	
<i>Constellation-Miroir</i>	1963
(published by Universal, 1963)	
<i>Trope</i>	1957
(published by Universal, 1961)	

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*Strophe and Séquence*  
unfinished

*Pli selon pli*

*Improvisation I*

for soprano and small ensemble 1957  
(published by Universal, 1958)  
for soprano and orchestra 1962  
(published by Universal, 1977)

*Improvisation II*

for soprano and small ensemble 1957  
(published by Universal, 1958)

*Improvisation III*

for soprano and orchestra  
first version 1959  
revised version 1983-84  
definitive version 1984-85

*Don*

first version  
for soprano and piano 1960  
second version  
for soprano and orchestra 1962  
(published by Universal, 1967)  
third version 1990

*Tombeau* for large orchestra

first version 1959  
second version 1962  
(published by Universal, 1971)

*Poésie pour pouvoir*

for orchestra and five-track tape 1958

*Polyphonie X*

1950-51  
part of projected *Polyphonie*

*Répons*

for six soloists, chamber orchestra and electro-acoustic  
equipment

Paris version 1981  
(published by Universal, MS)  
London version 1982  
Turin version 1984

*Rituel in memoriam Maderna*

1974-75  
for eight orchestral groups  
(published by Universal, 1975)

*Le Soleil des eaux*

version for radio  
for voice and orchestra 1948  
for voices and chamber orchestra 1950  
(withdrawn)  
for solo voices, choir and orchestra 1958

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(published by Heugel, 1959)	
fourth for soprano, chorus and orchestra	1965
(published by Heugel, 1968)	
<i>Sonatina</i> for flute and piano	1946
(published by Amphion, 1954)	
<i>Structures I</i> for two pianos	1951-52
(published by Universal, 1955)	
<i>Structures II</i> for two pianos	1956-61
(published by Universal, 1972)	
<i>Le Visage Nuptial</i>	
for small ensemble	1946-47
for soloists, chorus and orchestra	1951-52
(published by Heugel, 1959)	
revision	1988-89

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