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**David Tudor and the performance of American experimental
music, 1950–1959**

Holzaepfel, John, Ph.D.

City University of New York, 1994

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A

DAVID TUDOR AND THE PERFORMANCE OF
AMERICAN EXPERIMENTAL MUSIC, 1950-1959

by

JOHN HOLZAEPFEL

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

1994

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THE CITY UNIVERSITY OF NEW YORK

Abstract

David Tudor and the Performance of American Experimental Music, 1950-59

by

John Holzaepfel

Adviser: Professor H. Wiley Hitchcock

The importance of David Tudor to the music of the postwar avant-garde has been as often acknowledged as it has gone unexamined. Based on direct work with Tudor's collections of manuscripts, papers, correspondence, and programs, this dissertation is the first historical and analytic study of a career unique in twentieth-century musical performance.

The first two chapters discuss Tudor's early training and the radically new musical orientation he underwent at the end of 1950 through a fortuitous encounter with the aesthetics of Antonin Artaud. The remaining four chapters concentrate on Tudor's realizations of selected works by the principal American experimental composers of the 1950s: Morton Feldman's *Intersections 2* and *3*, Earle Brown's *Twenty-five Pages* and *Four Systems*, Christian Wolff's *Duo for Pianists I* and *For Pianist*, and John Cage's "Solo for Piano" from the *Concert for Piano and Orchestra*. The order of presentation reflects the evolution of Tudor's practice of

preparing his own performance material from a composer's score. A discussion of the context and development of each composer's notational techniques and a description of the works in terms of their notations and the problems these pose for the performer are followed by an analysis of Tudor's realization, which proceeds by a close study of the texts involved: the composer's score, Tudor's work notes, and his own performance material.

The systematic extension of playing techniques was an essential component in Tudor's makeup long before his encounter with experimental music. This remained central to his musical thinking throughout the 1950s and in fact grew as he used the new music as a basis for pianistic innovation. Tudor's role in the composition of American experimental music during this period and his legacy as a pianist are intertwined: his overriding interest in the music lay in the challenges presented by its notational problems, problems Tudor regarded as puzzles. And his solutions were, throughout the 1950s, invariably in terms of what he could do with the piano, either by extending existing techniques or inventing new ones. In this regard, the dissertation is a contribution to the history of piano-playing.

for e
sine quo non

Preface

The importance of David Tudor to the distribution, reception, and even the composition of American experimental music -- indeed, to the music of the entire postwar avant-garde -- while parenthetically acknowledged now and then in the literature on the period, has gone unexamined. This is scandalous. I do not use the word lightly. Tudor's role as a performer of new music after 1950 was not merely interpretive but generative: more than one composer has said that without Tudor's insight, imagination, and pianistic virtuosity his music would not have come into being.

But what did this mean? Though the encomiums are plentiful, none of the composers has been specific about what it was that made Tudor unique. In part, this is due to Tudor's reticent and even secretive nature. "He's a great solver of puzzles -- and producer of them," Cage told me. No one, whether writing about Tudor or discussing him with me, could answer what I thought was a simple question: how did Tudor go about his work? Cage's observation was by no means uncommon; by all accounts, Tudor was at once indispensable and remote. I have written the following study as the first step toward answering the question myself.

One thing was known, however. When performing music in which some degree of indeterminacy is a compositional technique, Tudor did not limit himself to improvising from the

composer's score but undertook a rigorous series of preparatory steps, including measurements, calculations, computations, and conversion tables, translating the results into a more conventional notation for use in performance. Not only do all of Tudor's performance scores survive, but so do virtually all of his work materials leading to them: notes, tables, charts, lists, sketches. Explicating Tudor's working methods became the principal goal of this study, which I have organized as follows:

The first two chapters are essentially background in nature. In Chapter 1, I discuss Tudor's early training, especially those factors most influential to his work in the 1950s. In Chapter 2, I examine the radically new musical orientation Tudor underwent at the end of 1950 through a fortuitous encounter with the aesthetics of Antonin Artaud.

In the remaining four chapters, the core of the dissertation, I concentrate on Tudor's realizations of those works by the principal American experimental composers of the 1950s which pose the most difficult notational problems to the performer. The order of presentation reflects the evolution of Tudor's practice of preparing his own performance material from a composer's score: Morton Feldman's *Intersections 2 and 3*, Earle Brown's *Twenty-five Pages and Four Systems*, Christian Wolff's *Duo for Pianists I* and *For Pianist*, and the "Solo for Piano" from John Cage's *Concert for Piano and Orchestra*. After discussing the context and

development of the composer's notational techniques, I describe the works in terms of their notations (not the compositional processes they embody or encode) and the problems these pose for the performer. Then I turn to Tudor's solution.

In doing so, I have adapted Collingwood's maxim and reconstructed the questions Tudor asked, not of the composers but of their texts. These texts were what he received, and these -- not the polemics, arguments, aesthetic questions which surrounded them -- were what he addressed. Tudor's concern with new music was as a performer of it, and his approaches to it were at all times practical in the root sense; that is, with the aim of making the composer's notations practicable. I proceed by a close study of the texts involved: the composer's score, Tudor's work notes, and his own performance material.

In the early chapters, I show that the systematic and deliberate extension of playing techniques was an essential component in Tudor's makeup long before his encounter with experimental music. And I show, in my analyses of his realizations, that this remained central to his musical thinking throughout the 1950s, that in fact it grew as he used the new music as a basis for pianistic innovation.

Of the four appendices to this study, three contain material relating to Cage's *Concert for Piano and Orchestra* or to Tudor's realizations of that work. The fourth, an

index of first performances given by Tudor through the year 1960, shows Tudor's role in the distribution of new music during this phase of his career.

David Tudor has now spent more than half of his professional life almost entirely away from the piano. But the first phase of his work as a pianist came to a close at the end of the 1950s. Tudor's role in the composition of American experimental music during this period and his legacy as a pianist are intertwined: his overriding interest in the music lay in the challenges presented by its notational problems, problems Tudor regarded as puzzles. And his solutions were, throughout the 1950s, invariably in terms of what he could do with the piano, either by extending existing techniques or inventing new ones. To the extent that I focus on this aspect of Tudor's achievement, then, the dissertation is a contribution to the history of piano-playing.

Acknowledgements

Above all to David Tudor himself, who was far more than cooperative: his generosity in allowing me unlimited access to his collection of manuscripts, correspondence, and programs provided the very foundation for this entire project and made of my task a scholar's dream.

To H. Wiley Hitchcock, whose editorial acumen was perhaps not among his many accomplishments recently feted on the occasion of his retirement but which should be apparent in the following pages. Where it is not, the reader may assume that I remained obstinate.

To Austin Clarkson, whose expertise in the music of Stefan Wolpe was helpful in establishing the accuracy, sometimes even the identities, of the entries for that composer in Appendix D.

To my wife, Joan Callan, whose forms of support and understanding and perpetual willingness to act as a responsive audience -- to listen, criticize, and clarify ideas, passages, sections, and finally entire chapters -- can neither be enumerated nor adequately acknowledged. She also lent her hand (far steadier than mine) and patience (far greater than mine) to the task of mounting the illustrations.

The analytic charts in Chapter 5 reflect the calligraphic skills of Arlo McKinnon, Jr.

Two Summer Research Fellowships from the CUNY Graduate School enabled me to see, in the crucial early stages of research, that doing justice to my subject was going to require a full-length study.

In the course of researching, writing, and rewriting this dissertation I spoke with numerous composers, artists, and performers, more than those whose names appear in its

pages. Without exception, the response to my request for information or an interview was typified by that of Richard Lippold, whose first words, when told that a study of David Tudor was under way, were "It's about time."

One of these people deserves special acknowledgement. John Cage's capacity to give whatever was asked of him by anyone is one of the qualities most missed by those who knew him. His support for this project was unstinting, and his generosity extended not only to his time, whenever I asked for it, but to giving me a sketchbook in which I found his realization of Wolff's *Duo for Pianists I*, without which a good deal of Chapter 5 would not have been written in its present form. He also provided me with addresses, telephone numbers, and introductions to many of Tudor's colleagues, urging, "You must speak with everyone who ever knew or worked with him." That has not been possible, of course, in studying even one part of a career that for more than forty years has been at the nexus of new music. But "demonstrating the practicality of the impossible," though fortunately not the task of the scholar and historian, was standard practice for both Cage and Tudor, as I have tried in the following pages to show.

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Portions of this dissertation previously appeared, in different form, in "The Tudor Factor," in *John Cage Anarchic Harmony*, ed. Stefan Schädler and Walter Zimmermann (Mainz: Schott, 1992), 43-53, and will appear in "The Roles of David

Tudor in the Early Repertory of The Cunningham Dance Company," in *Choreography and Dance*, Special Issue Devoted to Merce Cunningham, ed. David Vaughan (forthcoming).

TABLE OF CONTENTS

PREFACE vii

1. FORMATION OF THE PIANIST. 1

2. "A CHANGE IN MUSICAL PERCEPTION" 19

3. IMPLICATIVE GRAPHICS I: FELDMAN, *INTERSECTIONS 2 AND 3* 46

 Background 46

Intersection 2 (1951) 49

 Notation 49

 Problems of Performance 53

Intersection 3 (1953) 54

 Excursus: The Composer-Performer Relationship 56

 Problems of Performance 59

 Errata in the Published Version of *Intersection 3* 63

 Text 1/Text 2 63

 Tudor's Realization of *Intersection 3* 65

 Terminology 65

 Notation 67

 Register 72

 Dynamics and Pedalling 74

 Performance 75

 Tudor's Realization of *Intersection 2* 78

 Conclusions 81

4. IMPLICATIVE GRAPHICS II: EARLE BROWN, *TWENTY-FIVE PAGES AND FOUR SYSTEMS* 86

 Introduction 86

Twenty-five Pages (1953) 92

Four Systems (1954) 95

 Notation 96

 Duration, Temporal Sequence, and Dynamics 98

 Problems of Performance 99

 Tudor's Realization of *Four Systems* 100

Four Systems, Second Realization 110

 Genesis 110

Notation	113
Dynamics	121
Tudor's Realization of <i>Twenty-five Pages</i>	122
Conclusions	130
5. THE NOTATION OF CONTINGENCY: CHRISTIAN WOLFF, <i>DUO FOR PIANISTS I AND FOR PIANIST</i>	133
Introduction	133
<i>Duo for Pianists I</i> (1957)	135
Notation	137
Problems of Performance	142
The Two Realizations of <i>Duo for Pianists I</i>	144
Genesis	144
Cage's Realization of <i>Duo for Pianists I</i>	146
Tudor's Realization of <i>Duo for Pianists I</i>	150
<i>For Pianist</i> (1959)	160
Tudor's Realization of <i>For Pianist</i>	167
Content and Performance Order	167
Temporal Structure	171
Comparative Analysis of Selected Pages of Text 2	174
Conclusions	195
6. INDETERMINACY: CAGE, <i>CONCERT FOR PIANO AND ORCHESTRA/SOLO FOR PIANO</i>	197
Introduction	197
Background: Tudor and Cage in 1958	201
Genesis of the <i>Concert for Piano and Orchestra</i>	202
Description of Text 1	204
Morphology of Text 2	208
Chronology of the First Realization	208
Reconstruction of Text 2/ <i>Concert for Piano and Orchestra</i>	211
Duration and Timing	216
<i>Concert for Piano and Orchestra, Second Realization</i>	219
Background: Cage's Lectures in Temporal Structures	221
<i>Indeterminacy</i>	224
Demarcation of Duration	232
Selection of Graphs	234
Determination of Content	235
Temporal Structure	237
The Two Versions of Text 2/ <i>Solo for Piano</i>	241
Some Notational Aspects of Text 1	244

General Problems of Performance 304
 Mobility 306
 Simultaneities 308
 Use of Electronic Sound Sources 309

Summary 312

EPILOGUE 313

APPENDIX A:
 Cage, draft of letter or program note on the
Concert for Piano and Orchestra, 29 January 1958 . 322

APPENDIX B:
 Tudor's tabulation of the 84 graphs in the
Concert for Piano and Orchestra, "Solo for Piano" 323

APPENDIX C:
 Cluster techniques used and/or invented by Tudor
 for his first realization of Cage, *Concert for
 Piano and Orchestra* graph J 5 325

APPENDIX D:
 First Performances by David Tudor through 1960 . . 328

BIBLIOGRAPHY

I. Manuscript Sources in the David Tudor
 Collection 363

II. Other Sources 387

LIST OF ILLUSTRATIONS

Figure

3-1. Feldman, *Intersection 2*, p. 1 50

3-2. Feldman, *Intersection 2*, p. 6: subdivision of coordinate squares and segments of multiple squares into halves (system 1); diamond-shaped noteheads signifying harmonics (system 3) 51

3-3. Feldman, *Intersection 3*, m. 297 60

3-4. Feldman, *Intersection 3*, mm. 1-3: compound *cnd* (m. 1), simple *cnd*'s (m. 2), and complex set (m. 3) 66

3-5. Tudor, realization of *Intersection 3*, p. 1 68

3-6. Tudor, realization of *Intersection 3*: sonorities 8-10 70

3-7. Feldman, *Intersection 3*, mm. 8-10 70

3-8. Feldman, *Intersection 3*: Text 1, m. 295, (Fig. 3-8a) and Tudor's realization in Text 2 (Fig. 3-8b) 71

3-9. Feldman, *Intersection 3*: Text 1, m. 297 (Fig. 3-9a), and Tudor's realization in Text 2 (Fig. 3-9b) 72

3-10. Tudor, realization of *Intersection 3*, p. 5: realization of Text 1, m. 408 73

3-11. Tudor, realization of *Intersection 3*: realization of Text 1, m. 418 74

3-12. Tudor, realization of *Intersection 3*, p. 1: system 3, sonority 10 78

3-13. Tudor, realization of *Intersection 2*, fol. 1r 80

4-1. Brown, *Folio: December 1952* 89

4-2. Brown, *Twenty-five Pages*, p. 1, showing modified notation of dynamics 94

4-3. Brown, *Four Systems*: original autograph on cardboard 97

Fig.		
4-4.	Tudor, first work sheet for realization of Brown, <i>Four Systems</i> : piano-key numbers based on template measurements of Text 1	103
4-5.	Tudor, work sheet for realization of Brown, <i>Four Systems</i> : first page of caliper measurements of lengths of notation in Text 1.	104
4-6.	Tudor, realization of <i>Four Systems</i> , p. 2	105
4-7.	Tudor, work sheet for measurement of notation in Brown, <i>Four Systems</i> , systems B↑ and C↓	108
4-8.	Tudor, realization of <i>Four Systems</i> , p. 1	109
4-9.	Tudor, second realization of <i>Four Systems</i> , p. 1	114
4-10.	Tudor, memo for realization of <i>Four Systems</i> for Two Pianos: comparison of dimensions between Text 1 and Text 2	116
4-11.	Tudor, conversion table for realization of <i>Four Systems</i> for Two Pianos	118
4-12.	Tudor, first page of comprehensive table for realization of <i>Four Systems</i> , system A	120
4-13.	Tudor, realization of <i>Twenty-five Pages</i> , fol. 1r	126
4-14.	Tudor, realization of <i>Twenty-five Pages</i> , fol. 1v, system 3	127
4-15.	Tudor, realization of <i>Twenty-five Pages</i> , fol. 1v: compacted abbreviations for dynamic markings <i>f-ffff</i>	129
5-1.	Wolff, <i>Duo I for Pianists</i> , p. 1	138
5-2.	Cage, sketchbook, fol. 28v: list of works and timings for concert at IFNM Darmstadt, 3 September 1958	145
5-3.	Cage, sketchbook, fol. 17r: performance plans and timings for Wolff, <i>Duos for Pianists I and II</i>	147
5-4.	Cage, sketchbook, fol. 17v: realization of Wolff, <i>Duo for Pianists I</i> , p. 1	149

Fig.	
5-5.	Tudor, work sheet for realization of Wolff, <i>Duo for Pianists I</i> : first conversion table for <i>secondo</i> 152
5-6.	Tudor, work sheet for realization of Wolff, <i>Duo for Pianists I</i> : second conversion table for <i>secondo</i> 153
5-7.	Tudor, content sketch for realization of Wolff, <i>Duo for Pianists I</i> , version 1 155
5-8.	Tudor, realization of Wolff, <i>Duo for Pianists I</i> , first version, p. 1 157
5-9a.	Wolff, <i>For Pianist</i> , p. 1: facsimile of composer's autograph 164
5-9b.	Wolff, <i>For Pianist</i> , p. 1: copy by David Tudor 165
5-10.	Tudor, content sketch for realization of Wolff, <i>For Pianist</i> , p. 1 168
5-11.	Tudor, work sheet for realization of Wolff, <i>For Pianist</i> : performance order of pages 1-10 170
5-12.	Tudor, realization of Wolff, <i>For Pianist</i> , p. 1 172
5-13.	Wolff, <i>For Pianist</i> , p. 1: analytic chart 176
5-14.	Wolff, <i>For Pianist</i> , p. 5 183
5-15.	Wolff, <i>For Pianist</i> , p. 5: analytic chart 184
5-16.	Tudor, realization of <i>For Pianist</i> , p. 5: version 1 185
5-17.	Tudor, realization of <i>For Pianist</i> , p. 5: version 2 185
5-18.	Wolff, <i>For Pianist</i> , p. 2 187
5-19.	Wolff, <i>For Pianist</i> , p. 2: analytic chart 188
5-20.	Tudor, realization of <i>For Pianist</i> , p. 2 193
6-1.	Cage, <i>Concert for Piano and Orchestra</i> : Solo for Piano, p. 1 206

Fig.	
6-2.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra</i> : sketch for performance plan 213
6-3.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra</i> : performance plans for rehearsal and concert of 15 May 1958 215
6-4.	A flow-chart showing compositions derived from or performable with the <i>Concert for Piano and Orchestra</i> 231
6-5.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : tables showing conversions of 1-30 to 200-5400 and 180-5400 . . . 233
6-6.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : first page of Master Table showing performance plan for Text 2/ <i>Solo for Piano</i> 236
6-7.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph B 9 245
6-8.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : content sketch for graph B 9 246
6-9.	Tudor, Text 2/ <i>Solo for Piano</i> , p. 1 248
6-10.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graphs AC 21 and AE 21 249
6-11.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : list of specifications for readings of graphs AC 21 and AE 21 251
6-12.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph BR 51 253
6-13.	Tudor, Text 2/ <i>Solo for Piano</i> , p. 4: first reading of graph BR 51 255
6-14.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph BP 51 256
6-15.	Tudor, Text 2/ <i>Solo for Piano</i> , p. 28: first reading of graph BP 51 257

Fig.	
6-16.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph CE 59 259
6-17.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : content sketch for graph CE 59 260
6-18.	Tudor, <i>Text 2/Solo for Piano</i> , p. 4: first reading of graph CE 59 261
6-19.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph CD 57 262
6-20.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : content sketch for graph CD 57 264
6-21.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : list of specifications for realization of graph CD 57 265
6-22.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph AS 31 266
6-23.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph K 8 268
6-24.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : content sketch for graph K 8 269
6-25.	Tudor, <i>Text 2/Solo for Piano</i> , p. 29: first reading of graph K 8 270
6-26.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph AI 36 271
6-27a.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : content sketch for graph AI 36 273
6-27b.	Tudor, <i>Text 2/Solo for Piano</i> , p. 4: first reading of graph AI 36 274
6-28.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph AR 31 275
6-29.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : list of measurements for graph AR 31 276

Fig.

6-30.	Tudor, <i>Text 2/Solo for Piano</i> , p. 30: fourth reading of graph AR 31	277
6-31.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph AK 49	279
6-32.	Tudor, <i>Text 2/Solo for Piano</i> , p. 26: first reading of graph AK 49	280
6-33.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph BB 45	282
6-34.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : list of specifications for realization of graph BB 45	284
6-35.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : second list of specifications for graph BB 45	286
6-36.	Tudor, <i>Text 2/Solo for Piano</i> , p. 2: readings 8 and 11 of graph BB 45	287
6-37.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph BY 54	288
6-38.	Tudor, <i>Text 2/Solo for Piano</i> , p. 2: first reading of graph BY 54	290
6-39.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph BT 54	291
6-40.	Tudor, <i>Text 2/Solo for Piano</i> , p. 4: first reading of graph BT 54	293
6-41.	Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : graph CC 57	295
6-42.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : first work sheet for graph CC 57	296
6-43.	Tudor, realization of Cage, <i>Concert for Piano and Orchestra/Solo for Piano</i> : second work sheet for graph CC 57	300
6-44.	Tudor, <i>Text 2/Solo for Piano</i> , p. 31	303
6-45.	Tudor, <i>Text 2/Solo for Piano</i> , p. 57	305

Fig.

6-46. Tudor, *Text 2/Solo for Piano*, p. 23: attack point
ap 1350 310

Appendix C:

Tudor, first realization of *Concert for Piano and
Orchestra*: realization of graph J 5 327

Epigraph

Interpretation is understanding in action; it is the immediacy of translation. . . .

[N]o musicology, no music criticism, can tell us as much as the action of meaning which is performance. . . . Unlike the reviewer, the literary critic, the academic vivisector and judge, the executant invests his own being in the process of interpretation. His readings, his enactments of chosen meanings and values, are not those of eternal survey. They are a commitment at risk, a response which is, in the root sense, responsible. . . .

The immediate point is this: in respect of meaning and of valuation in the arts, our master intelligencers are the performers.

George Steiner, *Real Presences*

Motto

Nimm von vorherein an, daß auf dem Klavier alles möglich ist, selbst wo es dir unmöglich scheint oder wirklich ist.

Assume from the beginning that anything is possible at the piano, even if to you it seems, or in fact is, impossible.

Ferruccio Busoni, *Übungsregeln für Klavierspieler*

Chapter 1

Formation of the Pianist

In view of his subsequent musical disposition, three decisive events stand out in David Tudor's formative years. These were his initial encounter with music of the twentieth century, his entry into the professional world of contemporary music through his association with Irma and Stefan Wolpe, and the influences -- musical, pianistic, and aesthetic -- of Ferruccio Busoni. They are the subject of this chapter.

Born in Philadelphia on 20 January 1926, Tudor began piano study at the age of six with Caroline Clinton Cook, a local teacher with whom, Tudor recalled, he "played a lot of Bach."¹ From the very beginning, Tudor was drawn to the mechanics as well as the music of the instrument.

I never had any choice: the moment I was shown a piano, I had to see what it was all about and that was that.²

Tudor's mother, who died when he was two years old, had been a pianist reputedly "able to play anything." His father was

¹ Unless otherwise indicated, information on Tudor's training and early career in this chapter is based on the author's interview with Tudor on 17 January 1992.

² Teddy Hultberg, interview with David Tudor, Düsseldorf, 17-18 May 1988. I am grateful to David Tudor for providing me with a transcript of this interview.

an amateur organist who, seeing his son's curiosity about the instrument, took him to audition for H. William Hawke, organist and music director of St. Mark's Church. Hawke agreed to take the eleven-year-old boy as a pupil, *gratis*, for an initial period of three years.

In addition to the organ Tudor studied theory, harmony, and composition with Hawke. Furthermore, as music director at St. Mark's, Hawke programmed motets by Lassus, Victoria, and Palestrina as well as liturgical chant, thereby opening new vistas to his student. "It was a real education", Tudor said, "one that I couldn't have gotten, or which would have been difficult to get, without going to [music] school."

As an organ teacher, Hawke stressed two kinds of precision. "[He] taught me to be ultimately precise, both in faithfulness to texts and in listening to what I was doing."³ Faithfulness to the written score, a nascent if not altogether new idea in the 1930s, is a form of precision we shall do well to keep in mind when we consider the kinds of musical texts, and the problems of faithfulness to them, that Tudor was to address in the 1950s.⁴ The second kind

³ Austin Clarkson, interview with David Tudor, Stony Point, New York, 4 October 1982. I am grateful to Prof. Clarkson for providing me with a transcript of this interview.

⁴ Toscanini's effect on performance styles was already evident, especially in the United States, by the mid-1930s, and it increased exponentially after 1937 as a result of the distribution of his performances through radio broadcasts. Whether rigorous adherence to the written score is itself a form of distortion is, of course, another question.

of precision had to do with the nature of the instrument: the organ, having no inherent tone decay, requires particular attention to the cessation, rather than to the beginning, of a sound, a reversal of the pianist's principal point of aural orientation. It is also worth adding that, in light of his mature repertoire, studying the organ gave Tudor more of a foundation for his later performances than at first may be apparent. That is, playing upon two or more keyboard manuals as well as the pedals (essentially another keyboard) provided Tudor at an early age with a sense of the keyboard instruments as a *base of operations*.

Most of the music Tudor studied with Hawke was presumably drawn from the standard organ literature.⁵ Messiaen's *L'Apparition de l'Église éternelle* (1934), on the other hand, was still a recent and unfamiliar work when Hawke played through it for Tudor one day during their first year together. Tudor's recollection of the event suggests that Hawke's purpose may have been partly satirical, and Tudor's reaction was probably surprising to both teacher and pupil, but the effect of this first encounter with what was then contemporary music was both immediate and permanent:

I laughed right out loud when I heard it, and he himself tried not to laugh. He could not understand why I was laughing, but it was with joy [at] the intensities

⁵ This conclusion is based on the programs of Tudor's series of organ recitals at Swarthmore College in January 1944, briefly discussed below.

of the harmonies and the resonances, and you couldn't keep me away from it after that.⁶

Progress at the organ evidently came quickly, for at the age of twelve Tudor had become Hawke's assistant and began substituting for his teacher during the summer months at St. Mark's. And in the fall of 1943, at the age of seventeen, Tudor assumed the post of organist at Trinity Church in nearby Swarthmore.⁷ A few months later, on the five Sunday afternoons in January 1944, Tudor gave a series of organ recitals at Swarthmore College. Although the programs were essentially conventional, they included a number of twentieth-century compositions, including Messiaen's *L'Apparition de l'Église éternelle* as well as three pieces from *La Nativité du Seigneur* (1935).⁸

In spite of Tudor's prodigiousness and success at the organ, Hawke felt that, without giving up the instrument altogether, his pupil should resume his piano studies. Hawke's advice suggests that he was well aware of what Tudor soon learned for himself, namely, that the contemporary

⁶ Hultberg, interview. By "intensities of the harmonies," Tudor evidently meant the triadic superimpositions, and especially the use of the augmented triad, throughout Messiaen's piece.

⁷ He succeeded the church's regular organist, Wendell Lewis, who had been inducted into the armed forces. "New Organist Appointed," *The Trinity Chronicle* 1, no. 1, Trinity Church, Swarthmore, Pa., Sunday 26 September 1943. Newsletter in the David Tudor Collection.

⁸ *Les Bergers*, *Desseins Éternels*, and *Le Verbe*. Tudor remained affiliated with Swarthmore College, both as organist and as part-time vocal coach, until 1948.

literature for the organ was, at that time at least, hardly as sophisticated as Messiaen's pieces might have implied. Tudor therefore studied for a brief time with Josef Martin, a pupil of Harold Bauer. This proved unfruitful. But through his work at Swarthmore College, he found his next and most important piano teacher.

Irma Wolpe (née Schoenberg, later Rademacher) was teaching at Swarthmore and at the Settlement School in Philadelphia when, at a Swarthmore faculty gathering, Tudor heard her play music by her husband Stefan Wolpe. "I was quite thunderstruck," Tudor recalled. "[Her playing] had a vitality that was an unusual experience. I decided, almost instantly, that I would study with her." Wolpe's own account of their first acquaintance reveals her pride in her student.

I discovered him as a pale little boy, a dropout from high school. He didn't know the difference between piano and organ, he was an organ player. He heard me play Wolpe, he heard me play that "crazy" music; he heard the *Toccata* and he decided to study with me.⁹

⁹ Ellsworth Snyder, interview with Irma Wolpe Rademacher, New York City, 1975, cassette recording. Also indicative of her pride in Tudor is the fact that, by the time of this interview, Wolpe considered herself his mentor and only teacher.

The "dropout from high school" is an allusion to Tudor's chronic illness during the years 1942-44. When he recovered, he decided to devote himself entirely to his career, already under way, rather than take the time which completion of his school studies would have required.

A pupil of Cortot and Steuermann and a teacher of Dalcroze's eurhythmic techniques, Wolpe emphasized coordination and, Tudor said, was continually refining her own technique.¹⁰ By this time, however, it was apparent that coordination was not a problem for Tudor. His attitude toward the subject is revealing: "I didn't find it difficult, I found it interesting." Nonetheless, Tudor regretted that he did not transmit the precision and coordination he learned in studying with Hawke and Wolpe.

In a way, it's a shame I didn't teach. I mean, I was never in a situation where I had students who were gifted enough. And later on, when I did teach occasionally, I didn't have students who were bright enough to absorb what I had learned. And now [1992] it may be too late. I might have been useful if I had been able to pass that on to somebody later.

Despite her own role as a performer of her husband's works and Tudor's overriding interest in contemporary music, Irma Wolpe saw to it that her student made an acquaintance with the traditional piano literature. Even in this area,

¹⁰ For all his well-known technical lapses, Cortot was a methodical technician whose *Éditions de travail* of Chopin, Liszt, Schumann, Schubert, Mendelssohn, and Weber are particularly valuable for their diverse practicing techniques for untangling that literature's knottier passages. Also attesting to Cortot's interest in developing the pianist's coordination is his *Principes rationnels de la technique pianistique*, tr. by R. LeRoy-Métaxas as *Rational Principles of Pianoforte Technique* (both Paris: Éditions M. Senart, 1928). Steuermann, too, was known both for his preoccupations with pianistic problems and his occasional failures to solve them in public performance. David Porter discusses these and other aspects of Steuermann's playing in his essay "In Quest of a Star," in Edward Steuermann, *The Not Quite Innocent Bystander*. ed. Clara Steuermann, David Porter, and Gunther Schuller, tr. Richard Cantwell and Charles Messner (Lincoln: University of Nebraska Press, 1989), 186-200.

Tudor's inclinations were apparent. He was particularly drawn to works of the most formidable technical, intellectual, and musical demands. "He had a mind that only the most challenging things could stimulate", Wolpe recalled.

As a student he was methodical and systematic. Even at the age of seventeen he had an extraordinary library. Whatever he looked into, he looked into thoroughly. When he played Bach he studied ornamentation, fugue, construction. When he used to work on standard repertoire he was interested only in the big, difficult, complicated things, things like Liszt's *Transcendental Etudes*, Bach's *Goldberg Variations*, Beethoven's *Diabelli* [Variations] and the *Hammerklavier* [Sonata]. He also is a fabulous reader.¹¹

It was this interest in the most challenging kinds of music, one suspects, that led Tudor to copy out Beethoven's two-piano version of his *Große Fuge*, Op. 134 (still new music in the 1940s), for himself and another Wolpe pupil to play.¹²

Through Irma Wolpe Tudor soon met her husband Stefan, who also taught at the Settlement School (both Wolpes commuted twice weekly between Philadelphia and their home in New York). "It wasn't long", Tudor said, "before I persuaded [Irma Wolpe] to teach me some of her husband's mu-

¹¹ Harold C. Schonberg, "The Far-Out Pianist," *Harper's Magazine* (June 1960), 49-54; the passage quoted is on p. 50.

¹² The pupil was probably Jacob (Jack) Maxin, with whom Tudor performed Stravinsky's *Capriccio* for Two Pianos on a student recital on Tuesday 5 June 1945. Regarding the *Große Fuge* in its original medium, Stravinsky called it an "absolutely contemporary piece of music that will be contemporary forever." Igor Stravinsky and Robert Craft, *Dialogues and a Diary* (Garden City: Doubleday and Co., Inc., 1963), 24.

sic." He also studied composition and, more profitably, analysis with Stefan Wolpe.

In the composition studies that I made with Stefan, I didn't find that my work was convincing. I think I found his classes in analysis even more fruitful. You see, his teaching of composition always had an underlying Beethoven-like continuity, which he himself used or didn't use at will. I think it was an underlying method he used with students to get them started. When I was doing it myself, I was not inspired. I suppose I don't belong to that stream of composition.¹³

During the mid-1940s, Tudor himself frequently commuted between Philadelphia and New York to increase his opportunities for performing new music. In 1947, with the encouragement and assistance of the Wolpes, he moved permanently to New York, where he earned a living accompanying instrumentalists and, even more importantly, modern dancers.¹⁴

Whether or not Cage was accurate in claiming that dancers were always more receptive to new and unusual music than were musicians, modern dancers did support contemporary music -- especially contemporary American music -- in the most practical way by choreographing their dances to it. Tudor, therefore, was a partner in the frequent and repeated

¹³ Clarkson, interview.

¹⁴ His secondary source of income, alluded to above, was piano instruction. From 1948 to 1952, Tudor was a member of the faculty of Wolpe's Contemporary Music School on West 52nd Street in New York. (Cage's name appears in the list of the School's Board of Directors, but Cage recalled neither the School nor knowing Tudor through it.) "The Contemporary Music School Announces Its Fall-Spring Term 1948-49," brochure in the David Tudor Collection. During the summers of 1951-53, Tudor also taught piano at Black Mountain College.

performances of a wealth of music by composers whose work the modern dancers found compatible with their own goals. In terms of duration of the association and the number of contemporary works he performed in this role, the most important of these collaborations were with Jean Erdman, Katherine Litz, and Merce Cunningham. The earliest was with Erdman, to whom Tudor was probably introduced shortly after he moved to New York by another dancer, Doris Halpern (for whom Tudor was not an accompanist, however).¹⁵ Tudor was the accompanist for the Cunningham Company from its inception at Black Mountain College in the summer of 1953, an association that continues to the present day. And, with his devotion to new music, his advanced keyboard technique, and an extraordinary facility in sight-reading, it was in New York that Tudor's role as pianist for the Wolpe circle came to the fore. At weekly master classes, Tudor played works in progress by Wolpe's composition students as well as new works by Wolpe himself. One of the students was Morton Feldman, who was the same age as Tudor and who had begun studying with Stefan Wolpe in 1943 at about the same time Tudor began piano study with Irma Wolpe.

The most important of Wolpe's works that Tudor studied during this period was the *Battle Piece* of 1943-47. It even seems that Tudor's involvement had a direct bearing on

¹⁵ Jean Erdman, interview with author, New York City, 15 March 1992.

Wolpe's decision to continue and complete the work.¹⁶

Tudor played the three completed movements for Wolpe as the composer struggled with the remaining four.

I began working on it as he was composing the fourth part. . . . I recall we worked on a very small piano in his studio on the fourth part of the piece. I can remember his talking about the compositional concepts [and] I remember enjoying his description of what was going to happen later on in the piece in his amazing...his joy in finding the last movement, because that piece evolved so very slowly, and he realized that something radical had to happen, and he found it in the last part of the piece.¹⁷

Tudor himself was stimulated by the problem of continuity in the fourth movement.

The fourth movement cannot be understood without understanding the concepts behind it. In order to perform it you have to invent ways of presenting it which you don't find in [most of] the other movements. You find it a little bit in the last movement also, but...it's a piece the length and intensity of which makes it very difficult for listeners.¹⁸

Two traits which were to characterize Tudor's working methods began to appear as he studied the *Battle Piece*.

One, deriving from Irma Wolpe's teaching, was the need to invent new techniques in order to meet the demands of new

¹⁶ Information on Tudor's relation to the *Battle Piece* from Clarkson interview with Tudor. Wolpe dedicated the *Battle Piece* to Tudor, who gave the first performance of the work as part of a Composers Forum concert in New York on Saturday 11 March 1950. Tudor is currently preparing a critical edition of the *Battle Piece* for publication by the Stefan Wolpe Society.

¹⁷ Clarkson, interview.

¹⁸ Clarkson, interview.

music.¹⁹ The other was a habit of working alone to solve new kinds of pianistic problems. He studied the *Battle Piece* with Irma Wolpe, who at that time was unable to play it herself.²⁰ But he soon found that he was on his own.

I worked on it a little bit with Irma. Actually, it's the kind of work you have to do by yourself anyway. She helped me as much as she could.

Possibly as a result of this new situation, Tudor became dissatisfied with his piano-playing. Through Stefan Wolpe's discussions of his own teacher, Ferruccio Busoni, and led by the need "to understand the nature of virtuosity," Tudor began to investigate Busoni's music and writings, reading whatever he could find by Busoni and his pupils.²¹

¹⁹ Tudor told Clarkson that "her whole attack on the techniques of playing the piano came from studies and experiences and working with coordination. Of course, performing her husband's music she had to invent new techniques along the same line."

²⁰ Snyder, interview.

²¹ In the later 1940s, those available in English were the *Sketch of a New Aesthetic of Music*, tr. Theodore Baker (New York: G. Schirmer, ca. 1911) and Busoni's *Letters to His Wife*, tr. Rosamond Ley (London: Edward Arnold and Co., 1935). In addition, Tudor read Bernard van Dieren's portrait of Busoni in his *Down Among the Dead Men* (Freeport: Books for Libraries Press, Inc., Essay Index Reprint Series, 1967, originally published 1935); the chapter on Busoni is on pp. 20-101. Tudor may also have read, possibly with the help of the Wolpes, some of the essays later published in *The Essence of Music and Other Papers*, tr. R. Ley (London: Rockcliff, 1957), since, as I shall show, they contain remarks which are similar to Tudor's attitudes toward the role of the performing artist (see pp. 14-15, below). But this is sheer speculation on my part, since Ley's English translation appeared long after Tudor's active study of Busoni.

In Busoni's music, and in his innovative technical exercises (which Tudor also studied), he discovered new levels of musical imagination and pianistic coordination.²² He began to perform some of Busoni's compositions on programs in which he was otherwise engaged as accompanist.²³

In Busoni's writings, Tudor found a new way of regarding musical notation. "There is a paragraph in Busoni," he

²² The innovations -- e.g. scales played by turning the fingers over the hand rather than passing the thumb under, legato scales played with two fingers, arpeggios played by using up the five fingers instead of fixed smaller fingering patterns -- were part of a widespread rethinking of the possibilities of using the hand found in technical material by a number of pianists of the late Romantic era. The fifty-one exercises of Brahms, published in 1893 as a propaedeutic, it would seem, to his own piano music, are musically the most interesting examples of this genre. In addition to the two-volume selection from Busoni's fifteen books of *Übungen* (published 1917-25), compiled and with an introduction by Franzpeter Goebels (Wiesbaden: Breitkopf und Härtel, 1968), see also Rafael Joseffy's *School of Advanced Piano Playing* (New York: G. Schirmer, 1902), and Godowsky's massive *Studien über die Etüden von Chopin*, 5 vol. composed 1895-1914 (Berlin: Schlesinger, ca. 1914).

²³ For example, the *Toccata* (1922), which Tudor played on a recital in early 1948 by the saxophonist Sigurd Rascher, for whom Tudor was accompanist for more than a decade. Undated program in the David Tudor Collection.

Tudor's interest in Busoni marked the beginning of an abiding curiosity about what might be regarded as some of the fringe figures in the history of piano music, including Alkan, Gottschalk, and Busoni's pupil Gino Tagliapietra. For many years, Tudor collected and performed Gottschalk's music when it was still difficult to obtain, and Cunningham choreographed several dances ("Banjo," "The Waltz" from "Dime a Dance," and "Picnic Polka") either as a result of Tudor's suggestion to use Gottschalk's piano pieces or from hearing him play them. For Cunningham's often-repeated story about Tudor's playing of *The Banjo* sounding "like forty banjos going off at once", see Harris, *The Arts at Black Mountain College* (Cambridge: MIT Press, 1987), 234.

said, "which speaks of notation as an evil separating musicians from music, and I feel everyone should know that this is true."²⁴ This is apparently a reference to a passage in the *Entwurf einer neuen Ästhetik der Tonkunst* (1906) which Tudor would have read in Theodore Baker's English translation and which concludes with a sentence eerily prescient of Tudor's own later attitude towards a composer's notation:

Notation, the writing out of a composition, is primarily an ingenious expedient for catching an inspiration, with the purpose of exploiting it later. But notation is to improvisation as the portrait to the living model. It is for the interpreter to resolve the rigidity of the signs into the primitive emotion. . . . What the composer's inspiration necessarily loses through notation, his interpreter should restore by his own.²⁵

²⁴ David Tudor, "From Piano to Electronics," *Music and Musicians* 20 (August 1972), 24-26; the passage quoted is on p. 24. This "article" is in fact a presentation, in essay form, of an interview with Tudor by Victor Schoenfeld.

²⁵ *Sketch of a New Aesthetic of Music*, trans. Theodore Baker, in *Three Classics in the Aesthetics of Music* (New York: Dover Publications, Inc. 1962), 73-102. The passage quoted above appears on p. 84 of the Dover Edition, italics in original. Baker's translation of this passage is faulty in several respects. Here is Busoni's text, followed by my own translation of it:

Die Notation, die Aufschreibung, von Musikstücken ist zuerst ein ingeniöser Behelf, eine Improvisation festzuhalten, um sie wiedererstehen zu lassen. Jene verhält sich aber zu dieser wie das Porträt zum lebendigen Modell. Der Vortragende hat die Starrheit der Zeichen wieder aufzulösen und in Bewegung zu bringen. . . . Was der Tonsetzer notgedrungen von seiner Inspiration durch die Zeichen einbüßt, das soll der Vortragende durch seine eigene wiederherstellen.

Notation, the writing out, of pieces of music is above all an ingenious expedient for seizing an improvisation in order to revive it. But the former is related to the latter as the portrait is to the living model. The

From Busoni's other writings Tudor may have absorbed ideas that solidified his own developing sense of the role of the performing artist. Years later, Cage was to say that it was not in Tudor's nature to repeat what he had already done.²⁶ In his essay on "Art and Technique," Busoni wrote that

It is the distinguishing characteristic of the artist - I mean of the artist, and not those who merely practise an art - that he set himself new problems continually and looks for his satisfaction in the solution of them. . . . Both [the artist and the dilettante] are busy with difficulties but the dilettante hammers at those which the artist has already overcome and the artist constantly creates and conquers new ones for himself.²⁷

performer must loosen the rigidity of the signs once again and set them in motion. . . . What the composer, compelled by his inspiration, forfeits through [notational] signs the performer should restore through his own.

Entwurf einer neuen Ästhetik der Tonkunst, 2d, enlarged ed. (Leipzig: Insel-Verlag n. d.), 20 (orig. publ. Trieste: Schmidl-Vicentini, 1907).

In "From Piano to Electronics," *ibid.*, Tudor expressed Busoni's view in his own aphorism, "notation is the invention of the devil."

²⁶ "When I composed *Music of Changes*," Cage told Daniel Charles in 1968, "David Tudor applied himself completely to that music. At that time, he was the *Music of Changes*. And then, after a few years, that identification disappeared -- because it is in David's nature not to repeat what has been done -- because he must always go forward." *For the Birds: John Cage in Conversation with Daniel Charles* (Boston: Marion Boyars, 1981, hereafter cited as *For the Birds*), 178, italics in original.

²⁷ *The Essence of Music*, 180-81, originally published in *Signale der Musikalischen Welt* 35 (August 1909); the passages quoted here are on p. 180.

We find similar passages in Busoni's essay "On Routine":

. . . I think this way about music: that every case should be a new case, an "exception". That every problem, once solved, should experience no repeated attempts at solution. A theatre of surprises and sudden ideas and of what is apparently unprepared. . .

One is tempted to cry out "Avoid Routine!". Let every beginning be as if none had been before! Know nothing but rather think and feel through being able to do!²⁸

Finally, Bernard van Dieren's profile of Busoni in his *Down Among the Dead Men* seems to have contributed to Tudor's concept of the artistic personality. That is, when embarking on his career, Tudor briefly considered combining old and new music in his repertoire (this is, after all, the usual way of doing things when building a career) and even discussed this with two concert managers who had approached him and who, not surprisingly, encouraged him to take this path. But Tudor quickly abandoned the idea, and we must therefore ask, what *did* he set out to do?

Many a young conqueror's *élan* has been broken by the weight of distinctions and rewards hung upon him.

So wrote van Dieren of the Busoni he knew.²⁹ With an absence of careerism and self-promotion so rare in an artist of comparable experience and importance as to be unique, Tudor in effect renounced even the possibility of "distinc-

²⁸ *The Essence of Music*, 184-68, originally published in *Pan* (August 1911); the passages quoted here appear on pp. 184-85.

²⁹ *Down Among the Dead Men*, 63.

tions and rewards" by dedicating himself to the most difficult kind of repertory imaginable. By this I mean that the music with which he has been most closely associated as a pianist has "resisted the march of understanding," to use Cage's description of his own exemplary predecessors.³⁰ It is music that not only challenged Tudor as a performer but, more decisively, has so continually challenged the majority of its audiences that it has yet to be assimilated into even the avant-garde literature. It is in fact, with few exceptions, a repertory that died when Tudor ceased performing it.

In the early 1950s, as Tudor gradually became known to the world of new music, he developed a reputation as a somewhat reclusive and mysterious figure (albeit a perfectly friendly one).³¹ Indeed, for many years he was known almost exclusively through the result of an exchange -- if that is the word for it -- with a student at Black Mountain

³⁰ "The works of Joyce, Duchamp, and Satie in different ways have resisted the march of understanding and so are as fresh now as when they first were made." Cage, introduction to "James Joyce, Marcel Duchamp, Erik Satie: An Alphabet," in *X: Writings '79-'82* (Middletown: Wesleyan University Press, 1985), 53.

³¹ Even before he had met Tudor, Boulez referred to him, in a letter to Cage written in December 1951, as "the silent hermit" ("l'ermite silencieux"). *Pierre Boulez/John Cage: Correspondance et documents*, ed. Jean-Jacques Nattiez (Winterthur: Amadeus Verlag, 1990 [Veröffentlichungen der Paul Sacher Stiftung, 1], hereafter cited as *Correspondance*), 189.

College which became one of Cage's most frequently circulated stories:

One day down at Black Mountain College, David Tudor was eating his lunch. A student came over to his table and began asking questions. David Tudor went on eating his lunch. The student kept on asking questions. Finally David Tudor looked at him and said, "If you don't know, why do you ask?"³²

But this is not so distant from van Dieren's sketch of one side of Busoni's demeanor:

If sometimes he seemed detached and haughtily distant to naïvely insinuating youngsters it was because his spirit was strangely permeated with the mystery of music. This made him exclusive, for he wished to preserve it in the interest of the art he loved. He equally feared and loathed the familiarity of the slick professional and the ignorance of the amateur who would thoughtlessly challenge the mystery.³³

In sum, Tudor's artistic outlook was focused both on new music and on the unusual and rarely heard works of the earlier piano literature -- in both cases, on the unfamiliar. From this focus followed his belief that the task of the performing artist lies in accepting the challenges, in solving the problems, posed by a composer's work. We shall find that Tudor later transformed this relationship into one of mutual challenge between composer and performer. From this, in turn, followed his continual development and extensions, first, in the 1950s, of the capacities for piano-playing, then, in the 1960s, for musical performance itself.

³² Cage, *Silence* (Middletown: Wesleyan University Press, 1961), 266. The story is included in the recording *Indeterminacy* (1959), discussed below, in Chapter 6.

³³ *Down Among the Dead Men*, *ibid.*

In 1950, this outlook was tested by the work which was to place Tudor in the very center of the postwar avant-garde, the Second Piano Sonata of Pierre Boulez. In it, Tudor encountered a new problem, one which neither his training nor his experience in learning Wolpe's *Battle Piece* -- at that time the most difficult work in his repertoire -- was sufficient to solve.

Chapter 2

"A Change in Musical Perception"

I

In the spring of 1949, Cage and Merce Cunningham embarked on an extended visit to Europe. Virgil Thomson, who had been instrumental in helping Cage procure a Guggenheim Fellowship in order to conduct research on the music of Satie, suggested that Cage look up the young Pierre Boulez. This Cage did (almost upon arriving in Paris, he later said), and a complex friendship, an extensive and major correspondence, and a crucial link in the transmission of postwar music between Europe and the United States ensued.¹ When he and Cunningham returned to the United States in the

¹ See Virgil Thomson. *Virgil Thomson* (New York: Alfred A. Knopf, 1967, reprinted, with "a few minor corrections by the author," New York: Da Capo Press, Inc., n. d.), 354, and Calvin Tomkins, *The Bride and the Bachelors* (New York: Penguin Books, 1976), 103. Several years earlier, Thomson had introduced Cage to the music of Satie, to whom Cage became and remained deeply devoted.

The Boulez-Cage correspondence has proved to be indispensable to the historiography of postwar music. See *Pierre Boulez/John Cage: Correspondance et documents*, ed. and annotated by Jean-Jacques Nattiez (Winterthur: Amadeus, 1990 [Veröffentlichungen der Paul Sacher Stiftung, Band I]), hereafter cited as *Correspondance*. A complete English translation of the correspondence appeared in October 1993. See *The Boulez-Cage Correspondence*, trans. and ed. Robert Samuels (Cambridge: Cambridge University Press, 1993). The Boulez-Cage friendship had withered by the autumn of 1954, when Boulez and Cage met again in Paris, due largely to differences on the matter of chance operations in composition.

fall, Cage brought back the scores of several of Boulez's works, including a pre-publication copy of his largest composition to that time, the Second Piano Sonata, completed in 1948 but still unperformed.² Immediately upon his return to New York, Cage set about finding a pianist to introduce the work to an American audience. In his mind, the logical choice for this role was William Masselos.³

Cage had known Masselos's playing for some time. And, prior to his departure for Europe, he had heard Masselos give the first performance of Ives's First Piano Sonata on Thursday 17 February 1949. On the strength of that performance, it seems, Cage believed that Masselos was the most

² The first performance was given by Yvette Grimaud on Saturday 29 April 1950, on a program given at l'École Normale de Musique in Paris. Boulez himself did not hear the performance; he had left the day before for South America with the Jean-Louis Barrault Theater Company, of which he was music director. Grimaud may have also played the Sonata a second time, at the Sorbonne, at the end of April. *Correspondance*, 62, n. 2, 96, and 104, n. 5.

Grimaud gave the first performance of a number of other Boulez compositions: *Notations* (1945), the *Trois Psalmodies pour Piano* (1945), the First Piano Sonata (1946), and the First Book of *Structures* (1952), the latter with Yvonne Loriod. *Correspondance*, 88, n. 4. Her playing of these works was not always well received; Peyser cites an especially vicious example of this unfavorable criticism in *Boulez* (New York: Schirmer Books, 1976), 63-64; Nattiez gives a censored version of the same critique in *Correspondance*, 103-04, n. 5.

³ "I passed on the copy I had to William Masselos[,], who was at the time the best pianist I knew," Cage recalled. *For the Birds*, 123.

suitable pianist to play the Boulez Sonata.⁴ In any case, in his first letter to Boulez written after returning from Paris, Cage told his friend of his plans:

Encore de bonnes nouvelles: le <<League of Composers>> a l'envie de présenter ta musique ici <pour le premier fois> [sic]. Je pense qu'on a choisi le deuxième sonate pour piano et que William Masselos veut bien le travailler.⁵

More good news: the League of Composers wants to present your music here "for the first time". I think they've selected the Second Piano Sonata and that William Masselos would really like to work on it.

⁴ Masselos had performed Cage's own music as early as 1946, when, on a concert of music for prepared piano, he and Maro Ajemian played *A Book of Music* (1944) and the *Three Dances* (1945) (Ajemian also played four of the *Sonatas and Interludes* of 1948). The concert was given twice, on Tuesday and Wednesday 10-11 December; for reviews of the first concert, see R[oss] P[armenter], "Prepared Pianos Give Odd Program: John Cage, Inventor, Offers a Program of His Own Works Without Being Seen," *New York Times*, 11 December 1946, 40, and L[ou] H[arrison], "Ajemian-Masselos[:] 2 Pianists Play Works of Cage at Carnegie Concert," *New York Herald Tribune*, 11 December 1946, 26. Harrison's notice is both characteristic of the high professional standing Cage enjoyed by the mid-1940s and perceptive of what was to become one of his most important compositional and aesthetic precepts following his adoption of chance operations in 1950-51:

The present works . . . are all examples of this basic "square-of-the-phrase" idea, a concept that begins with *the distinction of chronological time, as separate from psychological time*, and establishes in its ramifications what this reporter considers to be the brightest gift to form in our time. In these and other pieces its original inventor has proved that the formulation will work under all needed circumstances and audibly to the untrained ear. (*italics added*)

⁵ John Cage to Pierre Boulez, Sunday 4 December 1949. *Correspondance*, 62. Here and throughout, I have reproduced both Cage and Boulez's original orthography, case, gender, etc.

But, as it turned out, Masselos did not play the Sonata. That responsibility devolved instead upon David Tudor.

Here I must correct an error in the historical record. One often reads that Cage met Tudor through their mutual friend Morton Feldman.⁶ But this does not agree with the few ascertainable dates of the early Cage-Tudor chronology. For one thing, the precise date of Cage's return from Europe is not known. His last European letter to his parents is dated 15 October.⁷ What is certain is that Cage was back in New York in time to hear the first performance of Wolpe's Sonata for Violin and Piano (1949) on a recital given by Tudor and Frances Magnes (the work's dedicatee) at Carnegie

⁶ For many years, Cage himself held to this version of the events. "[Feldman] told me that the first pianist to play the [Boulez Second Sonata] could only be David Tudor. And he introduced me to him. . . . That 'premiere' of the *Second Sonata* was the initial link between us." *For the Birds*, 123-124.

⁷ The first is dated 4 April. Cage's letters from Europe were gathered in a scrapbook and dated, presumably by his mother, Lucretia (Crete) Harvey Cage, who kept scrapbook records of her son's career from 1937 to 1954. The scrapbooks are now in the John Cage Archive, Northwestern University. James Pritchett lists the dates and postmarks of the letters in *The Development of Chance Techniques in the Music of John Cage, 1950-56* (Ph. D. diss., New York University, 1988), 321-22.

Robert Dunn's descriptive catalogue of Cage's works to 1962 states that Cage performed his *Ophelia* (1946), for the dance of the same name by Jean Erdman, on Saturday 9 April 1949 at the High School of Music and Art in New York. See *John Cage* (New York: Henmar Press of C. F. Peters Corp., 1962), 9. But the catalogue, hereafter cited as *Peters Cat.*, contains several errors of date, as we shall see in Chapter 6, below.

Hall on Friday 16 November, for in his letter to Boulez of 17 January 1950, Cage mentions having heard works by Wolpe and Ben Weber:

Depuis te connaissant, notre musique me semble faible. En vérité, c'est seulement toi qui m'intéresse. J'ai entendu Sonate (violin et piano) de STEFAN WOLPE et quelques oeuvres de BEN WEBER. C'est tout; et tout les deux sont de côté Berg au lieu de Webern.⁸

Since meeting you, our music seems weak to me. To tell the truth, it is only you who interests me. I've heard a Sonata (for violin and piano) by Stefan Wolpe and some works by Ben Weber. That's all, and both lean toward Berg rather than Webern.

Both Cage and Feldman said that they first met as they were leaving Carnegie Hall after hearing Mitropoulos conduct the New York Philharmonic's first performance of Webern's Symphony, Op. 21. But this concert took place on Thursday 26 January 1950, and by that time Cage had not only met Tudor but begun his professional association with him.⁹

⁸ *Correspondance*, 76-77. The Weber works were probably the Five Pieces for Cello and Piano, the Second Piano Suite, the Sonata No. 1 for Violin and Piano, and a *Concert Aria After Solomon*, all included on a Composers Forum concert at Columbia University on Tuesday 13 December 1949. The concert was reviewed by O[lin] D[ownes] in "3D Composers' Forum: Works of Monello and Weber Featured at McMillan Theatre," *New York Times*, 14 December 1949, 45. Neither these works nor Wolpe's Sonata seem to have made an impression on Cage, who was still enraptured with the music of Boulez: earlier in the same letter, he had written "Sans nouvelles de toi je suis vraiment sans nouvelles de la musique, et tu sais que j'aime la musique avec tout mon coeur." ("Without news of you I am truly without news of music, and you know that I love music with all my heart.")

⁹ The two concerts on which the Philharmonic played the Webern Symphony were given on the evening of 26 January and the following afternoon. Programs of the Philharmonic-Symphony Society of New York, 108th season, 1949-50, New York Public Library, Lincoln Center for the Performing Arts,

While Cage and Cunningham were still in Europe, Ben Weber had completed his *Ballet*, Op. 26, composed for

microfilm, unpagged.

Feldman gave a colorful account of the meeting:

My first meeting with John Cage was at Carnegie Hall when Mitropoulos conducted the Webern Symphony. I believe that was the winter of 1949-50, and I was about twenty-four years old. The audience reaction to the piece was so antagonistic and disturbing that I left immediately afterwards. I was more or less catching my breath in the empty lobby when John came out. I recognized him, though we had never met, walked over and as though I had known him all my life said, "Wasn't that beautiful?" A moment later we were talking animatedly about how beautiful the piece sounded in so large a hall. We immediately made arrangements for me to visit him.

Feldman, notes to Time/Mainstream Recording MS-5007 (rel. 1963), later reprinted as a generic preface to several of Feldman's compositions published by Peters.

Cage corroborated Feldman's story in Tomkins, *The Bride and the Bachelors*, 107. He also wrote Boulez:

The Webern Symphony Op. 21 was our music of this season as far as I am concerned. I was deeply moved. Also I copied it since it was nowhere to be bought.

Undated letter (dated "between January and April 1950" by Nattiez), *Correspondance*, 92.

For reviews of the Webern Symphony performance, see Howard Taubman, "Hisses, Applause, for Webern Opus," *New York Times*, 27 January 1950, 27, and Virgil Thomson, "Stardust and Spun Steel," *New York Herald Tribune*, 27 January 1950, repr. in Thomson, *Music Reviewed* (New York: Vintage Books, 1967), 300-01, and *The Virgil Thomson Reader* (New York: Houghton Mifflin Company, 1981), 337-38. Both reviewers bear out Feldman's recollection of the audience's behavior; Taubman is more concerned with that aspect of the evening, while Thomson devotes most of his column to discussing the music he heard.

Cunningham and subtitled "The Pool of Darkness."¹⁰ Setting out to choreograph the music after returning to New York, Cunningham asked for a rehearsal recording of the score; Cage, who was Cunningham's accompanist, found Weber's piano reduction beyond his technical abilities.¹¹ Needing a pianist to make the recording, and having just procured Masselos for the Boulez project, Cage was presumably reluctant to ask him to perform another kindness. In any event, he looked elsewhere. He dropped in on a rehearsal at the studio of his friend Jean Erdman, who introduced Cage to her accompanist, David Tudor.¹² (Tudor had recently accompanied Erdman's concert of Saturday 22 October 1949; the program included *Ophelia*, Tudor's earliest documented performance of music by Cage.) Soon thereafter, Cage approached Tudor in the most direct manner: "he knocked on my apartment door," Tudor recalled.¹³ At Cage's request, and although he did

¹⁰ The title page of the score reads "Ballet Opus 26 (The Pool of Darkness) / for Merce Cunningham"; the final page is dated "NYC, Sept 9 1949."

¹¹ Apparently the reduction is the piano version of the *Ballet*, published separately under the title *Episodes*, Op. 26a (revised 1957).

Cage's piano-playing could display a rare tonal sensitivity but, despite the ability to negotiate the rhythmic demands of his pre-1951 works, was never of virtuoso calibre.

¹² Jean Erdman, telephone interview with author, 10 March 1992.

¹³ As in the previous chapter, unattributed quotations are based on the author's interviews with David Tudor.

not care for the music itself, Tudor made the recording. (He did not take part in the performance, given on Sunday 15 January 1950, when the pianist in the ensemble was Maro Ajemian.)¹⁴

Cage had loaned his copy of Boulez's Second Sonata to Masselos. In the spring of 1950, Boulez's publisher Philippe Heugel gave Cage a second copy, and Boulez, in gratitude for Cage's efforts on his behalf both in Paris and in the United States, sent Cage the autograph score, along

Cage's unadorned self-introduction had apparently long been a component of his personality. Thomson described the Cage he knew in the early 1940s as "absolutely confident, and without embarrassment in asking for support" in *Virgil Thomson*, 353.

¹⁴ Two days after the performance, Cage wrote to Boulez "Cunningham a donné son concert de danse le 15 janvier. C'était un grand succès. Je t'envoie la programme." ("Cunningham gave his dance concert on 15 January. It was a great success. I'm sending you the program.") *Correspondance*, 78.

Many years later, Cage said that, upon hearing Tudor play Weber's *Ballet/Episodes*, he told Tudor, "You must like this work very much, since you play it so beautifully," whereupon Tudor replied that he didn't like it at all. Interview with author, New York City, 31 July 1989.

The confusion surrounding the origin of the Cage-Tudor association should not surprise: Cunningham himself did not know it was Tudor who made the Weber recording until the subject came up in an interview with the author on 12 August 1989.

with sketches for the work.¹⁵ Cage was more than delighted by Boulez's gift. He wrote back to express his gratitude:

Mon cher Pierre,

Je viens de recevoir le Sonate (2^{ème}) et ça m'a donné une quantité énorme de plaisir. Mais imagine toi ma douleur en ne pouvant pas lire le dernier mot que tu as écrit sur le <<frontispiece>> (le page du titre).

Il y a une semaine j'ai invité Philippe Heugel chez moi et il m'a apporté un exemplaire mais j'ai donné cet exemplaire là à Virgil Thomson parce que j'ai su que tu me rendras un.

Chaque note me parle du page. Je suis dans un état de l'extase et de la sentimentalité. Les deux mélanges (panachés) Masselos a déjà un exemplaire [sic]. Et un Monsieur (Ross Russell) va peut-être l'enregistre. Si tu aimes le <<performance>> de Grimaud, on peut l'enregistrer à Paris. Mais Heugel a pensé qu'un homme sera meilleur (Masselos).¹⁶

I have just received the Sonata (the Second) and it has given me an enormous amount of pleasure. But imagine my disappointment in not being able to read the last word you wrote on the "frontispiece" (the title page).

¹⁵ "Tell to W. Masselos I shall send him the score of my 2d Piano Sonata when I shall have it. I.e., in few weeks. But you will have the first," Boulez wrote to Cage in the spring of 1950. *Correspondance*, 89. While in Paris, Cage had acted as Boulez's advocate with both Heugel and Amphion, Boulez's first publishers. See Nattiez's introduction to the *Correspondance*, 15. The autograph of and sketches for the Second Sonata are now in the John Cage Archive, Northwestern University.

¹⁶ Cage, letter to Boulez, undated (according to Nattiez, written before April 1950), *Correspondance*, 93. Cage's quotation marks around "performance" may be ironic; see note x, above. Ross Russell (b. 1920) formed Dial Records in the late 1940s for the purpose of recording contemporary jazz and concert music. Among his productions were the first extensive series of recordings by Charlie Parker and the first recording of Cage's *Sonatas and Interludes*, played by Maro Ajemian. He also issued or reissued recordings of music by the Second Viennese School in performances by Kolisch, Steuermann, and Leibowitz.

Last week, I invited Philippe Heugel here, and he brought me a copy but I gave it to Virgil Thomson because I knew that you would send me one.

Each note is worth a page. I am in a state of ecstasy and sentimentality. Masselos already has a conflated copy [based on the pre-publication copy and the autograph?]. And a gentleman named Ross Russell will perhaps record it. If you like Grimaud's "performance," it could be recorded in Paris. But Heugel thought that a man (Masselos) would be better.

Due to his schedule, Masselos had asked for a year in which to work on the Sonata, and evidence shows that as late as the end of the summer of 1950 he was still planning to play it.¹⁷ Cage showed the autograph to his new friend Feldman and also loaned him the second copy (presumably after Thomson had returned it). Feldman, in turn, loaned the copy to Tudor, who set out to learn the work on his own during the spring and summer. Upon learning this from Feldman, Cage went to Masselos for a progress report and learned that there had been no progress at all. In part,

¹⁷ On 17 January 1950, Cage wrote Boulez, "William Masselos va jouer ta sonate [2^{ème} pour piano] mais il a demandé un an pour le travailler. Il est très occupé." ("William Masselos will play your Second Piano Sonata, but he has asked for a year to work on it. He is very busy.") Correspondance, 76-77.

A flyer announcing the 1950-51 "Town Hall Short Courses in Music," a series of three courses presented jointly by Town Hall and Juilliard's Extension Division "for busy New Yorkers," shows that music by Boulez and Berg was scheduled for the 12 December meeting of a "Piano Forum" conducted by Joseph Bloch, with Masselos listed as the "assisting artist". Assuming that the flyer must have been printed before the beginning of the fall, Masselos was at that time still intending to give the performance. The flyer, which is in the David Tudor Collection, also shows that Tudor and Frances Magnes played the Wolpe Violin Sonata at the course meeting of 8 November.

this may have been because, according to Tudor, Masselos had taken ill. But it was also because, according to Masselos himself, he had not been able to find a way of learning, or even practicing, the Sonata. (In view of the work's compositional originality and technical demands, this should not surprise.) As in his earlier evaluation of Masselos through hearing him play Ives's First Sonata, Cage recalled Tudor's performance of Wolpe's *Battle Piece*, which he had attended the previous winter, and assumed that this pianist, too, possessed the requisite skills to play Boulez's Sonata. And Feldman, who had known Tudor's playing for several years, had already urged Cage to turn the project over to Tudor. Cage therefore mentioned to Masselos that he knew of another pianist who was also at work on the Sonata and might be willing to assume the task of preparing the American premiere. Masselos agreed to this suggestion, and Tudor set to work on the Sonata in earnest.¹⁸

¹⁸ On the transfer of the Sonata from Masselos to Tudor, Cage wrote

And when I spoke with Masselos I discovered that he had not yet found a way to work on the *Sonata*. In fact, it wouldn't bother him at all if David Tudor played it instead of him. So the plans were changed and it was announced that the first performance would be by David Tudor.

For the Birds, 123. According to both Tudor and Cage, the transfer of the performance responsibility was an entirely amicable affair.

II

The secret of theater in space is dissonance, dispersion of timbres, and the dialectic discontinuity of expression.

The person who has an idea of what this language is will be able to understand us. We write only for him.

Antonin Artaud, 9 November 1932

Tudor's second phase of work on the Boulez Second Sonata was precipitated by a crisis at the worst possible time -- within a month of the scheduled performance.

[A]s I worked on Boulez's score, I kept noticing a very strange fact. I'd always been well known for my ability to handle complex scores - it could be black as sin and I could still play it - but this time I found a sort of constant breakdown in the continuity. I had three months to study the piece, and after two months I became vitally concerned that it would be full of lapses and holes, and I would somehow have to supply enough energy to let the thing continue. . . .

My training had been as a musician of precision - first as an organist, then as a pianist, playing all the classical works - but encountering Boulez for the first time meant my training for the work of Schoenberg wouldn't work at all. Boulez had written no counterpoints, no second voices, and you couldn't subordinate any voices at all, as there was nothing leading, *nothing on which the music centered itself.*¹⁹

¹⁹ Tudor, "From Piano to Electronics," 24, italics added. Tudor's casual inclusion of Schoenberg as a composer of "classical works" is revealing of his concept of twentieth-century music history.

Boulez said the same thing about the absence of a center, in his preface to the published edition of the Sonata.

Like other performers in similar predicaments, Tudor sought help in the relevant literature. Among the items Cage had brought back from Europe were copies of Boulez's two published articles, "Propositions" and "Incidences actuelles de Berg."²⁰ Tudor worked his way through the articles, to find that they were of no help at all -- with the exception of an oblique reference not to music but to aesthetics and to Antonin Artaud. At the end of "Propositions," an essay otherwise concerned with the importance of establishing a new rhythmic basis for twelve-tone composition, Boulez wrote:

J'ai enfin une raison personnelle pour donner une place si important au phénomène rythmique. Je pense que la musique doit être hystérie et envoûtement collectifs, violemment actuels - suivant la direction d'Antonin Artaud et non pas dans le sens d'une simple reconstitution ethnographique à l'image de civilisations plus ou moins éloignées de nous. Mais, là encore, j'ai horreur de traiter verbalement ce qu'on nomme avec complaisance le problème d'esthétique. Aussi ne prolongerai-je pas davantage cet article; je préfère retourner mon papier réglé.

Finally, I have a personal reason for giving such an important place to the phenomenon of rhythm. I think that music should be collective hysteria and magic, violently modern - along the lines of Antonin Artaud and not in the sense of a simple ethnographic reconstruction in the image of civilizations more or less remote from us. But here again I have a horror of discussing verbally what is so smugly called the prob-

²⁰ Both published in *Polyphonie 2* (1948), 65-72 ("Propositions") and 104-08 ("Incidences actuelles de Berg"). They were included in *Relevés d'apprenti*, collected and presented by Paule Thévenin (Paris: Editions due Seuil, 1966), 65-74 and 235-40, and *Stocktakings from an Apprenticeship*, tr. Stephen Walsh (Oxford: Clarendon Press, 1991), 65-72 and 183-87.

lem of aesthetics. I shall prolong this article no further; I prefer to return to my lined paper.²¹

Unfamiliar with Artaud, Tudor found Boulez's allusion intriguing. He went to New York's Gotham Book Mart, requested whatever works by Artaud the shop had in stock, and left with a copy of Artaud's best-known tract, *The Theater and Its Double*. In it, Tudor found a passage which must have been Boulez's point of reference:

I propose then a theater in which physical images crush and hypnotize the sensibility of the spectator seized by the theater as by a whirlwind of higher forces.

A theater which, abandoning psychology, recounts the extraordinary, stages natural conflicts, natural and subtle forces, and presents itself first of all as an exceptional power of redirection. A theater that induces trance, as the dances of Dervishes induce trance, and that addresses itself to the organism by precise instruments, by the same means as those of certain tribal music cures which we admire on records but are incapable of originating among ourselves.²²

For Tudor, this was the key. "It has to do with violence," he said.

And it's quite different from Expressionism; it isn't that at all. It's aesthetic violence, and purposeful. For me, it solved the whole thing. When you realize that one thing does not follow from another, you are able to drop your concern about that. Coming from the

²¹ *Relevés d'apprenti*, 74; *Stocktakings from an Apprenticeship*, 54. Walsh explains the background of Boulez's reference to Artaud: "Boulez had attended and been impressed by one of Artaud's notorious public readings of his own work at the Galerie Loeb in Paris in July 1947, a year before the publication of 'Propositions'." *Ibid*, n. 5.

²² *The Theatre and Its Double*, trans. M. C. Richards (New York: Grove Press, Inc., 1958), 82-83 (originally published in *Métamorphoses* [Paris: Gallimard], 7 February 1938).

school of Schoenberg, it seemed like a difficulty to be bridged.

In specific relation to Boulez's Sonata, Tudor said, "I recall how my mind had to change in order to be able to do it." It was through Artaud that

all of a sudden I saw that there was a different way of looking at musical continuity, having to deal with what Artaud called the affective athleticism. It has to do with the disciplines that an actor goes through. It was a real breakthrough for me, because my musical consciousness in the meantime changed completely. . . . *I had to put my mind in a state of non-continuity -- not remembering -- so that each moment is alive.*²³

"An Affective Athleticism," the twelfth chapter of *The Theater and Its Double*, is Artaud's passionate argument for the actor's need to orient performance in the *body* rather than in language (i.e. the script), and particularly in the breath:

One must grant the actor a kind of affective musculature which corresponds to the physical localizations of feelings. . . . The actor is an athlete of the heart. . . . the affective sphere belongs to him organically.

Every emotion has organic bases. It is by cultivating his emotion in his body that the actor recharges his voltage.²⁴

Artaud's call (or demand) to develop and refine the connections between affects and their physical origins must have appealed to a pianist who had only a few years earlier been driven to "understand the nature of virtuosity."

²³ Clarkson, transcript of interview with David Tudor, italics added by present author.

²⁴ *The Theater and Its Double*, 133, 140. On p. 137, Artaud divides the uses of the breath into six distinct combinations of "masculine, feminine, and neuter."

But Tudor found something else in Artaud, something so fundamentally new as to lead him to the discovery of "a change in musical perception" taking place around 1950.²⁵ Boulez's dismissal of "a simple ethnographic reconstruction" was a warning against a relapse into musical primitivisms and a call for a musical aesthetic analogous to that of Artaud's theater: the *disciplined* creation of unreflective physical immediacy, which for Artaud stemmed not from the actor's use of the written text but of the body (and in Boulez's description of "hystérie et envoûtement collectifs, violemment actuels," we may understand "actuels" to mean not merely "contemporary" but "immediate"). For Artaud, theater lived not in the text but in, and only in, its materialization in performance; the rest was just literature.

Furthermore, Artaud claimed, immediacy was impossible in a theater which had lost a sense of "laughter's power of physical and anarchic dissociation," theater which had "broken away from the spirit of profound anarchy which is at the root of all poetry." For the renewal of theater, "we need true action, but without practical consequence" -- in other words, discontinuity.²⁶ In Artaud's theater, words

²⁵ "The most important thing for me about this period is a change in musical perception," Tudor said in "From Piano to Electronics," (p. 24). He has repeated this observation, in various forms, a number of times. See, for example, Harris, *The Arts at Black Mountain College*, 182, and Michael Kurtz, *Stockhausen: A Biography*, trans. Richard Toop (London: Faber and Faber Limited, 1992), 73.

²⁶ *The Theater and Its Double*, 42, 115.

were no longer primarily symbols but unique objects which "once spoken, are dead and function only at the moment when they are uttered."²⁷ To change the role of speech in theater is to make use of it

in a concrete and spatial sense, combining it with everything in the theater that is spatial and significant in the concrete domain; - to manipulate it like a solid object, one which overturns and disturbs things, in the air first of all, then in an infinitely more mysterious and secret domain but one that admits of extensions, and it will not be very difficult to identify this secret but extended domain with that of formal anarchy on the one hand but also with that of continuous formal creation on the other.²⁸

It is no doubt worth noting that Artaud's transformation of the hierarchy of speech from symbol and communication system to object was appropriated by Cage, who in the early 1950s began to apply the principle to sound itself.²⁹

²⁷ Ibid., 75. Earlier in the same chapter, Artaud had written

[E]ven if we admit a difference between the text spoken on the stage and the text read by the eyes, if we restrict theater to what happens between cues, we have still not managed to separate it from the idea of a *performed text*. (p. 68, italics in original)

²⁸ Ibid., 72. Artaud's concept of theatre as materialization is best known through his "theater of cruelty," where "vibrance," i.e. the physical properties of sound, is primary, its representations -- of emotions, ideas, states of mind -- secondary. "In this spectacle, the sonorisation is constant: sounds, noises, cries are chosen first for their vibratory quality, then for what they represent." (p. 81)

²⁹ Cage read *The Theater and Its Double* as a result of Tudor's engagement with the book. Artaud's ideas were very much in the air at Black Mountain College when Cage, Tudor, M. C. Richards, and Charles Olson were in residence there during the summers of 1952 and 1953. Richards made her

But I have dwelt on Artaud at such length because I believe that by substituting "pianist" for "actor" and "performance" for "theater," we can grasp Tudor's understanding of Artaud's exhortations as they are transferrable from new theater to the music of the postwar avant-garde, and especially to the music of the American experimental composers discussed in the remaining chapters of this study. The purpose of this "purposeful aesthetic violence" was to disrupt musical continuity -- musical syntaxes, in other words -- so that the life of the music is in each moment rather than in the connections between them. This, I believe, is what Tudor meant by "a change in musical perception." And it is all but certain that Tudor was the first *performer* not simply to have sensed the change but to have understood it thoroughly, and from the beginning. To his previous assets of a virtuoso technique, sight-reading skills, and a passion for new sounds, Tudor brought what Cunningham called a new mentality.³⁰ He became, through his reading of Artaud and its application first to Boulez's Second Sonata and then to "all other music," the first pianist to understand the new ideas about musical time, and the idea of continuity as disciplined dissociation, that began

translation at the suggestion of both Cage and Tudor. See Harris, *The Arts at Black Mountain College*, 228, 238.

³⁰ Cunningham said of Tudor that he was "a twentieth-century performer through and through. There was such a new mentality." Interview with author, New York City, 12 August 1989.

to take form not, as is often claimed, in the teleologically attractive year 1945 but around 1950, not least of all through his own performances.³¹

III

Boulez's own later discussion of his purpose in composing the Second Sonata bears out Tudor's new understanding of the work.

Cette sonate renonce carrément au point de départ dodécaphonique et aux formulations qui en découlent. On n'y trouve pas de séries initiales, ni sur le plan sonore, ni sur le plan du rythme; des cellules sonores assez brèves y servent de support à de véritables thèmes rythmiques, travaillés et développés selon les principes exposés par Messiaen, et que vous [i.e. Goléa] venez de rappeler. C'est une rupture totale et volontaire avec l'univers dodécaphonique classique; c'est avec, déjà, ma *Première Sonate pour piano*, et plus encore que celle-ci, les pas décisifs vers un monde sériel intégral, qui sera réalisé lorsque des structuresérielles de timbres et d'intensités viendront se joindre aux structuresérielles sonores et rythmiques.³²

The Sonata flatly renounces the twelve-tone point of departure and the formulations which follow from it. There is no initial series, either at the pitch or rhythmic level; some rather brief pitch cellules function as support for the true themes, which are rhythmic, shaped and developed according to the principles laid out by Messiaen and which you [i.e. Goléa] have noticed. It is a complete and deliberate rupture with the classical twelve-tone universe; already, with my First Piano Sonata, and even more so in this one, it is the most decisive step toward an integral serial world,

³¹ "From Piano to Electronics", 24. "Music since 1945" has become a *topos* in music historiography by attempting to align musical with political history, but it ignores the contributing, if less dramatic, factor of music's distribution.

³² Antoine Goléa, *Recontres avec Pierre Boulez* (Paris: René Julliard, 1958), 82-83. See also below, p. 42.

which will be realized when serial structures of timbres and intensities will ally themselves with those of pitch and rhythm.

Tudor gave the first American performance of Boulez's Second Piano Sonata at Carnegie (now Weill) Recital Hall in New York, on Sunday 17 January 1950, on a program sponsored by the League of Composers. By this time, the work had been "much-heralded," and its reception was mixed.³³ Carter Harman's review of the concert, in the *Times*, devoted more space to the Sonata and Tudor's performance than to the rest of the program combined.³⁴ But Francis Perkins, writing in

³³ The quoted descriptive is from Richard Franko Goldman, "Current Chronicle," *The Musical Quarterly* 37, 2 (April 1951), 254. In addition to Cage's advocacy, there was Thomson, who had given Boulez his first press notice (American or French) as early as 1946. Favorably reviewing the *Sonatine* for Flute and Piano (1946) in his report on "Atonality in France," Thomson called Boulez "the most brilliant, in my opinion, of all the Paris under-twenty-fives." *New York Herald Tribune*, Sunday 27 October 1946, repr. in *Music Reviewed* (New York: Vintage Books, 1967), 182-85; the discussion of Boulez is on pp. 183-84. The Second Piano Sonata had been discussed by Frederick Goldbeck -- before it had been performed at all -- in the "Current Chronicle" of the same journal a year earlier (36, 2 [April 1950], 292-95).

³⁴ Harman's review reads, in part:

It was a weary and confused audience that left the League of Composers' "Evening of First Performances and Revivals" in Carnegie Hall last night. But it left certain that it had heard a pianist of unique and stunning virtuosity.

The planning of the event could hardly have been worse, for the pièce de resistance, Pierre Boulez's thirty-five minute Second Sonata (1938) [sic] in its first American performance, came at the end. Even if the radical work had been at the program's start, the audience probably would have buzzed and giggled [sic] as nervously as it did, but it would have understood it

the *Herald Tribune*, apparently perceived the discontinuity Tudor had discovered through Artaud:

Mr. Boulez's second piano sonata seemed to need a thorough acquaintance with its basic idiom for a discerning appraisal. As it was, the composer's use and metamorphoses of his two twelve-tone rows was [sic] less apparent to the reviewer's ears than it [sic] might have been to the eye following the score. Mr. Tudor's performance seemed both deft and revealing, but the expressive flavor of the three movements which there was time to hear varied relatively little, and there was reason to wonder whether an episodic structure such as this was an essential part of Mr. Boulez's musical system.³⁵

Richard Franko Goldman was ill-disposed toward both the work and its performance:

The first performance of the Boulez Sonata proved nothing: its effect was strikingly flat. Perhaps it is, after all, paper music; or perhaps, as has been sug-

better.

From its beginning, the music was scattered all over the keyboard in rapid, surrealist patterns that could be barely apprehended. Composed in the twelve-note technique, the work was consistently a-rhythmic, a-thematic (in the usual sense) and its sonorities were acerbic. There were episodes of great beauty, however, and an unusual impression of simultaneous discussion of many topics. David Tudor played it with incredible clarity and beauty of tone.

Carter Harman, "Boulez' 2D Sonata Heard in Premier: David Tudor Excels as Soloist in 'Radical' Work on Program of the Composers' League," *New York Times*, Monday 18 December 1950, 35. Harman went on to review, more or less favorably, the other works on the program: Robert W. Moevs' *Sonata per Pianoforte* (1948), played by Beveridge Webster (this was also a first American performance); William Schuman's *Fourth Quartet* (1950), played by the Juilliard Quartet (the first New York performance); Arthur Berger's *Duo in One Movement* (1948), for Violin and Piano, played by Joseph Fuchs and Beveridge Webster.

³⁵ Francis D. Perkins, "Concert and Recital[:] League of Composers," *New York Times*, Monday 18 December 1950, 16.

gested, the performance was not what Boulez envisioned. What meets the eye should, in music, eventually meet the ear, but it would be untruthful to say that such a union occurred, except perhaps as a negative impression of a series of uninteresting ideas worked out with the help of an IBM computing device.³⁶

Henry Cowell, however, was also in the audience, and was more than impressed by Tudor's performance. "I had the score," he said years later, "and he played it with fantastic accuracy. I couldn't think of a living pianist who could have done it."³⁷ And Cage's account of the event, in his letter to Boulez written on the following day, both contains his earliest reference to Tudor and is already typical of the unrestrained praise that later characterized his written and spoken remarks on Tudor.

My dear Pierre,

Hier soir, nous avons entendu ta Sonate; c'était David Tudor au lieu de Masselos qui a joué (et magnifiquement). Tudor va faire une enregistrement pour toi, et, si ça te plait, on peut agir vers une enregistrement publique. (Merci infiniment pour le disque du <<Soleil des Eaux>>, Heugel et toi, tous les deux, m'ont envoyé une copie. J'en ai donné une à Tudor.[]) David Tudor a vingt-cinq ans comme toi et il est ami de Morton Feldman. Avant que Masselos a commencé de travailler la Sonate, Feldman m'a dit que Tudor avait donné déjà 3 mois d'études à l'oeuvre (c'était printemps-été). Comme ça c'était évident que Tudor était choisi. . . .³⁸

³⁶ Goldman, "Current Chronicle," *ibid.*

³⁷ Quoted in Schonberg, "The Far-Out Pianist," 50.

³⁸ Cage, letter to Pierre Boulez (18 December 1950), *Correspondance*, 122. Nattiez places the missing close-parentheses one sentence later than it appears here. The letter is undated, though from both internal and external evidence Nattiez assigns it the provisional date of 18 December. There is no reason to believe it was written at

Last evening, we heard your Sonata; it was David Tudor who played [it] instead of Masselos (and magnificently). Tudor will make a recording for you and, if you like it, we can try to make a commercial recording. (Many thanks to both you and Heugel for sending me a copy of the "Soleil des Eaux" recording. I've given one to Tudor.) David Tudor is twenty-five years old like you [*sic*: Tudor was in fact still twenty-four] and is a friend of Morton Feldman. Before Masselos began to work on the Sonata, Feldman told me that Tudor had already devoted 3 months' study to the work (this was in the spring and summer). Thus it was evident that Tudor be chosen [to play it]. . . .

Cage continues in English:

(my French is too bad; forgive me if I continue in English). Tudor had spontaneously devoted himself to the labor of understanding and playing the Sonata; I loaned him the original which you had given me with the sketches. He studied French in order to read your articles in Contrepoint and Polyphonie (by the way, they never send me these, - although I suscribed [*sic*]) and he has made a collection and study of Artaud. He is an extraordinary person and at the concert (as I was turning pages for him) I had feelings of an exaltation equal to that you had introduced me to [in] 4 rue Beautreillis.³⁹

Summary

The epic proportions of the Boulez Second Sonata have often been remarked. Boulez himself has admitted that in this work he made a deliberate and sustained assault on the idea of compatibility between twelve-tone composition and twelve-tone treatment of tonal forms, and not only as this was espoused by René Leibowitz (for whom Boulez had a dislike bordering on personal animosity), but as it was exem-

any other time than on the day after Tudor's performance.

³⁹ Ibid.

plified in the music of two of the masters of the Second Viennese School: Schoenberg and Berg. (For Boulez, the third -- Webern -- was a different matter altogether: he was sacrosanct, "the only threshold".) Boulez took up older forms -- first-movement sonata, second-movement variations, third-movement scherzo, fugal finale -- only to break them apart.

Probablement influencé par toute l'école Viennoise qui voulait essayer de récupérer les formes anciennes, j'ai tenté l'expérience de les détruire complètement: j'entends par là un essai de destruction de ce qu'était la forme-sonate d'un premier mouvement, de dissolution de la forme du mouvement lente par le trope et de dissolution de la forme-scherzo répétitive par la forme-variation, de destruction, enfin, dans le quatrième mouvement, de la forme fuguée et de la forme canonique. J'emploie des mouvements négatifs peut-être par excès; mais il y a éclatement dissolution, dispersion dans cette *Deuxième Sonate* et c'est très volontairement, en dépit d'une forme très contraignante, que toutes ces formes classiques ont été mises au feu. Après cette *Deuxième Sonate*, je n'ai jamais plus écrit en référence à une forme pas séc. J'ai toujours trouvé une forme qui a été pensée avec l'idée elle-même.

It was probably the attempt of the Viennese school to revive older forms that made me try to destroy them completely: I mean I tried to destroy the first-movement sonata form, to disintegrate [the] slow movement form by the use of the trope, and repetitive scherzo form by the use of variation form, and finally, in the fourth movement, to demolish fugal and canonic forms. Perhaps I am using too many negative terms, but the Second Sonata does have this explosive, disintegrating and dispersive character, and in spite of its own very restricting form the destruction of all these classical moulds was quite deliberate. After the Second Sonata I never again wrote with reference to a form belonging to

the past. I have always found one that came with the idea of the work itself.⁴⁰

Nonetheless, there is another sense in which Boulez's Second Sonata, in fact most of his oeuvre, bears a direct connection to, is descended from, is still part of, music-making as this had always been understood. It is a sense so obvious and common as often to escape notice, though this does not mean that it is trivial. On the contrary, its implications are radical, for it points to a profound conceptual rupture that was soon to come, and not from Boulez: the Second Piano Sonata requires the pianist to play the sounds Boulez has composed, this is to say selected and arranged, at the precise temporal points he has specified. All of this on the keys of the instrument, too; Boulez has neither invented nor demanded new techniques of piano-playing.⁴¹ This is not to preclude the performer's devising new means of negotiating the music, but any such innovations are the performer's worry: they are not explicitly dealt with by the composer. The score tells the performer exactly

⁴⁰ Pierre Boulez, *Par Volonté et par Hasard: Entretiens avec Célestin Deliège* (Paris: Éditions du Seuil, 1975), 51-52; anonymously translated as *Pierre Boulez[:] Conversations with Célestin Deliège* (London: Eulenburg Books, 1976), 41-42. On these points, see also Boulez's remarks to Goléa, quoted on p. 37, above.

⁴¹ Boulez's plea, in the prefatory remarks to the published score, for rubato hardly challenges this assertion. Indeed, it is an attempt to place the Sonata within the epic tradition.

what to play and when to play it. In other words, the piece is determinate with respect to its performance.⁴²

In the months following the American premiere of the Boulez Sonata, Tudor quickly assumed the role of a touchstone for Cage and the other composers who came to be known as the "New York School": Feldman, Christian Wolff, and eventually Earle Brown.⁴³ One reason for this, alluded to above, is obvious: doubtless it was their good fortune to have access to a pianist whose enormous technical virtuosity had long been placed in the service of contemporary music. But there was something more. New ideas soon began to appear in American experimental music and its notation -- ideas, Tudor said, which "were really going to change the face of music." Tudor would be the catalyst for these ideas, for in a very real sense they were responses to the

⁴² One can also say this of the piano music of Debussy. One can say it of Beethoven, who even entered fingerings in the published editions of his piano sonatas whenever he knew he was asking for something unprecedented, from the scales in fourths in the Trio of Op. 2, No. 1, to the triple trill in Op. 111. Like the piano music of these composers, the Second Sonata of Boulez is a piano piece, in the commonly understood sense of the term.

⁴³ And not only for these composers, of course. For a complete index of first performances given by Tudor through 1960, see Appendix D.

challenge posed by another facet of Tudor's virtuosity, the virtuosity of mind.⁴⁴

Brown put it in the plainest of terms:

I think we all felt that about David -- that we were *boring* him. "What can we do next that he *can't do*?" I think we all felt he had a low threshold of boredom; he just breezed through these pieces, then seemed to ask, "What next? Give me something *really* to do."⁴⁵

In accepting Tudor's challenge, that is what these four composers, each in his own, distinct manner, proceeded to do.

⁴⁴ Hultberg, interview with Tudor. Regarding the new music, Tudor added the simple proviso that "either you can live with it or you can't."

⁴⁵ Earle Brown, interview with the author, New York City, 2 March 1992. Brown made his observation in Tudor's presence and in good-humoured sincerity.

Chapter 3

Implicative Graphics I: Feldman, *Intersections 2 and 3*

Background

Within a few months after meeting Cage in January 1950, Feldman took his first steps toward the use of indeterminacy via a new notational technique: the graph score. The first works using the new technique were a series of compositions Feldman entitled *Projections*. Cage's version of the genesis of the graph score suggests that Feldman wrote the first work on graph paper in a single compositional act. In a radio conversation with Feldman, Cage said:

[You] wrote it down at Monroe Street and David Tudor and I were in the other room. You left us and you wrote this piece on graph, giving us this freedom of playing in those three ranges -- high, middle, and low -- and we went in and played the piece and it was then that the musical world changed.¹

¹ John Cage and Morton Feldman, "Radio Happenings I-V," recorded at WBAI, New York, 9 July 1966-16 January 1967. I am grateful to Laura Kuhn for providing me with a transcript of the five broadcasts, during the first of which Cage made the remarks quoted above.

Like so many of Cage's anecdotes, this one has been so frequently and uncritically recycled that it has assumed the status of a historical datum. See, for example, Tomkins, *The Bride and the Bachelors*, 108, and David Revill, *The Roaring Silence* (New York: Arcade Publishing, Inc., 1992), 103. But whereas earlier in the conversation Cage says "I think the first one was for piano" -- and Feldman does not correct him on this -- the first of the *Projections* series is for cello and none is for solo piano. Feldman may have simply left the room to return with a previously composed graph score, probably *Projection 1*, since it is dated April 1950. Tomkins at least acknowledges this possibility,

In addition to the five *Projections* for various instruments, Feldman's other series of early graph scores are the three *Intersections*.² The first of these, dated February 1951 and dedicated to Cage, is for orchestra.³ *Intersections 2 and 3*, written in 1951 and 1953 respectively, are for piano solo.

Feldman later likened "precise" -- by which he meant traditional staff -- notation to still photography. His interest in a less precise but more flexible notational technique stemmed from his close association with several New York artists of the period, especially Philip Guston. Feldman saw Abstract Expressionism as direct communication devoid of all symbolism, and he sought a way to bring about a similar immediacy in music. "The new painting," he wrote, "made me desirous of a sound world more direct, more immediate, more physical than anything that had existed heretofore."⁴

though his statement that Feldman left the room and "returned later" also implies an *impromptu* composition.

² The instrumentation of the other *Projections*, all of which were composed in 1951, is as follows: II, flute, trumpet, piano, violin, and cello; III, 2 pianos; IV, violin and piano; V, 3 flutes, trumpet, 2 pianos, 3 cellos.

³ The scoring of *Intersection 1* is partly indeterminate, specifying instrumental families of winds and brass; the four string instruments called for are individually identified.

There is also a *Marginal Intersection* for orchestra, composed in 1951.

⁴ Feldman, notes to Time/Mainstream recording MS-5007.

Feldman's solution was the graph score, in which only general -- and, as we shall see, mobile -- pitch registers, rather than pitch (or even pitch class), are specified, along with the cardinal number of pitches to be played within a time frame (also mobile). In this sense, Feldman's graph scores are literally *implicative graphics* -- implicative because, writes Geoffrey Chew,

[t]heoretically, any type of visual pattern may be used, though a certain degree of influence of conventional notation often seems evident, particularly in the choice of shapes associated with articulations and dynamics, and in the idea that a score represents a graph with a pitch range as its vertical axis and a time-scale as its horizontal axis.⁵

Implicative graphics, Feldman believed, afforded unique advantages to both the composer and the performer(s), even when the latter included Feldman himself:

My desire . . . was not to "compose," but to project sounds into time, free from a compositional rhetoric that had no place here. In order not to involve the performer (i.e., myself) in memory (relationships), and because the sounds no longer had an inherent symbolic shape, I allowed for indeterminacies in regard to pitch. In the "Projections" only register (high, middle or low), time values and dynamics (soft throughout) were designated. Later in the same year (1951) I wrote "Intersection #1" and "Marginal Intersection," both for orchestra. Both these graph pieces designated only whether high, middle or low register of the instrument were to be used within a given time structure. Entrances within this structure, as well as actual pitches and dynamics, were freely chosen by the performer.⁶

⁵ "Notation," §III, 6 (i), in *The New Grove Dictionary of Music and Musicians* (New York: Macmillan and Company, 1980), 13:415.

⁶ Feldman, notes to *Mainstream* MS-5007.

Feldman's description of the two orchestral *Intersections* also applies to his two *Intersections* for piano, both of which were written for and dedicated to Tudor.

Intersection 2 (1951)

Notation

The notation of *Intersection 2* is in the form of coordinate squares arranged in systems, three horizontal rows of squares constituting one system (Fig. 3-1). Each row denotes a pitch range as high, middle, or low. Integers from 1 through 12 are entered in squares whose borders are highlighted to distinguish them from the other squares in a system. Segments of multiple coordinate squares in the same row are similarly highlighted. According to the tempo indication on page 1, one square represents a "measure" whose pulse is $MM = 158$. There are a series of tempo changes on page 10: $\square = 198$, $\square = 172$, $\square = 176$, and $\square = 178$.

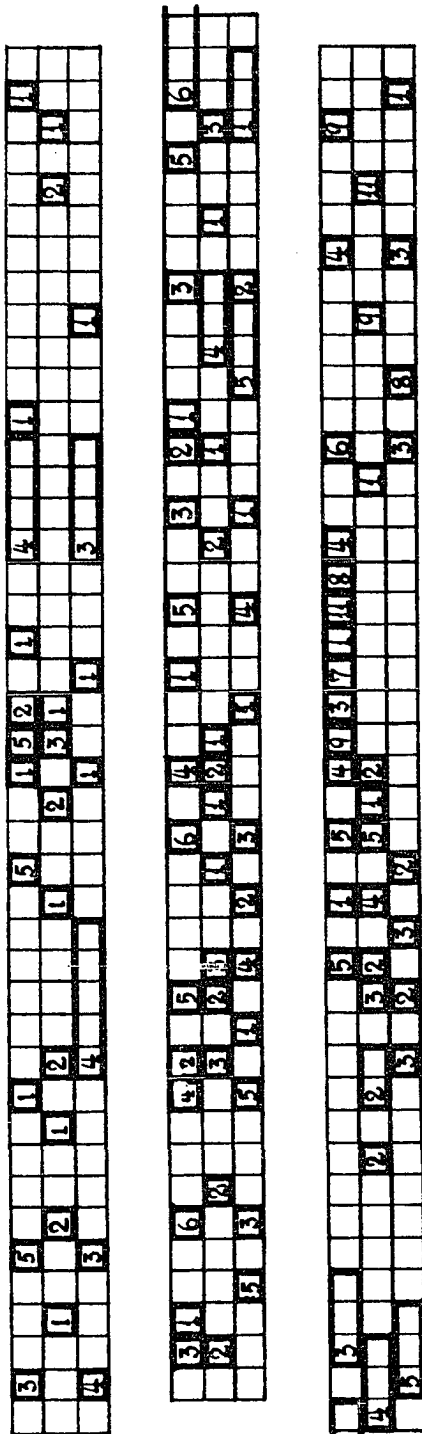
There are three modifications of this basic notation:

1. subdivision of a single coordinate square into two halves;
2. similar subdivision of segments of multiple squares;
3. diamond-shaped noteheads presumably signifying harmonics (Feldman's instructions for performance make no reference to this notation).

All three of these modifications begin on p. 6 of Feldman's score (Fig. 3-2). The published score (Peters Edition 6922 [1962]), is a facsimile reproduction of a fair copy made not by Feldman but by Cage. The publication also includes a

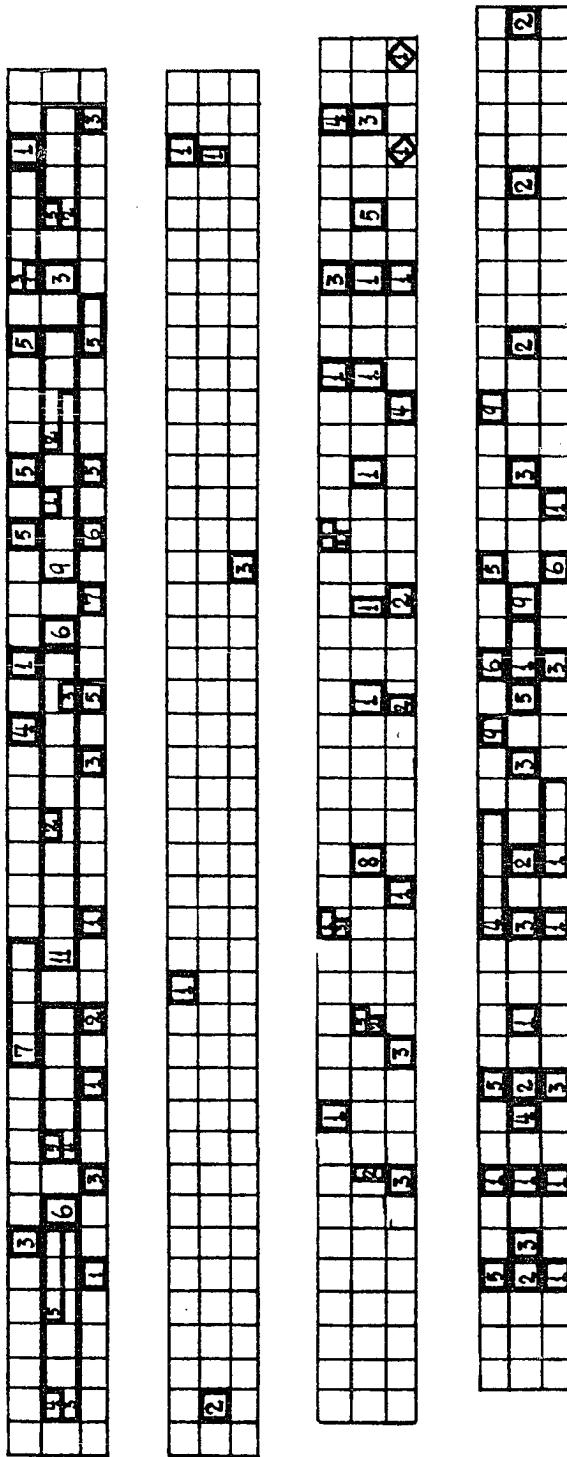
Fig. 3-1. Feldman, Intersection 2, p. 1

□ - 158



-1-

Fig. 3-2. Feldman, *Intersection 2*, p. 6: subdivision of coordinate squares and segments of multiple squares into halves (system 1); diamond-shaped noteheads signifying harmonics (system 3).



-6-

facsimile of Feldman's signature, but the title, dedication "to David Tudor," performance instructions, notation, and date and place of completion on the final page ("New York City August 1951") are all in Cage's hand.⁷ Feldman's performance instructions (p. III) read as follows:

Each box is equal to MM. 158 or otherwise if notated. Each system is notated vertically as regards pitch: high, middle, low. The numbers mean how many keys one plays. Where there are two numbers for one register any part of the register can be used.

The player is free to choose any dynamic and to make any rhythmic entrance on or within given situation. Sustained sounds once played must be held to the end of the notated duration. The number 12 means any number, 12 or above.

In his note on the graph scores of the *Projection* and *Intersection* series, Feldman wrote that he "allowed for indeterminacies in regard to pitch." This is true only to a degree, since pitches are *individually* indeterminate but *registrally* determinate in terms of the three ranges.

⁷ Cage was both skilled and experienced in music calligraphy and prepared a number of fair copies of works by both Feldman and Wolff (Brown's fair copies are all in his own hand). The fair copy of *Intersection 3* is also in another hand, but it is not that of Cage; furthermore, we shall see that it contains a number of errors.

Cage's dating of *Intersection 2* in Peters 6922 is indirectly corroborated by his letter to Boulez written sometime after 6 October 1951: "Tudor is again away from New York until Xmas and so nothing has been done about recordings but when he returns I shall get to the work of wiging him to record your 2^{ème} Sonate. My Changes, some pieces of Christian's and Feldman's *Intersection 2*, which records we would send on to you, with scores." *Correspondance*, 181. Apparently due to lack of financial underwriting, the projected series of recordings was never made.

Whether these ranges are to be understood as a tripartite division of the total available pitch space (e.g. A1-C8, the 88 keys of the piano) or as a subdivision of a smaller pitch space is not specified. Other parameters -- subdivision of a given register, dynamics, rhythmic freedom within coordinate squares, and textural density greater than 11 pitches -- are to various degrees determinate. That Feldman did not consider these conditions to be instances of compositional indeterminacy is suggested by a remark made later in the same note: "I had never thought of the graph as an art of improvisation, but more as a totally abstract sonic adventure."

Problems of Performance

The instructions for performance go only a short way in explaining the notation of *Intersection 2*. There is no explanation of a number of notational signs: for example, the diamond-shaped figures; connected elongations of multiple coordinate squares (whether written in solid or broken lines); the cue "with elbow, not broken" offered as a solution to the notational figure "12," beginning on page 9; or the cue "with flat of the hand" as a solution to the same notation on page 11. More important, the degree of registral stability -- whether the tripartite division of an otherwise unspecified pitch space is fixed or flexible -- is not clear. The performer must determine, for example,

whether middle C is consistently a member of the "middle" register.

Tudor gave the first performance of *Intersection 2* at the Cherry Lane Theatre on 1 January 1952, on the first of two programs marking his New York recital debut. On that occasion, he played from Feldman's graph score, something he continued to do for a long time thereafter. But when Feldman presented him with a new *Intersection* -- *Intersection 3* -- in 1953, Tudor made a decision that would significantly alter his approach to the problems of performance in indeterminate music.

Intersection 3 (1953)

Feldman's penultimate composition in the *Intersection* series was a second solo piano work for Tudor.⁸ The

⁸ A fourth *Intersection*, for cello solo, was composed later in 1953, after which Feldman wrote no graph scores until the orchestral *Ixion* of 1958. His reasons for turning away from the graph are obscure:

After several years [1950-53] of writing graph music, I began to discover its most important flaw. I was not only allowing the sounds to be free - I was also liberating the performer. I had never thought of the graph as an art of improvisation, but more as a totally abstract sonic adventure. This realization was important because I now understood that if the performers sounded bad it was less because of their lapses of taste than because I was still involved with passages and continuity that allowed their presence to be felt. (Feldman, notes to *Mainstream MS-5007*)

It is difficult to imagine that Feldman had Tudor in mind in this remark about "performers [who] sounded bad"; certainly there is no evidence elsewhere that Feldman ever held Tudor in anything but the very highest regard. In the early years

autograph, written in black ink on a single folio of graph paper taped to a sheet of cardboard, carries the heading *INTERSECTION # 3 FOR D. TUDOR M Feldman April 1953*. But it was not until a year later that Tudor performed the work, on the second of two recitals given at Carl Fischer Hall in New York on 14 and 28 April 1954. In light of Tudor's well-known abilities as a sight-reader and quick learner -- he could play Cowell's innovative piano pieces at sight, for example, and performed the fourth book of Cage's *Music of Changes* less than three weeks after its composition -- this is an unusual lag between composition and performance; even learning Feldman's *Intersection 2* had taken a few months at most.

The notation and, in the published edition (Peters 6915 [1962]), the instructions for the performance of *Intersection 3* are in all significant ways identical to those in *Intersection 2*. At first glance, *Intersection 3* even appears to make fewer demands on the performer than does the

of their friendship, for instance, Feldman inscribed a copy of his *Journey to the End of the [sic] Night*:

The three of us: David, Arlyne [Feldman, the composer's first wife] and myself in a Village bar not too late at night this 22nd of Oct, 1949....I think of the future...there is great hope, a stirring and all too wonderful feeling so long as great artists like David Tudor "gives [sic] himself to the modern composer" with such religious devotion and understanding. And so this work is dedicated to him: David Tudor - pianist and friend extraordinary. Morton Feldman

For a straightforward example of Feldman's later regard for Tudor, see note 11, below.

earlier work: the greatest number of pitches required in a single coordinate square is 11, rather than "12 or higher"; there is no subdivision of pitch content in the multiple coordinate squares; there are no harmonics, no changes of tempo, no cues for special techniques such as "with elbow, not broken" or "with flat of the hand." It would seem that the performer is left with the same kind of notational problems, such as determination of pitch and dynamics, found in *Intersection 2*. These pale, however, in comparison with the new performance problems posed in *Intersection 3*. And it is safe to assume that Feldman's knowledge of and trust in Tudor's abilities gave him the confidence to extend his demands on Tudor's virtuosity.

Excursus: The Composer-Performer Relationship

But here we come upon one of the most unexpected, even astonishing, aspects of Tudor's work. One often reads that the music of the American experimental composers brought about a new relationship between the composer and the performer. This is no doubt true, but not in the sense usually implied by the statement. In the beginning stages of research for the present study, I interviewed the three composers of the so-called "New York School" then still living.⁹ I began by asking each of them how he worked with

⁹ The interviews were with: Earle Brown, Rye, New York, 13 June 1989 and New York City, 2 March 1992; Christian Wolff, Hanover, New Hampshire, 15 June 1989; and John

Tudor on the preparation of a new work, expecting to find "clues" to deciphering the notation of indeterminate scores, as well as informative descriptions of Tudor being coached at the source -- in the inner sanctum, as it were. Instead, their answers were without exception startling. There existed none of the composer-supervised preparation typical of such relationships in other musical art worlds, either old or new.¹⁰ In its place was something almost "business-like," Wolff said. Possibly as a result of his being the only practicing professional performer in the group, and certainly as a result of his technical and imaginative virtuosity, Tudor was left entirely free to prepare a work for performance. This freedom and independence extended even to coaching -- more accurately, to its absence. Cage elaborated:

There was never any conversation. . . . Nor did I consult with him about what he could do, or what he couldn't do -- none of that. One assumed he could do everything. (In fact, hearing him perform was proof.)

And Brown said, "that was one of the amazing things: he would never ask you anything. I don't think I ever worked

Cage, New York City, 31 July and 12 August 1989. Throughout this dissertation, otherwise undocumented quotations from these composers are transcribed from these interviews.

¹⁰ The most famous of the earlier associations was the friendship of Brahms and Joachim (Joachim even rewrote the end of Brahms's *Double Concerto* in order to make the violin part more challenging and persuaded Brahms himself to increase the difficulties in the rest of the work). More recently, Steuermann and Kolisch served as apostles of the Second Viennese School.

with him on a performance." And when asked if he ever discussed the performances themselves with Tudor, Brown replied:

No. I think the answer . . . has to do with how much we *trusted* David to always be doing things properly and correctly and right. And we had a feeling that we *could perhaps present him with scores and possibilities*. We did our jobs and he did his job, and we didn't interfere with each other; he didn't try to tell me how to write, or that I shouldn't write this, and we didn't tell him how to play the music. (emphasis added)

Wolff offered an insight into another new dimension of the relationship: the sense of *mutual challenge* between composer and performer.

Initially, you wouldn't *believe* things that were done in the names of certain compositions. (John suffered the most under that, but I have, too.) So that the whole question of being able to *trust* the performer, at a very basic level, was an issue. And of course, with David there was no question. There was not only no question, but you'd be looking forward to see what he had thought to do with the "material" you had given him. (He would ask, not "Do you have a new piece?", but "Do you have some new material?")

When a piece was turned over to David, there was simply no anxiety. You didn't worry, you knew that something would happen. My *main* anxiety would be more that I had made something that wasn't good enough [to interest him].

Occasionally, he might say, "Well, I'm going to have to figure out something interesting to do here." But he never said, "You couldn't possibly change this?"¹¹

¹¹ Schonberg wrote that Feldman, who died in 1987, held similar views: "He doesn't even bother to work with Tudor. He gives him the music and the instructions." "Then," said Feldman:

I go to the concert and hear a miracle. This kind of music is more than merely a specialty of Tudor's. In some ways he's entirely responsible for it. Meeting

The idea of writing music as a challenge to the performer is common both to the new notational developments and to the introduction of indeterminacy as a compositional technique, and Tudor's approach to the new music was looked upon as a kind of puzzle-solving. "He's a great solver of puzzles -- and producer of them," said Cage, who went so far as to state that Tudor's

interest in puzzles invited the whole thing of indeterminacy. And so what you had to do was to make a situation that would interest *him*. That was the role he played.

Problems of Performance

Feldman described his graph scores as "abstract sonic adventures." They are abstract insofar as they specify only the broadest textural character of the work.¹² Feldman's graph notation ostensibly allows great leeway in determining pitch content, and in some of his graph scores this may indeed be the case. It is not so obvious in the two *Intersections* for piano, especially in *Intersection 3*, where

David enabled me to hear and see possibilities I never dreamed of. ("The Far-Out Pianist," 52)

¹² It is for this reason that a graph score itself provides sufficient information for its analysis via contour theory, where "contour" is defined as "a set of points in one sequential dimension ordered by any other sequential dimension [A] sequential dimension of order *n* is a basic musical attribute whose points (or states) are listed in order corresponding to the number 0 to *n*-1." Robert Morris, *Composition with Pitch Classes: A Theory of Compositional Design* (New Haven: Yale University Press, 1987), 282-284.

Feldman has placed serious constraints on the performer's choices, constraints which may not become apparent until one attempts to perform the work from Feldman's score. In comparison with *Intersection 2*, these are:

1. a faster overall tempo (the pulse is MM = 176 throughout);
2. greatly increased textural density: although there are never more than 11 pitches in a given register (in contrast to the "12 or higher" in the earlier work), a higher pitch density is far more frequent in *Intersection 3*;
3. above all, an increased use of subdivision of pitch quantities within individual registers.

In *Intersection 2* there is never more than one subdivision within a given register in a single measure. In *Intersection 3*, the pianist frequently encounters pitch subdivisions in two out of three registers. An example of this is m. 297 (Fig. 3-3), which calls for eight pitches in the high register, 11 (4 + 7) in the middle, and eleven (6 + 5) in the low, all of them in or around a single measure; that is, "the player is free . . . to make any rhythmic entrance on or within given situation."

Fig. 3-3. Feldman, *Intersection 3*, m. 297

8
4
7
6
5

As a result, in order to perform *Intersection 3*, Tudor needed to:

1. determine pitch content, as well as what basis, if any, to use in determining it;
2. decide whether to read the higher numbers of pitches as clusters (this is to some extent implicit in Feldman's score, given its tempo, a point to which I shall return) or as distinct sonorities;
3. coordinate those measures in which the textural density is high, is subdivided into two pitch groups, or both.

Finally, it was not only a matter of what Tudor needed to know, but also of what he wanted to do. And this amounted to a difference between seeing the constraints of a score as limitations and seeing them as possibilities.

Tudor's solution to these problems was relatively straightforward and basically simple. And it could be based on his experience of performing numerous earlier pieces by Feldman in which the notation is pitch-specific: the *Illusions* of 1949, the five *Intermissions* of 1950-51, and the *Extensions 1* and *3* of 1951 and 1952. These works provided Tudor with a fund of material for determining the pitch content of *Intersection 3* in ways consistent with Feldman's own practices. But Tudor quickly reached the limit of this solution, for there are few, if any, sonorities in the earlier pieces that approach the density level of the 9, 10, 11 or more pitches found in *Intersection 3*. At this level, Tudor decided, the solution was to make *Intersection 3* a

study in clusters. In so doing, however, Tudor extended the variety and complexity of cluster-writing beyond precedent.

The most important precedent for cluster-writing, of course, was the piano music of Henry Cowell. Cage had introduced Tudor to Cowell sometime around 1950-51, and Tudor performed *The Banshee* (1923) as early as his second solo recital in Boulder, on Thursday 5 July 1951.¹³ Thereafter, Tudor frequently included Cowell's *The Banshee* and *Tiger* (1928-29) on recitals often otherwise devoted to the music of Cage, Feldman, Wolff, and Brown. More recently, Tudor has edited a number of Cowell's piano works for publication, including several of the cluster-pieces. Tudor thus came to know both Cowell's techniques of cluster-writing and performing the results in the most basic way.¹⁴ But there is nothing either in Cowell's music or in his codifications of it in *New Musical Resources* of 1930 about the kinds of clusters Tudor devised for his performance of *Intersection 3*.

¹³ For details on these two recitals, see Chapter 4, note 1, below.

¹⁴ For the second volume of *Piano Music of Henry Cowell* (New York: Associated Music Publishers, Inc., 1982), Tudor edited *Time Table* (1914-15), *Vestiges* (1920), *Whisking* (1917), *Sneaking* (1917), *Swaying* (1924), and *The Fairy Bells* (1929). Volume 3 of the series is in preparation.

Of the four works by Cowell in Tudor's repertory during the early 1950s, Tudor performed two -- the *Hymn and Fuguing Tune No. 9* (1950) and *Maestoso* (1926) -- only once, on a retrospective concert of Cowell's music given on Monday 16 November 1953 at the New School for Social Research in New York City, where Cowell had taught since 1928.

Errata in the Published Version of *Intersection 3*

Tudor prepared his realization of *Intersection 3* from Feldman's autograph score, and later made his own copy by hand.¹⁵ In both copies, the upper (i.e. high) coordinate square of m. 206 reads $7/2$, and Tudor's realization follows this notation. Peters 6915, a facsimile of a copy in a third and unknown hand, erroneously transcribes the 7 in Feldman's notation as a 1. *Ditto* m. 32, where both authentic sources show $5/5$ in the middle register but which has been transcribed in Peters 6915 as $5/6$. Again, Tudor's realization follows the autograph.

Text 1/Text 2

In the interests of brevity, simplicity, and, I hope, clarity, I have made a categorical distinction between "score" and "realization," a distinction I shall maintain for the remainder of this dissertation. At those times when I sense that it is becoming unclear as to the source I am discussing, or when I suspect that the reader cannot bear to see yet another pairing of "Feldman's (Wolff's, Brown's, Cage's) score/Tudor's realization," I use the term *Text 1* to mean a score or other material (such as performance instructions) furnished by a composer to Tudor. And I use the term *Text 2* to mean what I otherwise call "realization" or

¹⁵ Feldman's autograph score and Tudor's copy of it are in the David Tudor Collection.

"Tudor's score" -- a score written out by Tudor himself for use in performance.

I say "in the interests of clarity," but there are, without doubt or question, underlying ontological issues I have neglected to make clear at all. That I shirk from doing so, here and throughout this study, is not because I consider the question of musical identity unimportant. On the contrary; it is one of the most vexing issues in the new music, not least because of Tudor's part in it. And when I set out to examine Tudor's role, one of my purposes was to consider "the work of music and the problem of its identity" as it obtained in a kind of music Roman Ingarden did not probe in his eponymous essay. But as I began to "reconstruct the problems to which the text is an answer," it became evident that what are, what remain, problems for us were not necessarily problems for Tudor or, for that matter, for the composers whose music is here being considered through his performances.¹⁶ Issues (the semantics of the word are instructive) follow from actions, and it is Tudor's actions, as these are embodied first in his written realizations and then in his performances (to the extent that documentation of the latter permit) that are in primary need of address and understanding. That his actions shed unique light on a composer's text while simultaneously aggravating

¹⁶ Duchamp meant nothing cavalier or flippant by his assertion, "there is no solution because there is no problem."

persistent questions about textual identity is also unquestionable. But the first task is to see how they do this.

Tudor's Realization of *Intersection 3*

Tudor wrote his realization of *Intersection 3* on 3 folios *recto* and *verso* of Presser 12-staff music paper. The notation is in pencil and is in standard unmeasured staff and cluster notation (slight modifications of both will be discussed below). The autograph, like all of Tudor's realizations, bears no title, date, or signature. It also contains no fingerings and but a very few handings (by the latter term I mean cues to which hand is to be employed).

Terminology

Cluster-types. Cowell's notation conveyed information about what I call *simple clusters*, by which I mean that no matter what the ambitus, no matter how many keys are included in a given cluster (and the keys in Cowell's clusters are always adjacent) they are manageable by fist or forearm alone. In addition to simple clusters, Tudor's realization of *Intersection 3* frequently uses cluster-types which are *pitch-specific*. Pitch-specific clusters which require more keys than the hand has fingers I call *complex sets*, defined below.

Cardinal number density. I use this term, abbreviated to *cnd*, to refer to the cardinal number in Feldman's nota-

tion that signifies the number of pitches to be played in a given coordinate square. A *simple cnd* is that in which there is one cardinal number in a single measure and in a single register -- high H, middle M, or low L. A *compound cnd* is that in which there is more than one cardinal number in a single measure and register, resulting in a registral subdivision.

Complex set. This refers to a measure in Feldman's score in which the *cnd* is 6 or higher (thereby requiring more keys than the hand has fingers), compound, or both.

Examples of all three kinds of sonorities occur within the first 3 measures of *Intersection 3* (Fig. 3-4). Measure 1 shows the compound *cnd* 3/3, meaning 3 + 3 pitches to be played in the middle register M. Measure 2 shows simple *cnd*'s 5 in register H and 4 in register L, and measure 3 shows the complex set *cnd* 6M.

Fig. 3-4. Feldman, *Intersection 3*, mm. 1-3: compound *cnd* (m. 1), simple *cnd*'s (m. 2), and complex set (m. 3).

	5	
3		6
	4	

Notation

Figure 3-5 shows the first page of Tudor's realization of *Intersection 3*.¹⁷ Tudor has equated 1 measure in Feldman's score with a quarter-note (or quarter-rest, if the coordinate square is blank), with extended durations, such as the *cmd* 3M in mm. 13-17 rendered accordingly. For notating simple chromatic, black-key, and white-key clusters, Tudor employs the earlier cluster notation of Cowell. A natural-sign above or below a cluster means the cluster is to be played on the white keys, a sharp or flat similarly indicates a black-key cluster, and the absence of these signs signifies a chromatic cluster. A sharp or flat preceding a cluster shows the cluster's upper or lower ambitus. Tudor extends Cowell's notation in order to notate combinations of cluster-types, as in the second system of his realization, where the black-key cluster D#6-A#7 and the white-key cluster G6-C7 are to be played both simultaneously and as grace-notes to the following sonorities (see Fig. 3-5).

But Cowell's notation was limited for Tudor's purpose, for more often than not the clusters in his realization of *Intersection 3* are *pitch-specific*, rather than simply clusters of adjacent keys. Tudor's notation of these pitch-specific clusters with higher *cmd*'s is in standard stems and

¹⁷ Throughout this dissertation, Tudor's work sheets, notes, and realizations are reproduced in facsimile.

Fig. 3-5. Tudor, realization of *Intersection 3*, p. 1

The image displays a page of musical notation, identified as a realization of 'Intersection 3' by Tudor. The page is organized into five systems, each consisting of two staves (treble and bass clefs). The notation is highly complex and dense, with numerous notes, rests, and dynamic markings. The image is heavily degraded with significant noise and grain, making it difficult to read the specific notes and markings. The overall appearance is that of a high-contrast, black-and-white scan of a printed musical score.

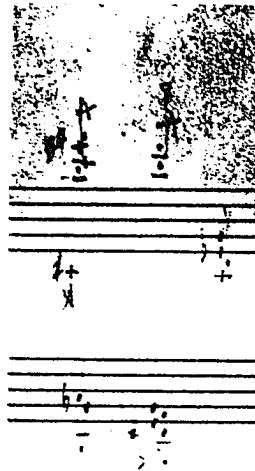
noteheads, but with a number of modifications and innovations.

Where necessary, vertical semi-brackets \lrcorner and \llcorner serve as signs for 8^{va} or 16^{va} *sopra* or *bassa* (see system 2 in Fig. 3-5). Diagonal lines and inverted wedges connect noteheads to pitch-specific clusters, as in sonority 6 on p. 1 and the final sonority in system 3 of the same page.

The words *add* or *omit*, followed by a pitch-name and written above or below a sonority, specify the addition or omission of a pitch in order that it correspond to the *cmd* of Text 1 (see "omit g^b" below the final system in Fig. 3-5, above). The frequent appearance of these directions in Text 2 suggests that they are not changes Tudor added later but merely delays in making particular determinations at the time he prepared the realization.

Feldman's performance instructions allow flexibility regarding the placement of a sonority with respect to the measure, since "the player is free . . . to make any rhythmic entrance on or within [a] given situation." In Tudor's realization, sonorities are often notated "on the beat," i.e. as quarter-notes/rests or their multiples, as at the very beginning of the realization (see Fig. 3-5). To indicate other movement with regard to a coordinate square in Feldman's score, Tudor sometimes writes one sonority as a grace-note to the next, as in sonorities 8-10 (Fig. 3-6).

Fig. 3-6. Tudor, realization of *Intersection 3*: sonorities 8-10



In Feldman's score, the source of this excerpt is mm. 8-10, where the *cnd*'s are 4H, 1M, 3L (m. 8), 2H and 5L (m. 9), and 4M (m. 10) (Fig. 3-7).

Fig. 3-7. Feldman, *Intersection 3*, mm. 8-10

4	2	
1		4
3	5	

The rhythmic identity of the three corresponding sonorities in Tudor's realization is as follows: the 1M in m. 8 has become C#4 and is notated as a grace-note to the trichord D2-Bb3-C3, Tudor's determination of the pitch content of 3L.

The pitch content of 4H is rendered as the tetrachord B6-C6-E#6-F#6, notated as a grace-note to the pentachord Bb2-F#2-G2-A3-B3, Tudor's reading of *cnd* 5L in m. 9. Finally, the dyad B7-D7, corresponding to *cnd* 2H in m. 9, is notated as a grace-note to the following sonority, the tetrachord C4-D4-Eb4-G3, corresponding to *cnd* 4M in m. 10.

Brackets or ligatures are sometimes used to connect two or more notations whose common source is a single coordinate square in Text 1 (Fig. 3-8).

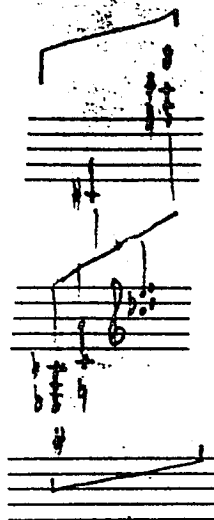
Fig. 3-8. Feldman, *Intersection 3*: Text 1, m. 295 and Tudor's realization in Text 2

The figure consists of three parts. On the left is a coordinate square, a vertical rectangle divided into three cells. The top cell contains the number '6', the middle cell contains '7', and the bottom cell contains '2'. To the right of this square are two musical staves. The upper staff has a bracket above it and contains several notes with stems, some of which are tied or have complex articulation. The lower staff contains a few notes, including a bass clef and a sharp sign, with stems pointing downwards.

At other times, sonorities are written as grace-notes in order to facilitate execution of an extremely complex set, such as that found in Text 1, m. 297, where the *cnd* reading is 8H, 4/7M, and 6/5L (Fig. 3-9).

Fig. 3-9. Feldman, *Intersection 3*: Text 1, m. 297 and Tudor's realization in Text 2 (the third sonority in the realization is the chromatic cluster C#4-G4, corresponding to *cnd* 7M in Text 1).

8
4
7
6
5



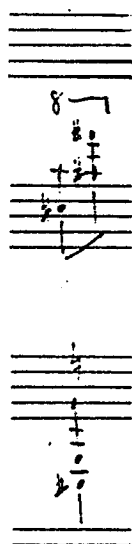
Register

Tudor interpreted the registral specifications *H*, *M*, and *L* of *Intersection 3* as mobile. That is, he did not simply partition the 88-key pitch space of the piano into three near-equal portions (although the ambitus of his realization is the entire available pitch space of the keyboard *A1-C8*). Instead, he re-interpreted certain pitches in the middle of the pitch space. For example, the F5 notated for the right hand in the second sonority -- part of

a *cnd* 5H -- is lower than the F#5 in the next sonority, which is part of a *cnd* 6M (see Fig. 3-5, above).

But although registral disposition is mobile, Tudor is careful not to blur the identities of different *cnd*'s whose sums are equivalent. Measure 408 of Feldman's score, for example, shows the complex sets *cnd* 9/9H and 8/1L. Tudor's realization renders the 9/9H as a pair of chromatic clusters C#6-A7 and A#7-F#7. But a similar cluster-reading of 8/1L would result in a third compound *cnd* 9. The realization therefore shows a white-key cluster B2-B3 (8L) above a single G#1 (1L) (Fig. 3-10).

Fig. 3-10. Tudor, realization of *Intersection 3*: realization of Text 1, m. 408



A similar case is m. 418, showing 4/5M and 9L. In this case, Tudor's realization shows both *cnd*'s as clusters, but of different types: the complex set 9L is a chromatic cluster D2-Bb3, while 4/5M is a combination cluster: *cnd* 4 on black keys Ab4-Bb5-Db5-Eb5 and *cnd* 5 on white keys C4-D4-E4-F4-G4 (Fig. 3-11).

Fig. 3-11. Tudor, realization of *Intersection 3*: realization of Text 1, m. 418



Dynamics and Pedalling

Dynamic markings in Tudor's realization -- all of them *forte* -- are so few as to suggest that they are cues rather than part of a more detailed plan. Tudor seems to have left this parameter to determination in performance, in other words, to improvisation.¹⁸ Varieties of pedalling seem to

¹⁸ As we shall see, this seems to have been a consistent trait of Tudor's realizations.

be indicated by asterisks and the letter *k* (see page 1 in Fig. 3-5, above), but this is not certain from Tudor's notation.

Performance

Now to play it.

As a result of the pitch-specific clusters in realization, Tudor's notation often appears to show vertical sonorities comprised of *distinct* pitches and hence extremely daunting to the performer. Understandably, when seen in this light and given Feldman's tempo marking, the realization looks so impossible to perform with any realistic degree of accuracy as to suggest that Tudor's purpose in preparing it was little more than a theoretical exercise. Indeed, Wolff's impression was that much of Tudor's work in preparing a performance was spent

working out, maybe with a pencil and paper at a desk, how he was going to do it -- in a way, like editing a text. He seemed as much interested in the solutions to problems, as it were, as in just playing. These problems were what he enjoyed, he really liked that. That's what was so remarkable.

Fortunately, Tudor recorded his realization of *Intersection 3*, and it is one of the rare documents of Tudor's virtuosity at the keyboard.¹⁹ Not only does the recording demonstrate

¹⁹ The recording was first issued in 1960 as part of Columbia ML-5403/MS-6090, an album devoted entirely to Feldman's music, for which Tudor also recorded *Piece for Four Pianos* (1951), with Russell Sherman, Edwin Hymovitz, and Feldman; *Extensions 4* (1953), with Sherman and Hymovitz; *Two Pieces for Two Pianos* (1954), with Hymovitz; *Projection*

that Tudor's realization is indeed playable: Tudor plays it with the flair, control, authority, and, above all, ease of manner -- hiding the effort and skill needed to make the seemingly impossible sound easy -- reminiscent of the great pianists of the early twentieth century. There is no sense of strain, no hint of the staggering difficulties Tudor has posed for himself (and for any others who want to try their hands and arms at his realization). In fact, we might easily assume the recorded performance to be an improvisation from Feldman's graph score were Tudor's written realization not evidence to the contrary.

To Wolff and Cunningham, this older style of piano-playing characterized Tudor's concerts. Even the atmosphere was different. "You could hear people listening," said Wolff, adding that, in performance, Tudor was

remarkably selfless, in an almost mystical sense. I mean, he just really erased himself; he just *did* what had to be done. He's really an *instrument*. And with that was a kind of matter-of-factness. He was very business-like, with no nonsense; he just *did what had to be done*. He chose to *do* things, of course, that were extraordinary and unusual and not at all "business-as-usual." But having done that, he just went about them without any fuss or bother, very directly.

4 (1951) and *Extensions I* (1951), both with Matthew Raimondi. The remaining works on the album are *Structures* (1951) and *Three Pieces for String Quartet* (1956-56), played by Raimondi, Joseph Rabushka, Walter Trampler, and Seymour Barab. Deleted in 1963, the album was reissued six years later on Columbia's Odyssey label (Y32 16 0302), when it was retitled "Morton Feldman: The Early Years," then deleted again in 1971. See Carol J. Oja, *American Music Recordings* (Brooklyn: Institute for Studies in American Music, 1982), 100.

And Cunningham, who had himself studied the piano as a youth, found Tudor's playing effortless and more.

I was absolutely struck by...the only word I can use is 'grace'. It was astonishing, the amount of energy displayed with the minimal effort. The way he made *fortes*, very, very loud sounds; you could watch and you couldn't see how anyone could make such a loud, distinct, clear sound with such little visible effort.

Gaining an understanding of how Tudor mastered his realization of *Intersection 3* meant attempting to play it myself. In doing so, I found that its most complex sonorities are not extended *chords* but extended *forms of clusters*. And when approached in this manner, they not only fit the hand but in most cases do so quite comfortably. I have found, for example, a number of cases in which successive sonorities can be played with a certain degree of common fingering. A typical example of this occurs when left-hand 1 and 2 take a white and a black key, respectively, in two successive sonorities, thereby facilitating the hand in locating the second sonority (the thumb is always the most reliable guide for the rest of the hand). Consider another example, a white-key cluster B4-A5 above a G#3 (Fig. 3-12).

Fig. 3-12. Tudor, realization of *Intersection 3*, p. 1:
system 3, sonority 10



Obviously, this is more than five fingers can handle, even by taking 2 keys with the thumb and other fingers. But by moving the heel of the hand in (that is, forward), the white keys are easily negotiable and left-hand 5 can take the G#3 with little difficulty and no discomfort.

Likewise, in the cluster appearing two sonorities later, there is a C#2 on the bottom of the white-key cluster D2-A3, corresponding to the *cmd* 6L in m. 52 of Feldman's score (see Fig. 3-12, above). With the left hand moved in and the thumb curved (so as not to become stuck between the black keys), the C#2 can be taken with 5 or even 4 and, again, very comfortably.

Tudor's Realization of *Intersection 2*

Intersection 3 marked the first instance in which Tudor prepared a work for performance by writing out his own performance material. At some unspecified later date, he undertook a realization of Feldman's earlier *Intersection 2*.

The realization (Fig. 3-13) is written in pencil in a small notebook consisting of 20 folios of 6-staff music paper bound between brown covers. As in Tudor's realization of *Intersection 3*, the notation, *recto* and *verso*, is in pencil and in standard staff and cluster notation. The autograph is not paginated, but the corresponding pagination of Feldman's score is indicated in Roman numerals.²⁰

In this realization, barlines have been drawn to represent the measures in Feldman's graph score. To a great extent, pitch and duration have been determined for the beginning, end, and a good deal in between. But there are numerous measures, beginning on fol. 6v, which are either empty or contain only a cue for the appropriate *cnd* (there are no analogous cues for the three registral dispositions *H*, *M*, and *L*). Additional sketches or revisions are entered in staves above and below the principal notation.

Compared to his realization of *Intersection 3*, Tudor's use of barlines here is a slight but revealing increase in notational sophistication, for it strongly suggests that his purpose in preparing a realization of the earlier *Intersection 2* was not for reasons of performance but for publica-

²⁰ The fact that some of the Roman numerals in Tudor's autograph do not precisely correspond to the pagination of the published version of *Intersection 2* suggests that Tudor prepared Text 2 from an earlier exemplar. For example, fol. 2v of Tudor's realization shows page 2 of Text 1 (numbered "II") beginning with a rest equivalent to 3 measures, whereas Peters 6922 divides this rest, showing the first measure at the bottom of page 1 and mm. 2 and 3 at the top of page 2.

Fig. 3-13. Tudor, realization of Intersection 2, fol. 1r

tion. And the fact that publication did not take place would explain why the realization is incomplete.

It would also explain the difference in appearance and condition between the two realizations. That of *Intersection 2* is precise down to the empty measures awaiting Tudor's notations, and it is written in a manuscript book in which no other material appears. The realization of *Intersection 3*, on the other hand, is complete in all the parameters necessary for its performance save dynamics; moreover, the score itself, written on loose bifolios, is very fragile and faded, reflecting frequent and repeated use in performance. (*Intersection 3* was one of the staples of Tudor's repertory in the mid-1950s).

Conclusions

[Interviewer]: Then you mean your compositions are improvisations?

[Feldman]: I do not know any musical improvisations.²¹

Despite the indeterminacy at the levels of pitch, dynamics, and, to some degree, duration in *Intersection 3*,

²¹ Feldman, "Conversations with a Young Composer," typescript in the David Tudor Collection. The undated typescript is a translation of part of the program notes for the recitals given by Tudor and Severino Gazzelloni in 1956 at the Sala piccola del Conservatorio in Milan on Thursday 6 December and the Sala delle Colonne of the Cà Giustinian in Venice on Saturday 8 December. The program booklet, also in the Tudor Collection, contains a series of notes under the collective title *La funzione dell'interprete nella nuova musica*; the major portion of the notes on Feldman consists of a dialogue with an anonymous interlocutor.

it is difficult to imagine an improvised performance of the work that could be faithful to the textural density of Feldman's notation. Had Feldman placed but one less restriction on the performer -- had he specified registers alone but not the number of pitches within them -- the idea of improvising a performance of *Intersection 3* might be more realistic, since a pianist could interpret the notation solely in terms of simple clusters (or even single pitches). For Tudor, however, the first problem in playing *Intersection 3* was not that of its performance. Rather, it was to discover the unsuspected challenges Feldman's work might be induced to offer.

In a concrete sense, this meant extensions of and new demands on the pianist's coordination. In a series of memoranda on piano-playing and new music, Tudor listed a number of works in his repertory according to their innovations in playing techniques. In one of these lists, under the heading "Mechanism," we find the note "recognition of higher coordinations, their use, formation of new[,] still higher coordinations." Another memorandum contains two lists headed "Mechanism and performance" and "new pianistic resources"; the second list identifies a number of exemplary works, including *Intersection 3*.²² Among these "higher

²² The memos are undated, but internal evidence shows that they were prepared no earlier than 1955, the year one of the other works on the list (Brown's *Four More*) was written. Tudor probably wrote the memos in connection with his work at Darmstadt, either for his seminars in the per-

coordinations" were the rapid and continuous alternation of hand and arm positions required to negotiate the cluster-types Tudor had devised in his realization of *Intersection 3* and which so impressed Stockhausen when he first heard Tudor play in 1954.²³

Here I return to an earlier point. My contention that most of the clusters found in Tudor's realization of *Intersection 3* fit the hand comfortably is based on my own experience in negotiating them with playing techniques of my own. I do not, of course, claim that these are the same, or even similar to, those used by Tudor himself, but they are central to my hypothesis that Tudor's decisions regarding

formance of new music or in preparation for Wolpe's lecture "On New (and Not So New) Music in America." The lecture, given at Darmstadt on Thursday 19 July 1956, included musical examples played by Tudor, most of them identified in Wolpe's text only by the composers' names. For Wolpe's text, with notes and an English translation by Austin Clarkson, see *Journal of Music Theory* 27, 2 (Spring 1984), 1-45.

²³ Stockhausen met Tudor during the first trip to Europe of Tudor and Cage in the fall of 1954. Like Cage, Stockhausen attached himself to Tudor's abilities, making Tudor into a somewhat reluctant apostle for his music over the course of the following ten years and dedicating to him the *Klavierstücke V-VIII*. Tudor said that, at their first meeting, "Stockhausen was fascinated by two things, the kinds of attack I had developed for *Music of Changes*, and the clusters in Feldman's piece." Kurtz, *Stockhausen*, 75. The 39 letters from Stockhausen in the David Tudor Collection, written from 1954 to 1965, deal chiefly with matters of schedules, concert dates, programs, etc. But they also contain comments on his music -- including several corrections of some of the *Klavierstücke* -- as well numerous remarks praising Tudor and stressing his importance to the composer.

the pitch content of his realization were determined as much by their *tactile advantage* as by any putative compositional method.

This is not to claim that the realization is easy to play. On the contrary, it is a virtuoso piece in any sense of the term. The clusters are of unprecedented complexity, and it takes quite a bit of work to find those places where they do fit comfortably. And I do mean "find", not "force"; learning the piece means letting any necessary part of the hand find its own way to the clusters, which it will do if one modifies or even gives up playing habits which are not helpful in new circumstances. Tudor's realization of *Intersection 3* is pianist's music in the same way as are Busoni's original compositions and Godowsky's arrangements and paraphrases -- music rewarding to play. And by "rewarding" I mean that it feels good to play; that it fits the hand or, in the case of *Intersection 3*, the hands and arms; that the moves over the keyboard are a pleasure to make. It is music written with a pianist's feel for the keyboard and for piano-playing. In Tudor's realization of *Intersection 3*, continuity is tactile as well as musical.

This point is directly pertinent to Tudor's relation to the piano music of the experimental avant-garde. The documents, both of Tudor's decisions in preparing a work (not only *Intersection 3*) for performance and of his memoranda on the demands of the new piano music, show that his devotion

to new music was due not only, perhaps not even primarily, to new sounds but to new possibilities for piano-playing. In other words, Tudor appears to have been motivated by a need to change ingrained habits of playing the piano. Experimental music was an ideal means by which to do this, for if Text 1 were not sufficiently challenging, Tudor could make it so with his Text 2.

Chapter 4

Implicative Graphics II: Earle Brown, *Twenty-five Pages* and *Four Systems*

Introduction

Earle Brown first met David Tudor in the summer of 1951, when Tudor gave two recitals at the University of Colorado in Boulder while on tour with Jean Erdman.¹ Brown and his wife Carolyn were living in Denver, where Brown was teaching Schillinger composition.² Cage and Cunningham, on

¹ Erdman, who gave regular summer dances classes at the University, procured the opportunity for Tudor to give his first solo recitals at the piano, on Tuesday 26 June and Thursday 5 July. Tudor's two programs were typical: on the first was music by Stravinsky (*Piano Rag Music*), two works by Schoenberg (Opp. 11 and 23) separated by Bartók (*Three Etudes*, Op. 18), Wolpe (four movement of the *Battle Piece*), and Webern (the *Variations*, Op. 27). The second recital reflected Tudor's interest both in the newest music and in rarely heard works from the past he believed worth presenting. He performed pieces by Cowell (*The Banshee* [1923]), Hauer (*Atonale Musik* No. 5 [1922] and the *Etude*, Op. 22, no. 9 [1926]), Nicolai Roslavetz (1881-1944) (*Etude no. 2*, *pianissimo* [December 1914]), Wladimir Woronoff (1903-80) (*Sonnet pour Dallapiccola* [1948]), Boulez (the *Second Sonata*), and gave the first performances of music that was composed especially for him within the previous half year: three *Intermissions* by Feldman (January), Wolff's *For Prepared Piano* (April-June), and Part 1 of *Music of Changes*, completed, according to Cage's date on the score, on 16 May.

² Brown studied the compositional techniques of Joseph Schillinger during the years 1946-50, having been grounded in the mathematics required by the Schillinger system when he was an engineering student at Northeastern University in 1943-44. Brown characterized the Schillinger approach:

[B]ased as it is on the quantitative and qualitative analysis of SOUND, the physical *material*, and the

their own tour of the western states in the spring, stopped in Denver, where Cunningham was greatly impressed by Carolyn Brown when she danced in a master class he gave there. Cage and Cunningham told the Browns of Tudor's impending recitals, and they drove down to Boulder to hear one of the programs. At the end of the recital, Brown went backstage to congratulate Tudor, whose reply was typically cryptic: "I knew there was one person in the audience who was listening." A year later, the Browns moved to New York, where Earle Brown began an association with Cage that was to last until the end of the 1950s and Carolyn Brown an association with Cunningham that was to last even longer.³

After moving to New York, Earle Brown began a series of "experiments in notation and performance processes" culminating in the pieces eventually published under the collective title *Folio*.⁴ Each of the six works in *Folio* is writ-

suggestions of innumerable bases for "objectively" controlling and generating the material within whatever "aesthetic" context one chooses, [it] is still the most reasonable and exhaustive technical material available; a "structural functions of sound" approach.

Brown, notes to Time/Mainstream Recording MS-5007 (rel. 1963), emphases original.

³ Carolyn Brown was the principal dancer in the Cunningham Company from its formation in the summer of 1953 until 1972.

⁴ Although he has continually been linked to the so-called "Cage School" or "New York School" -- Cage, Feldman, and Wolff -- and therefore to the vague notion "chance music," Brown has been emphatic in pressing his independence, to the extent of denying that such a "school" or "group" existed: "I . . . never felt like it was a group.

ten on a single page and explores a different notational technique. The most famous -- and visually still the best-known of all Brown's works -- was later named *December 1952* for the month in which it was composed, though the title on the autograph reads *For David Tudor, Dec. 1952*. The score of *December 1952* is one of the clearest examples of early indeterminate notation (Fig. 4-1).⁵ Tudor's copy of *December 1952* contains no explanation of the notation or of how the performer(s) might interpret it, but Brown supplied

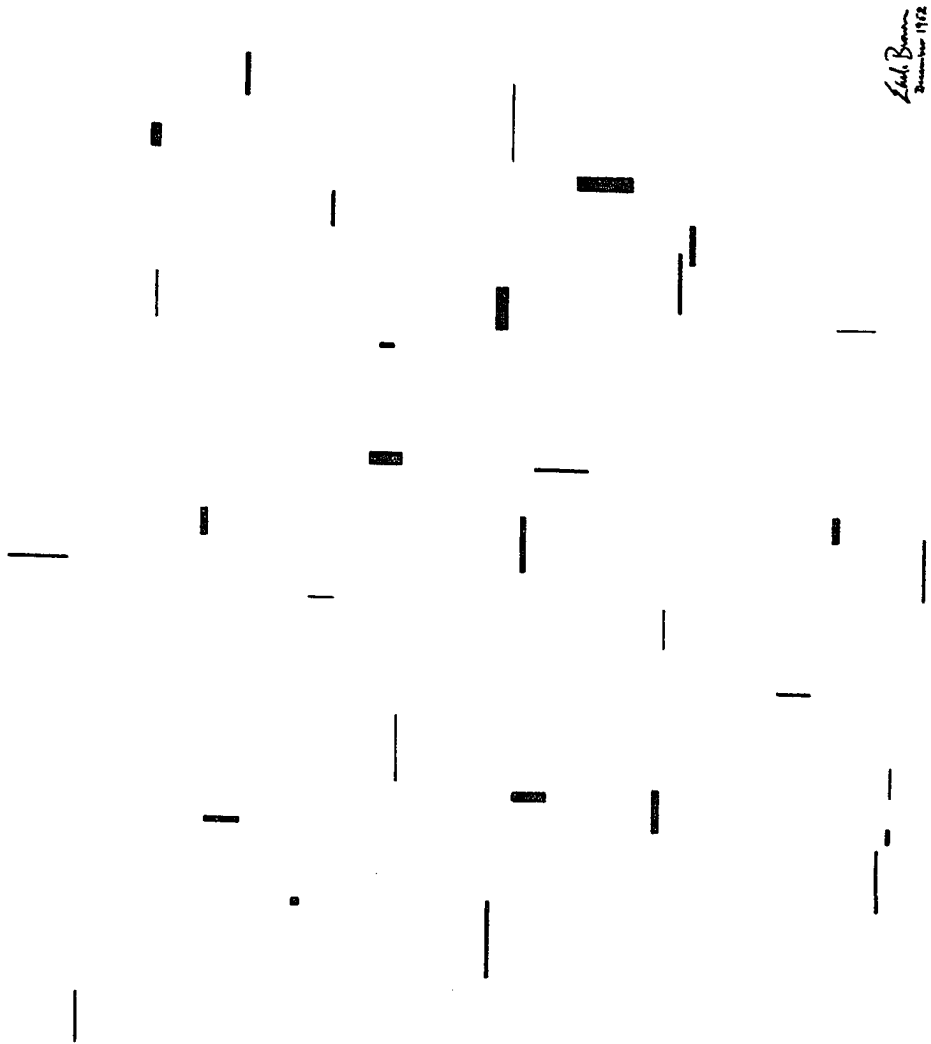
The phrase 'Cage School' always seems ironic to me because our earliest musics didn't sound alike, our developed musics in the fifties didn't sound alike, and we don't sound alike today." Brown also described the association of the four composers as aesthetic, rather than specifically musical:

Morty and John and Christian and David and I were brought together by our extraordinary interest in the other arts We were artistically motivated more than musically motivated What brought us together was not that our musics were so much alike; it was more that our minds were working quite alike. The influences -- art influence, literary influence, painting influences, etcetera -- happened to coalesce, they happened to parallel. It was fantastic.

In this sense, the four composers begin to resemble those whom Henri Collet dubbed *Les "Six" français* and whose association in Paris after the First World War was perhaps not even aesthetic: Poulenc himself stated that "the Group of Six was not an aesthetic group, but simply a friendly association." See N. Perloff, *Art and the Everyday: Popular Entertainment and the Circle of Erik Satie* (Oxford: Clarendon Press, 1991), 5-6.

⁵ But not the first. See, for example, Paul Ignace's *It Is (for Orchestra)*, dated 1946, a geometric line drawing with no performance instructions of any kind, reproduced in David Cope, *New Directions in Music*, 4th ed. (Dubuque: William C. Brown Company Publishers, 1989), 264.

Fig. 4-1. Brown, Folio: December 1952



L. B. Brown
December 1952

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performance notes, or suggestions, when the *Folio* pieces were published in 1961. The inscrutable notation of *December 1952* has led to careless readings and performances; not surprisingly, Brown maintains that the notation signifies both limitations and implications, a viewpoint he is constantly at pains to explain to the ensembles he frequently conducts in performances of the work. It is for this reason that I refer to the notational techniques used by Brown in the works discussed in this chapter, even though they differ from the techniques of Feldman, as *implicative graphics*.

I use the term here to mean two things. Brown's graph notation is often suggestive of earlier notational conventions; register may be read from vertical position, texture from the thickness of a notation. But it is suggestive too of simple visual correlations; duration can be read into the length of the notations, and thickness can as well suggest dynamic level.⁶

Brown attributed his development of time notation, or proportional notation, to Tudor's performances of the conventionally notated *Perspectives* of 1952. Brown's early works, beginning with the *Three Pieces for Piano* of 1951, are traditionally notated. But although they use barlines,

⁶ Chew's observation is worth repeating in the present context: ". . . a certain degree of influence of conventional notation often seems evident, particularly in the choice of shapes associated with articulations and dynamics, and in the idea that a score represents a graph with a pitch range as its vertical axis and a time-scale as its horizontal axis." "Notation", *The New Grove*, 13:415.

they are not metered in any systematic sense, using instead rhythmic cells devoid of metrical organization and exactly analogous to Boulez's *cellules*.⁷ *Perspectives* reflects Brown's new acquaintance with Tudor's piano-playing, and in more than its dedication. Tudor had performed the *Three Pieces for Piano*, beginning in 1952, but found little challenge in playing them. Consequently, Brown compounded the density level in *Perspectives* far beyond the basic two-part writing in the earlier pieces.⁸

Brown asked Tudor how he counted the rhythmic cells in *Perspectives*, only to learn that Tudor was not counting them at all. Instead, Brown said,

he was playing it proportionally. It took me a while to figure it out, to think about what it meant. What it meant to me was "well, hell, if he's not counting, why am I putting all the 'countable' things in here, if he's not paying attention to them? If he's playing proportionally, then 'this' takes 'this much time,' 'that' takes 'that much time'": therefore, *Folio*.

Brown regarded *Folio* as "a voyage that I was making in search of a notation." The search was for a compositional equivalent to the possibilities of mobile identity found not only in the works of artists such as Pollock and Calder and the writings of Gertrude Stein (especially her critical essays), but also in musical improvisation (Brown had played

⁷ Boulez's First and Second Piano Sonatas, for example, are also barred but not metered.

⁸ See Brown's remarks on Tudor's "threshold of boredom" in Chapter 2, p. 44, above.

trumpet in jazz bands since high school).⁹ The *Folio* pieces were composed by the end of 1952. But I have found no evidence that Tudor or anyone else performed any of them until 1960, when Cunningham used *December 1952* for his dance "Hands Birds."¹⁰

Twenty-five Pages (1953)

Brown's next work was a kind of notational consolidation. *Twenty-five Pages*, completed in the spring of 1953, is notated in graphic figures similar to those in *December 1952*, but the notations have been reduced to just one shape and thickness. Horizontal lines denote pitches on conventional staves, though whether in the treble or bass clef, or floating between both, is a decision Brown leaves to the performer. The lines also indicate durations which "are

⁹ Brown's interest in indeterminacy is best understood as a means of stimulating -- "provoking" is Brown's preferred term -- situations of indeterminacy in performance, in other words, improvisation. In his notes to *Folio*, he wrote that performance of the pieces called for "involvement of the performer's *immediate* responses to the intentionally ambiguous graphic stimuli" (*italics added*).

¹⁰ "Hands Birds" -- the title is the complete text of a poem by M. C. Richards -- was first performed as a solo by Carolyn Brown on Saturday 24 September 1960 at the Teatro la Fenice in Venice. *December 1952* was played by Tudor and Cage in a version for two pianos. In 1974, Tudor recorded his realization of *December 1952* for an album devoted to Brown's music (CRI 330, rel. 1975).

The works which followed *Folio* in their use of graphically notated proportions were *Twenty-Five Pages* of 1953 and *Four Systems* of 1954. Thereafter, Brown continued writing open-form works, but added, through parametric specifications, the corollary condition of *closed content*.

precise relative to each other and to the eventual time value assigned to each line system."¹¹ Accidentals and articulations are also written in standard notation.

So, too, are dynamics. But here Brown made an important modification. Because each page of the score may be read from both its original direction and by inversion, Brown wrote the dynamic markings in a functional script which allows the identity (though not the order) of the letters *p* and *f* to hold under inversion (Fig. 4-2).

Although *Twenty-five Pages* may be read in any sequence, all twenty-five pages must be played. One way to do this is by superimposing the pages, something Brown himself did in 1957, when he prepared a version of *Twenty-five Pages* for four pianos by combining a number of pages from his original set of twenty-five into four sets to be performed simultaneously.¹² The original performance of *Twenty-five Pages*,

¹¹ These lines are the *Strecken* Dahlhaus criticizes in his "Notenschrift Heute" (1965), in *Schönberg und andere: Gesammelte Aufsätze zur Neuen Musik* (Mainz: Schott, 1978), 244-69; the discussion of *Strecken* is on pp. 251ff. This is one of the most important of the numerous essays omitted (evidently by Dahlhaus himself, who made the selection) from the English translation by Derrick Puffett, Alfred Clayton, and Stephen Hinton, *Schoenberg and the New Music*, (Cambridge: Cambridge University Press, 1987).

¹² The performance took place at Carl Fischer Concert Hall in New York on Tuesday 30 April 1957; in addition to Tudor, the other pianists involved were Cage, William Masselos, and Grete Sultan.

Understandably, full-scale performances of *Twenty-five Pages* by twenty-five pianos are rare, though they have taken place. And the pianist Ellsworth Snyder of Madison, Wisconsin, has frequently performed all twenty-five pages simulta-

Fig. 4-2. Brown, *Twenty-five Pages*, p. 1, showing modified notation of dynamics

The image displays a musical score for the piece 'Twenty-five Pages' by John Cage. It consists of six systems of staves, each with two staves. The notation is highly graphic and abstract, focusing on dynamics. Instead of traditional notes and rests, the score uses various symbols and lines to represent sound intensity. Key features include:

- Horizontal lines of varying lengths and thicknesses, some with vertical tick marks, indicating the duration and intensity of sounds.
- Vertical lines and dots placed above or below the staves, often accompanied by sharp symbols (#) or other dynamic markings.
- Groupings of these symbols, sometimes enclosed in brackets or boxes, suggesting specific dynamic events or textures.
- A sparse and irregular distribution of these dynamic markings across the staves, reflecting the aleatoric nature of the piece.

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however, was by Tudor on the first in a pair of recitals given at Carl Fischer Concert Hall in New York on Wednesdays 14 and 28 April 1954. On the second recital, Tudor gave the first performance of Brown's most recent work, an outgrowth of *Twenty-five Pages* with the somewhat similar title *Four Systems*.

Four Systems (1954)

In a sense, I was like a producer. The material stimulated me to imagine what could happen; the complications came as a result of my deciding to use it.

David Tudor

The title of Brown's new work was of Tudor's coinage. In fact, it was Tudor's idea that *Four Systems* be performed at all.

Brown composed the work as an impromptu gift for Tudor's twenty-eighth birthday on 20 January 1954, writing it on a sheet of cardboard found backstage at the Brooklyn Academy of Music during a dress rehearsal by the Cunningham Company. Both Brown and Cage, suddenly reminded of the date, quickly set about composing birthday presents (Cage's gift was *Music for Carillon No. 2*, notated with pin pricks

neously by pre-recording four sets of five pages each on four tape tracks, which are then played during his live performance of the remaining five pages. Although closely resembling Brown's own later version of *Twenty-five Pages* for four pianos, Snyder arrived at his interpretation independently.

on the back of a poster announcing Vladimir Horowitz's twenty-fifth anniversary recital at BAM the previous November.)¹³ Several weeks later, Brown received a telephone call from Tudor, who was preparing his April recitals. Having scheduled *Twenty-five Pages* for the first recital, Tudor wished to include Brown's new work on the second and needed its title for the program. Brown, who had composed the piece as something of an *Albumblatt*, replied that he never thought of naming it, whereupon Tudor suggested *Four Systems*, a title as simple, practical, and descriptive of the new score as *Twenty-five Pages* had been of the earlier one.

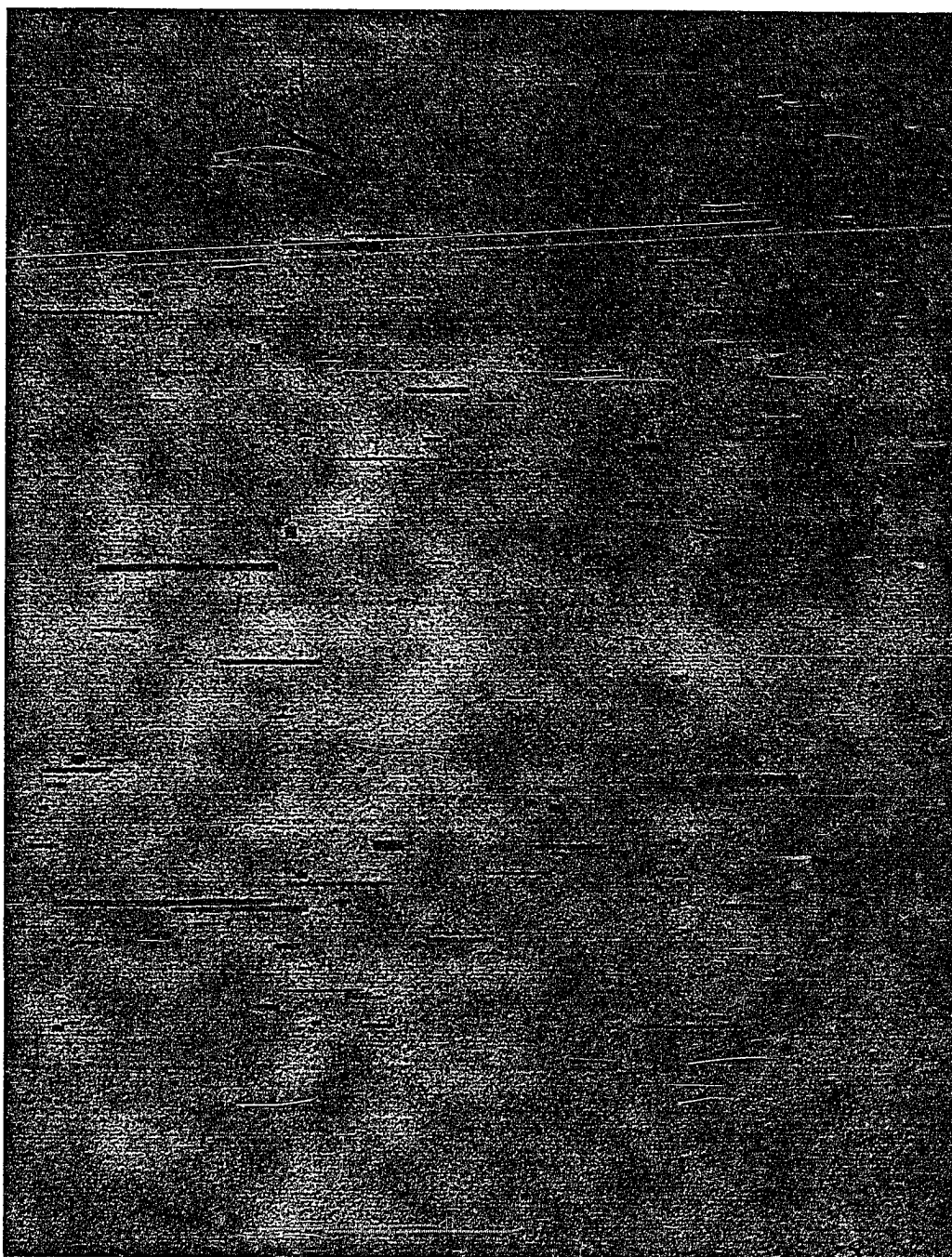
Notation

The notation of *Four Systems* (Fig. 4-3) combines the horizontal lines used in *Twenty-five Pages* with the varying thicknesses of *December 1952*. The notation is in open space; unlike *Twenty-five Pages*, there are neither staves nor clefs.

In *Twenty-five Pages*, Brown had specifically allowed readings of the score from its original and inverted posi

¹³ Both autographs are in the David Tudor Collection. Brown later prepared *Four Systems* for publication by tracing the notation of the original autograph on white paper. The publication (Associated Music Publishers, Inc., AMP 96124/1-8 [1961]) contains both *Folio* and *Four Systems*. In the following discussion, it is important to bear in mind that Tudor prepared his performances of *Four Systems* from Brown's original cardboard score.

Fig. 4-3. Brown, *Four Systems*: original autograph on cardboard



tions; in *Four Systems*, he permitted readings in retrograde and retrograde inversion as well. The original autograph, however, suggests these additional possibilities only obliquely, in the two inversions of the composer's initials and date "EB 1-20-54" and of the first word in the inscription "Happy Birthday David." In instructions added for publication, Brown wrote that the notation

may be played in any sequence, either side up, at any tempo(i), pencil lines define outer limits of keyboard. Thickness may indicate dynamics or clusters.¹⁴

Even without the qualifier "keyboard," the performance instructions -- really no more than suggestions -- imply a pitch boundary. The distribution of the notational signs in open space follows the practice of standard notation, and even that of staffless neumes. Resemblance to the latter is doubtless coincidental, but it does point to the visual correlation between spatial location and frequency assumed by almost all previous Western notation.

Duration, Temporal Sequence, and Dynamics

The lengths of the horizontal lines indicate durations relative to one another within the work -- in other words, they are a modified form of the proportional notation of *Twenty-five Pages* and *Folio* -- though this is specified neither in the notation nor even in Brown's comments on the work. Recognition of the notation as proportional, there-

¹⁴ *Folio and Four Systems*, punctuation as in original.

fore, depends less on earlier systems of notation than on a knowledge of Brown's own earlier work. Although the notation of *Four Systems* "may be played in any sequence, either side up" -- that is, in the orders O, I, R, and RI -- this information is not given in the original autograph from which Tudor worked, where temporal sequence is indeterminate. Finally, the densities of the horizontal-line notation may suggest dynamics, but they may as easily imply textures. Brown's performance instructions emphasize this ambiguity: densities "may indicate either dynamics or clusters."

Problems of Performance

The variable content of *Four Systems* makes this work unrepresentative of Brown's predominant interest in open form with fixed content, the format of most of his other compositions, both preceding and following *Four Systems* (for the same reason, *December 1952* is unrepresentative). The information provided by the notation and instructions is less straightforward as well, to say the least. Carolyn Brown once noted that *December 1952* "is probably the most open score ever written short of handing the performer a sheet of blank paper."¹⁵ Brown came close to this extreme again, and for the last time, in *Four Systems*.

¹⁵ Merce Cunningham, ed. and with photographs by James Klosty (New York: Limelight Editions, 1986, orig. published 1975), 27.

The obvious questions for any pianist faced with the graph notation of *Four Systems* are which keys to play and when, for how long, and how loudly. For Brown himself, the answers lay in improvisation; this was, in fact, the idea behind *Four Systems*. As Tudor saw it, the larger problem was to make the notation not only yield information necessary for performance, but to do so in ways that he would find interesting as a pianist. Improvisation did not solve this problem; it was but a starting point.

At the first performance of *Four Systems*, Tudor played from Brown's cardboard score. That he later prepared his own performance material suggests that performing from Brown's notation was to some extent unsatisfactory. To make the notation sufficiently interesting, it was necessary to find solutions unpredictable even by improvising from it in performance.

Tudor's Realization of *Four Systems*

Tudor prepared his realization of *Four Systems* for use during his first European tour in the fall of 1954. The only other work by Brown on his repertory list for the tour was *Perspectives*, which Tudor played four times before playing *Four Systems* on Wednesday 3 November at the Kunstgewerbemuseum in Zurich. Tudor's recollection, "I made the [realization] on my way to Europe, because I needed a new piece by Earle," renders the relatively late date of the

performance -- two weeks into the tour -- understandable: the realization was not yet ready.

The realization was written on 3 folios of Presser ivory 12-staff music paper, numbered 1-3 in the upper right. Tudor's work notes, tables, and charts contain lists of measurements and calculations for all of the parameters of his realization. They provide evidence for the following hypothetical reconstruction of Tudor's process of preparing his performance material of *Four Systems*.¹⁶

Tudor began by labelling the four systems of Brown's score A, B, C, and D. Then, to determine the pitch content of each, he made a template with 88 tracks, corresponding to the keys of the piano, and overlaid it on each system of the cardboard, making one overlay for each system as he read it first from one direction and then by inverting the page.¹⁷ To keep track of these directional readings, Tudor used arrows ↑ and ↓, respectively (later, he would indicate additional readings by → and ←). This resulted in 16 readings of Browns' score, 8 at ↑ and ↓ when reading from left

¹⁶ I am indebted to Earle Brown for bringing to my attention Tudor's use of a template and calipers, which not only figure into the following discussion but were my earliest clues to the nature of Tudor's working methods in general.

¹⁷ Tudor continued to use templates to take vertical measurements in his later realizations for piano, making new templates as needed according to new notational dimensions of a score (there are, for example, three templates of different sizes among Tudor's work materials for his first realization of Cage's *Concert for Piano and Orchestra*).

to right, 8 at † and ‡ when reading from right to left. Inverting a system results in a different ordering of the notational figures, though there is not a strict retrograde relation between the numberings (for example, the first of the 38 notations in system A, when read from A†, becomes notation number 33 when read from A‡). Tudor then entered the resulting piano-key numbers on two work sheets and in spatial positions corresponding to those in Brown's score (Fig. 4-4).

To measure the lengths of the notational signs in Brown's score, Tudor used a pair of calipers, entering the results on five additional work sheets (Fig. 4-5).

From these steps, Tudor was able to construct a score for use in his performances of *Four Systems* beginning in the fall of 1954. Tudor also used this score for a private recording made ca. 1955-56 in the New York studios of Capitol Records, where Brown was working as a recording engineer.¹⁸ The second of the 3 pages of the realization appears in Fig. 4-6. Pitch notation is in solid noteheads, with stems to indicate clusters. Brackets show the duration of each sonority; in other words, commencement and cessation are notated proportionally. The three folios contain eight segments of notation, each reflecting a different reading of

¹⁸ Brown produced the recording during his off-hours at the Capitol Studios, where he worked from 1955-1960. During the session, Tudor also recorded Brown's *Three Pieces for Piano*.

Fig. 4-4. Tudor, first work sheet for realization of *Four Systems*: piano-key numbers based on template measurements of Text 1.

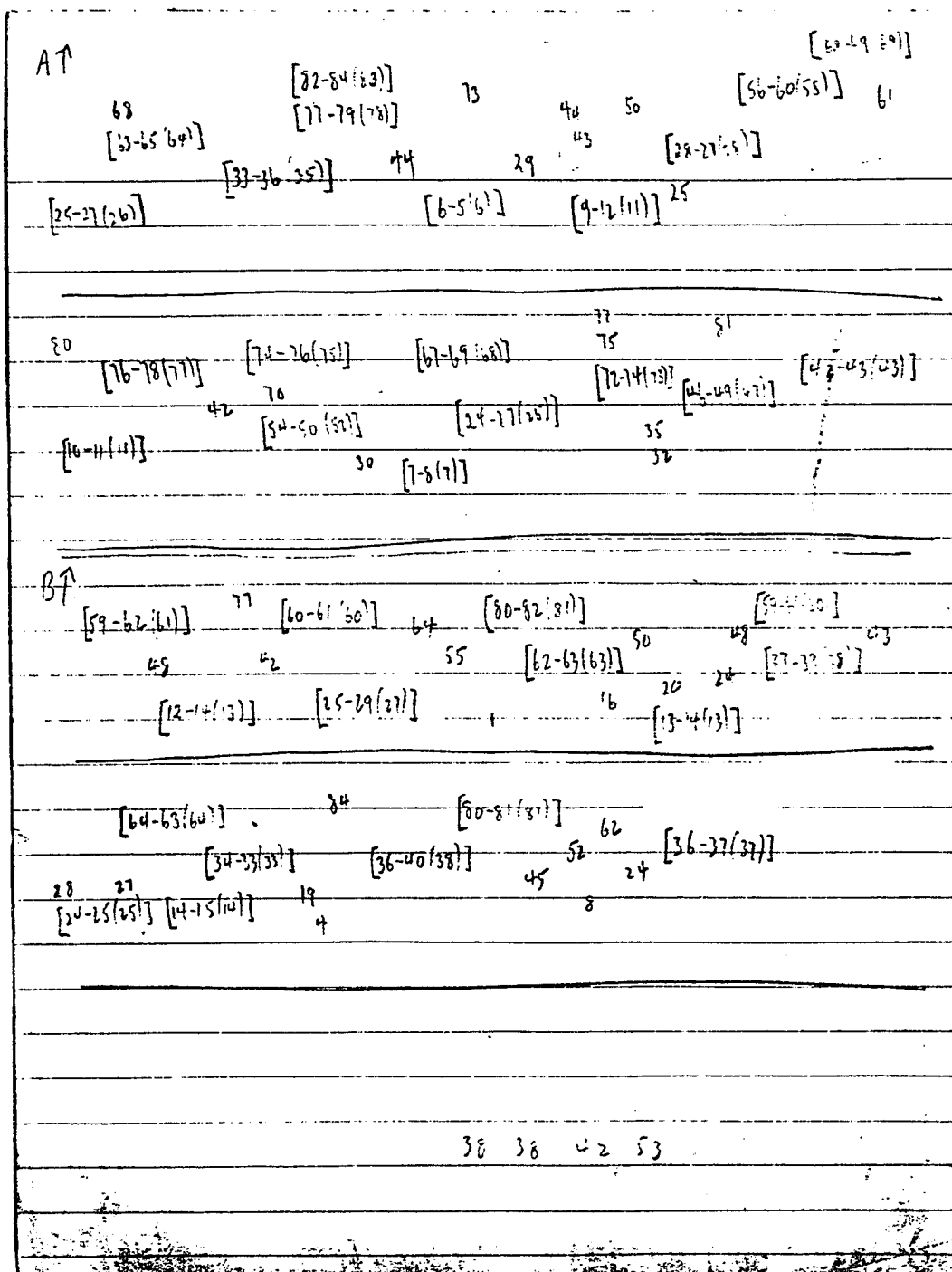


Fig. 4-5. Tudor, work sheet for realization of Four Systems: first page of caliper measurements of lengths of notation in Text 1.

A. ↑	D. ↑
1. $3/4 - 1/16$ $9/16$	1. $5/8 - 1$ 79, 10 $3/8$
2. $19/32 - 25/32$ $1/16$	2. $15/16 = 3^{17}/32$ 55-76, 32-43 $2^{19}/32$
3. $15/16 - 1/8$ $7/16$	3. $17/16 - 19/32$ 7, 81 $7/32$
4. $15/16 - 2/8$ $3/16$	4. $13/16 - 1/16$ 40, 49 $3/8$
5. $2^{21}/32 - 2^{17}/32$ $1/4$	5. $15/16 - 1^{3}/32$ 4-65, 82-43 $5/32$
6. $25/32 - 2^{13}/32$ $1/4$	6. $15/8 - 1^{11}/16$ 42-9, 40-1 $1/16$
7. $2^{19}/32 - 2^{15}/32$ $1/8$	7. $15/16 - 2^{11}/16$ 72-8, 16-7 $1/8$
8. $2^{17}/32 - 2^{13}/16$ $3/32$	8. $2^{19}/32 - 2^{15}/8$ 15, 73 $3/32$
9. $2^{25}/32 - 3/8$ $11/32$	9. $2^{11}/32 - 3^{31}/32$ 53-4, 35-76 $15/8$
10. $3/8 - 3^{31}/32$ $3/32$	10. $25/8 - 2^{29}/32$ 48, 41 $9/32$
11. $3^{11}/16 - 3^{5}/16$ $1/8$	11. $3/16 - 3/8$ 60, 29 $1/16$
12. $3^{9}/32 - 3^{5}/8$ $3/32$	12. $3/4 - 3^{9}/16$ 27, 62 $5/16$
13. $3^{9}/32 - 2^{13}/32$ $1/8$	13. $3/4 - 3^{5}/8$ 13-54, 74-65 $3/8$
14. $3^{31}/8 - 3^{27}/16$ $1/16$	14. $3^{11}/32 - 3^{7}/2$ 49-50, 39-40 $5/32$
15. $3^{11}/16 - 3^{7}/32$ $1/32$	15. $3^{9}/16 - 3^{27}/32$ 37-98, 50-21 $9/32$
16. $5^{11}/8 - 4^{31}/16$ $1/4$	16. $3^{21}/32 - 4^{11}/16$ 20, 69 $2^{9}/32$
17. $4^{31}/32 - 4^{27}/16$ $3/32$	17. $3^{11}/16 - 4^{31}/32$ 68, 26 $1^{9}/32$
18. $4^{31}/8 - 4^{27}/4$ $3/4$	18. $3^{13}/16 - 3^{7}/8$ 45(6), 44 $1/16$
19. $6^{5}/32 - 5^{11}/16$ $2^{11}/32$	19. $3^{13}/16 - 3^{29}/32$ 5, 84 $3/32$
20. $3^{11}/16 - 6^{25}/32$ $3/32$	20. $3^{13}/16 - 3^{15}/16$ 66-81, 21-32 $1/8$
21. $6^{27}/32 - 3^{11}/16$ $5/16$	21. $3^{27}/32 - 4$ 29, 60 $5/32$
22. $6^{27}/32 - 1/16$ $5/32$	22. $3^{15}/16 - 4^{11}/16$ 59, 30 $1/8$
23. $7^{11}/16 - 8^{11}/16$ $3/16$	23. $4 - 4^{31}/32$ 1-8, 81-2 $3/32$
24. $7^{11}/8 - 8^{11}/32$ $25/32$	24. $4^{5}/32 - 4^{31}/16$ 75, 14 $1/32$
25. $7^{29}/32 - 8^{11}/32$ $7/16$	25. $4^{11}/4 - 4^{31}/16$ 56-7, 33-4 $3/16$
26. $8^{11}/16 - 9^{11}/8$ $1/16$	26. $4^{31}/8 - 4^{11}/16$ 19, 70 $5/16$
27. $8^{13}/16 - 9^{7}/32$ $1^{13}/32$	27. $4^{31}/8 - 4^{13}/16$ 18, 71 $7/16$
28. $10^{11}/16 - 10^{7}/4$ $3/16$	28. $4^{9}/16 - 4^{15}/16$ 6, 83 $3/8$
28. $8^{29}/32 - 10^{7}/4$ $1^{29}/32$	29. $4^{23}/32 - 5^{11}/16$ 76-80, 9-12, 10 $11/32$
	30. $5^{5}/16 - 6^{31}/32$ 40-1, 47-9 $25/32$
	31. $5^{29}/32 - 6^{7}/32$ 36, 53 $5/16$

Fig. 4-6. Tudor, realization of *Four Systems*, p. 2

The image shows a musical score for a piece titled "Four Systems" by Tudor, page 2. The score is presented in four systems, each consisting of a treble and bass staff. The notation includes notes, rests, and dynamic markings. At the bottom of the page, there is a sequence of letters: A1 A2 D1 D2 C1 D2 B1 C2.

Brown's score, where each system has been read from left to right, then inverted and read from left to right again. Tudor identified and entered the segments in the order A↑, B↑, C↑, B↓, D↑, A↓, C↓, and D↓, numbering them 1-8 (the letters are cues to the four systems in Brown's score, the arrows cues to the directions from which the systems were read). At the bottom of fol. 2 (Fig. 4-6), Tudor listed the eight segments in the order in which he plays them on his recording; below each letter and arrow is a cue to each segment:

A↑	A↓	D↑	B↓	C↑	D↓	B↑	C↓
1	6	5	4	3	8	2	7

By placing the three folios -- each of which is notated *r* only and numbered sequentially -- alongside one another on the music rack of the piano, Tudor could read his score by using the numbering at the bottom of fol. 2 as a reference guide to the ordering of the eight segments.

The measurements of the sonorities notated in Tudor's realization correspond almost entirely to those in Brown's score, both in terms of distance from the left margin of the cardboard and the length of the individual notational figures. Beginning at sonority 8 (7 in Tudor's original calculations, where sonorities 5 and 6 were numbered 5a and 5b because of their close vertical alignment), however, the distances from the left margin of the Tudor's realization no longer correspond precisely to those in Brown's score, although they remain fairly close. With the exceptions of

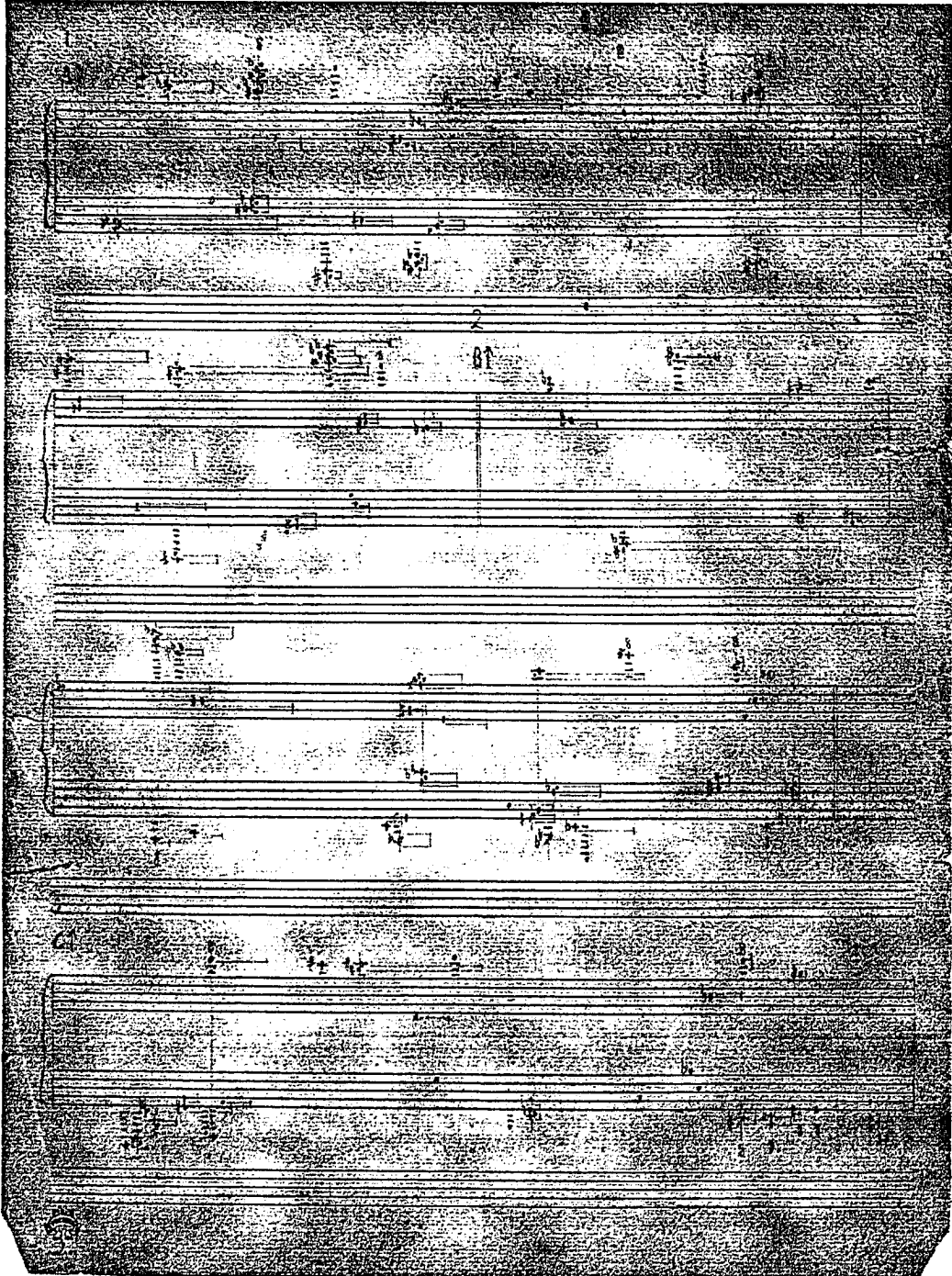
sonorities 9, 13, and 14 (Tudor's original 8, 12, and 13), the length of each notation, however, continues to correspond exactly. These exceptions may be errors in transcription, since they are all notated as points, though their measured lengths call for brackets. Probably, Tudor forgot to correct and complete them.

Both sets of Tudor's measurements of system B† -- that of distance from the beginning of the system and that of length of its notation -- seem to be more precise (Fig. 4-7). In the column headed B†, for example, Tudor has corrected the cessation of sonority 12 (originally 11) from $5-13/32$ inches to $5-13/16$ inches. Another example is the ninth entry in the same column, which shows that sonority 9 in system B† of Brown's score measures from $4-1/8$ to $5-19/32$ inches. But because the eight segments of Tudor's notation are entered consecutively in his realization, the beginning of segment B† is only $4-1/16$ inches long -- too short by $1/16$ inch to contain an accurate proportional representation of the sonority at its proper attack point. Therefore, Tudor enters the entire notation of sonority 9, an Eb5, $1/16$ inch from the beginning of the following brace (the conclusion of segment B†), thereby maintaining direct correspondence between the notational dimensions in Brown's score and his own (Fig. 4-8, reduced from original 31.5 x 23.8 cm.).

Fig. 4-7. Tudor, work sheet for measurement of notation in Brown, Four Systems, systems B† and C‡

	B †		C ‡	
1	$\frac{3}{4} - \frac{13}{16}$	59-62 <u>1</u>	27-30 <u>8</u>	$\frac{1}{16}$
2	$\frac{29}{32} - 1\frac{7}{32}$	48	41	$\frac{5}{16}$
3	$1\frac{15}{32} - 3\frac{9}{32}$	12-4 <u>3</u>	75-7 <u>6</u>	$2\frac{11}{8}$
4	$2 - 2\frac{13}{32}$	77	12 (11)	$\frac{13}{32}$
5	$3\frac{3}{32} - 3\frac{5}{32}$	42	47 (48)	$\frac{1}{16}$
6	$3\frac{7}{32} - 3\frac{3}{8}$	<u>60</u> -1	<u>29</u> -30	$\frac{5}{32}$
7	$3\frac{11}{16} - 3\frac{13}{16}$	25-9 <u>7</u>	60-4 <u>2</u>	$\frac{1}{8}$
8	$3\frac{7}{8} - 4$	64	25	$\frac{1}{8}$
9	$4\frac{1}{8} - 5\frac{19}{32}$	55	34	$1\frac{15}{32}$
10	$4\frac{3}{32} - 5\frac{1}{8}$	1	88	$\frac{5}{32}$
11	$5\frac{1}{16} - 5\frac{13}{32}$	80-2 <u>1</u>	7-9 <u>8</u>	$\frac{11}{32}$ $3\frac{1}{4}$
12	$5\frac{9}{32} - 5\frac{1}{2}$	62-3 <u>3</u>	26-7 <u>7</u>	$\frac{7}{32}$
13	$5\frac{11}{32} - 5\frac{21}{32}$	16	74	$\frac{5}{16}$
14	$5\frac{17}{32} - 6\frac{13}{32}$	50	39	$\frac{7}{8}$
15	$7\frac{5}{16} - 7\frac{1}{2}$	20	70	$\frac{3}{16}$
16	$7\frac{7}{16} - 7\frac{3}{4}$	<u>13</u> -4	75-6 <u>6</u>	$\frac{5}{16}$
17	$7\frac{1}{2} - 7\frac{9}{16}$	24	65	$\frac{1}{16}$
18	$7\frac{19}{32} - 7\frac{23}{32}$	48	41	$\frac{1}{8}$
19	$7\frac{20}{32} - 8$	37-9 <u>8</u>	50-2 <u>1</u>	$\frac{11}{32}$
20	$7\frac{21}{32} - 8\frac{1}{16}$	59-61 <u>60</u>	28-30 <u>9</u>	$\frac{13}{32}$
21	$7\frac{27}{32} - 8\frac{5}{16}$	43	47	$\frac{15}{32}$

Fig. 4-8. Tudor, realization of *Four Systems*, p. 1. Tudor's manuscript, 31.5 x 23.8 cm., has been reduced by 38% in this example.



Four Systems, Second Realization

Genesis

Tudor continued to perform his realization of *Four Systems* for several years following its preparation. In 1956, Cunningham used the work with his dance "Galaxy," first performed on Friday 18 May at the University of Notre Dame. Around the time of the New York premiere of "Galaxy" on Saturday 12 January 1957 at the Brooklyn Academy of Music, Tudor prepared a second realization of *Four Systems*, to be performed simultaneously with the first. He and Cage gave the first performance of the new version, *Four Systems* for Two Pianos, on their joint recital of Thursday 7 February at Hobart and William Smith Colleges. In his program notes for the recital, Cage referred to the *primo* and *secondo* parts as "two translations of [Brown's] material made by David Tudor."

Four Systems for Two Pianos was written on 6 folios of large (i.e. 42.8 x 27.4 cm. or 16-13/16 x 10-13/16 in.) 8-staff music paper. The *primo* part, essentially identical to Tudor's first realization but with the performance order of the segments rearranged, is on fol. 1-4; the new realization, on fol. 5-6, is the *secº'* **3. What distinguishes this *secondo* part as a second realization (rather than merely another "version") is Tudor's reading of Brown's score from new directions; specifically, by turning the score on its side and only then reading it ↑, ↓, →, and ←,

as before. Tudor numbered the parts 1-4 and x-y, respectively, and there are several gatherings of this set. One is a photostat reproduction of Tudor's autograph, which is presumably lost. In a second set, printed on large sheets of tracing paper, Tudor paginated the *primo* part 1-4 on the verso of each page, but the two pages of the *secondo* part are not numbered. There are also several unnumbered folios of additional photostat copies. Finally, there are numerous cuttings of various sizes also, it seems, made from additional photostat copies; these cuttings were probably used in performance as discrete, reordered segments.

I mention these gatherings because dynamic markings -- which were not notated at all in Tudor's first realization -- appear only on the first set, where they are entered in red ink (the remaining notation is in black ink). Notation of the dynamics is in the form of a scale from 1 = lowest to 10 = highest. This fact is important in tracing the genesis of Tudor's second realization of *Four Systems*. In turn, the genesis is itself significant, for it shows that Tudor's preparation of a realization was often a gradual process -- sometimes, as in the case of *Four Systems*, evolving over a period of several years.

Tudor did not derive his notation of dynamics from previous works by Brown, or from any of the American experimental composers. Rather, he modified a method used by the Swedish composer Bo Nilsson (b. 1937). In the first of

Nilsson's three early piano pieces, *Schlagfiguren*, Op. 8 (1956), dynamics are represented by a scale of integers and fractions: 1.0 (*pppp*), 1.5, 2.0 (*ppp*), 2.5, etc. to 10.5, where fractions indicate "levels of accentuation resulting in a relative increase in dynamics from the level 0.5."¹⁹

Tudor apparently first saw Nilsson's music in the spring of 1956, when Nilsson sent him a piano piece (probably *Schlagfiguren*, though he does not refer to it by title) along with a letter in which he wrote:

With the best compliments from myself and my colleague, Bengt Hambraeus (who has given me your address), I take the composition will interest you, and that you will have an opportunity of executing it at your visit to Sweden this summer (if possible in connexion with your execution of Hambraeus' "Cercles").²⁰

If Tudor's decision to prepare his own performance material for indeterminate scores originated with two works, *Four Systems* and Feldman's *Intersection 3* -- which he first performed on the same program -- Tudor was again motivated by circumstances of performance. He gave the American premiere of *Schlagfiguren* on 7 February 1957, on the same

¹⁹ ". . . Betonungsgraden und ergeben einen relativen Lautstärkezuwachs von einem Grad (0,5)." The explanation is from Nilsson's preface to the third work in this group, *Quantitäten* (1958) (Universal Edition No. 12873 LW [1958]). I have not seen a published edition of *Schlagfiguren*, and the score in the Tudor Collection is undated. But Tudor first performed the work on Sunday 25 November 1956, hence my attribution of the date. Nilsson dated *Bewegungen*, the middle work in the group, "1956" in one of Tudor's two copies.

²⁰ Nilsson, letter to Tudor, 29 May 1956, orthography as in original. David Tudor Collection.

program in which he and Cage first performed *Four Systems* for Two Pianos. On that occasion, however, neither the *primo* nor the *secondo* part contained dynamic markings.²¹

Tudor recalled, "I had gone to Circle Blueprint to get copies; I made the first copies [of the two-piano version] and then . . . put the dynamics in, because I hadn't worked them out." Still in business today, Circle Blueprint Company was a firm frequently used by New York composers in the 1950s, before the age of photocopying. Since the total number of copies of the two-piano version agrees with a receipt from Circle Blueprint, dated 10 May 1957, it is almost certain that all of the copies were made before Tudor entered, or perhaps even determined, the dynamics.²²

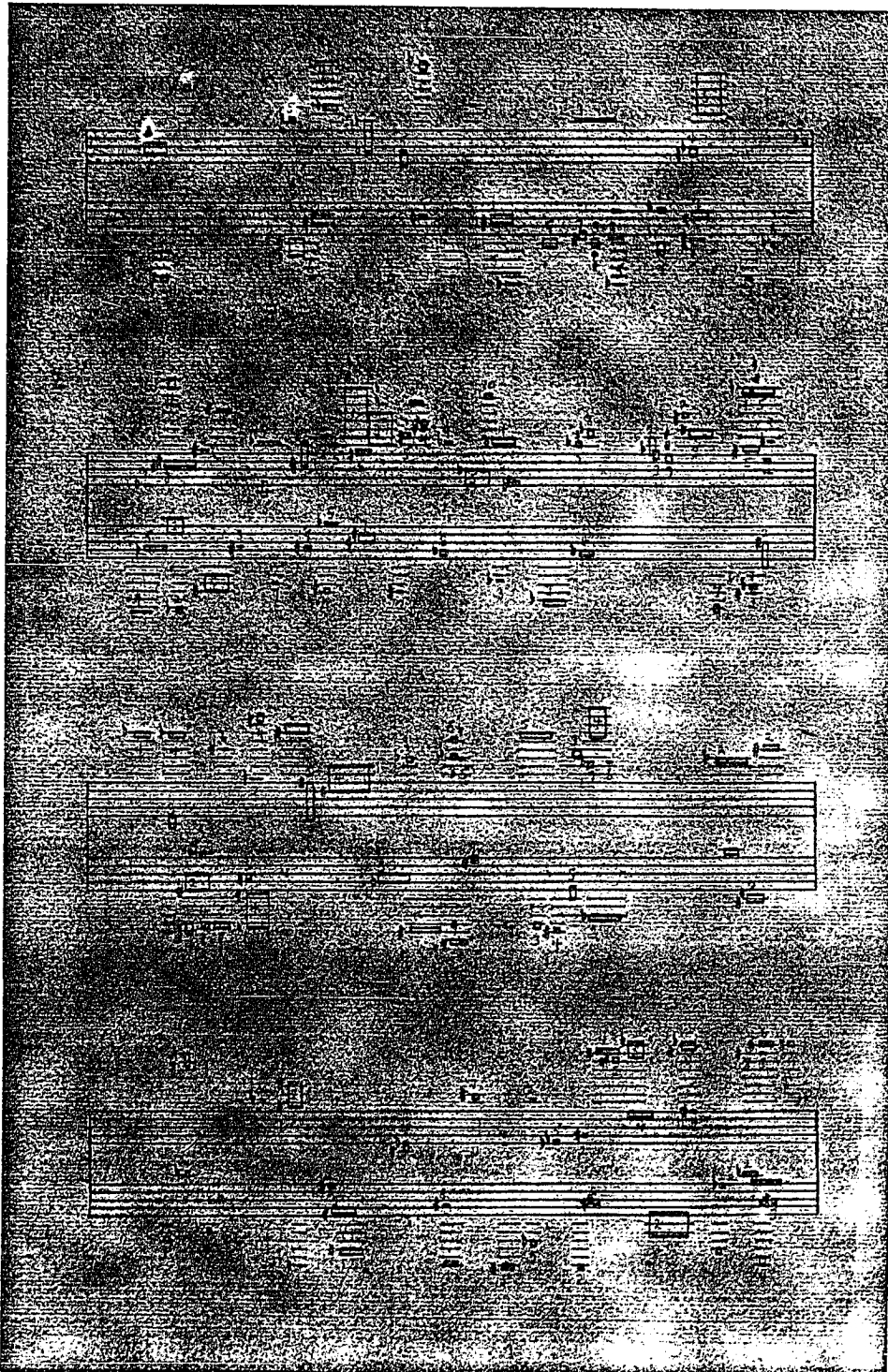
Notation

Both the manuscript appearance of *Four Systems* for Two Pianos (Fig. 4-9) and the fact that Tudor wrote out instructions for its performance strongly suggest that he intended

²¹ In the spring of 1957, Tudor played both *Schlagfiguren* and *Bewegungen* on his New York recital of Monday 22 April. Also on the program was the first performance of Stockhausen's *Klavierstück XI*, which Tudor played twice as per the composer's suggestion in the performance instructions. The premiere of *Klavierstücke XI* has sometimes been attributed to Paul Jacobs, who played it the following June in Darmstadt, substituting for Tudor, who had injured his back and canceled his 1957 trip to Europe.

²² There are 4 sets of 6 folios each; the receipt from Circle Blueprint Company is for 24 copies (for which Tudor was billed \$2.88 plus tax).

Ex. 4-9. Tudor, second realization of *Four Systems*, p. 1. The figure shows the first page of the *secondo* part, made from readings of Brown's score turned on its side.



the work to find publication.²³ With the exception of the dynamics, the notation is identical to Tudor's previous realization. The performance instructions read:

Each system 30"

Two sections of 30" + two sections of 1' + 1' of silence arranged between sections or not (the whole in any arrangement) = 4'

Dynamics = 1 softest, 10 loudest

Attacks free (including *fp*, etc.)

Boxes may be played as intervals or as clusters, ad lib.

Shortest duration may be considered as equivalent to • [point]²⁴

The principal difference in format between *Four Systems* for Two Pianos and Tudor's first realization of Brown's score is one of dimension. Earlier, Tudor had measured the score by inches in thirty-seconds and reproduced these measurements in his realization. For the new version, written on much larger paper, Tudor converted this scale to

²³ Which did not take place.

²⁴ Sometime earlier, Tudor had drafted a program note to his first realization of *Four Systems*:

the 'four systems' is [*sic*] made in the manner of a mobile, having 4 parts which are read arbitrarily (or according to a preconceived plan of the performer), vertically or horizontally, or in reverse, singly or in superimposition. There is implied a recognition of perspective as a property of space relating to sound objects as well as to visual objects.

The style of the last sentence suggests that it was originally written by Brown.

inches in tenths, beginning with a memo comparing the duration and length of one system in Brown's score with one in his own (Fig. 4-10).

Fig. 4-10. Tudor, memo for second realization of *Four Systems*: comparison of dimensions between Text 1 and Text 2.

orig. $11\frac{1}{4}" \approx 30$ Secs. $\frac{6}{16} = 1$ sec.
 paper $9" \approx 15$ Secs. $.6" = 1$ sec.
 [extend $\frac{3}{16}"$ L, $\frac{5}{16}"$ R]

At the upper right of the memo is the durational equivalent of 1 inch of space in either score, plus a table for converting Tudor's original measurements from inches in sixteenths to inches in tenths (the ratio of dimensions between the two realizations is therefore 5:8).²⁵

Tudor equated 11-1/4 inches, the length of one system in Brown's score, with 30 seconds; therefore 6/16 inch = 1 second. On the staff paper used for the new version, 9 inches = 15 seconds (also Tudor's decision), so .6 inch = 1

²⁵ The table converts inches in sixteenths, but Tudor measured Brown's score in inches thirty-seconds when greater precision was needed.

second. (On the larger paper, 9 inches is the length of each *staff*, so that two systems in the new realization represent one system in Brown's score.) Tudor converted the length of each system A-D in Brown's score to correspond to that of the larger-sized staff paper.

Tudor's conversion table (Fig. 4-11) worked as follows. The first column shows measurements from Brown's cardboard score, the second the conversion of these based on the size of Tudor's staff paper. The first figure 9.0 in col. 2 represents the end of the first 9-inch staff of a complete system in the realization, the second 9.0 likewise represents the end of the second staff. The figures in col. 3 are for reading the table in retrograde. Tudor's measurements for his first realization showed that, when reading Brown's score from the direction A↑, sonority 2 begins at 3/4 inch from the left side (not the left margin) of the cardboard and continues to 1/16 inch. In the conversion table, 3/4 converts to .6 and 1/6 to 1.1. These conversions reflect the length .5 inch of the notation of sonority 2 in the new version. Given that .6 inch = 1 second, and that each system = 9 inches = 15 seconds, it was then a short step to the accurate placement of the complete notation along this time line.

Tudor eventually prepared a comprehensive set of tables showing the complete parametric specifications of *Four Systems* for Two Pianos. These tables, one for each system

Fig. 4-11. Tudor, conversion table for second realization of Four Systems

$3/8 = 0$	$2^{1/16} = 3.5$	$4^{13/16} = 7.1$	$7^{1/8} = 1.8$	$9^{11/16} = 5.9$
$7/16 = .1$	$2^{5/8} = 3.6$	$4^{7/8} = 7.2$	$7^{3/16} = 1.9$	$9^{3/4} = 6$
$1/2 = .2$	$2^{9/16} = 3.7$	$4^{5/16} = 7.3$	$7^{1/4} = 2$	$9^{7/16} = 6.1$
$9/16 = .3$	$2^{3/4} = 3.8$	$5 = 7.4$	$7^{5/16} = 2.1$	$9^{1/8} = 6.2$
$5/8 = .4$	$2^{3/16} = 3.9$	$5^{1/16} = 7.5$	$7^{3/8} = 2.2$	$9^{5/16} = 6.3$
$11/16 = .5$	$2^{7/8} = 4.0$	$5^{1/8} = 7.6$	$7^{1/2} = 2.3$	$10 = 6.4$
$3/4 = .6$	$2^{5/16} = 4.1$	$5^{3/16} = 7.7$	$7^{1/2} = 2.4$	$10^{1/16} = 6.5$
$13/16 = .7$	$3 = 4.2$	$5^{1/4} = 7.8$	$7^{9/16} = 2.5$	$10^{3/16} = 6.6$
$7/8 = .8$	$3^{1/16} = 4.3$	$5^{5/16} = 7.9$	$7^{5/8} = 2.6$	$10^{5/16} = 6.7$
$15/16 = .9$	$3^{1/8} = 4.4$	$5^{3/8} = 8$	$7^{11/16} = 2.7$	$10^{7/16} = 6.8$
$1 = 1.0$	$3^{1/4} = 4.5$	$5^{7/16} = 8.1$	$7^{3/4} = 2.8$	$10^{9/16} = 6.9$
$1^{1/16} = 1.1$	$3^{3/16} = 4.6$	$5^{1/2} = 8.2$	$7^{7/8} = 2.9$	$10^{11/16} = 7$
$1^{1/8} = 1.2$	$3^{5/16} = 4.7$	$5^{9/16} = 8.3$	$7^{5/8} = 3$	$10^{13/16} = 7.1$
$1^{1/4} = 1.3$	$3^{3/8} = 4.8$	$5^{5/8} = 8.4$	$8 = 3.1$	$10^{15/16} = 7.2$
$1^{1/2} = 1.4$	$3^{7/16} = 4.9$	$5^{11/16} = 8.5$	$8^{1/16} = 3.2$	$10^{1/8} = 7.3$
$1^{5/16} = 1.5$	$3^{1/2} = 5$	$5^{3/4} = 8.6$	$8^{1/8} = 3.3$	$10^{3/8} = 7.4$
$1^{3/8} = 1.6$	$3^{9/16} = 5.1$	$5^{7/16} = 8.7$	$8^{1/4} = 3.4$	$10^{5/8} = 7.5$
$1^{7/16} = 1.7$	$3^{5/8} = 5.2$	$5^{9/16} = 8.8$	$8^{3/16} = 3.5$	$10^{7/8} = 7.6$
$1^{1/2} = 1.8$	$3^{11/16} = 5.3$	$5^{15/16} = 8.9$	$8^{1/2} = 3.6$	$10^{9/8} = 7.7$
$1^{7/8} = 1.9$	$3^{3/4} = 5.4$	$6 = 9.0$	$8^{3/8} = 3.7$	$10^{11/8} = 7.8$
$1^{5/8} = 2.0$	$3^{13/16} = 5.5$	$6^{1/16} = 9.1$	$8^{1/2} = 3.8$	$10^{13/8} = 7.9$
$1^{11/16} = 2.1$	$3^{7/8} = 5.6$	$6^{1/8} = 9.2$	$8^{5/8} = 3.9$	$11 = 8$
$1^{3/4} = 2.2$	$3^{15/16} = 5.7$	$6^{1/4} = 9.3$	$8^{7/8} = 4$	$11^{1/16} = 8.1$
$1^{13/16} = 2.3$	$4 = 5.8$	$6^{3/16} = 9.4$	$8^{9/8} = 4.1$	$11^{1/8} = 8.2$
$1^{7/8} = 2.4$	$4^{1/16} = 5.9$	$6^{1/4} = 9.5$	$8^{5/4} = 4.2$	$11^{3/16} = 8.3$
$1^{5/8} = 2.5$	$4^{1/8} = 6$	$6^{3/8} = 9.6$	$8^{3/2} = 4.3$	$11^{1/4} = 8.4$
$2 = 2.6$	$4^{3/16} = 6.1$	$6^{1/2} = 9.7$	$8^{7/4} = 4.4$	$11^{3/8} = 8.5$
$2^{1/16} = 2.7$	$4^{1/4} = 6.2$	$6^{5/16} = 9.8$	$8^{5/2} = 4.5$	$11^{1/2} = 8.6$
$2^{1/8} = 2.8$	$4^{3/8} = 6.3$	$6^{3/4} = 9.9$	$8^{3} = 4.6$	$11^{3/4} = 8.7$
$2^{3/16} = 2.9$	$4^{1/2} = 6.4$	$6^{7/16} = 10$	$8^{9/4} = 4.7$	$11^{1/2} = 8.8$
$2^{1/4} = 3.0$	$4^{5/16} = 6.5$	$6^{9/16} = 10.1$	$8^{11/4} = 4.8$	$11^{3/8} = 8.9$
$2^{5/16} = 3.1$	$4^{3/4} = 6.6$	$6^{5/8} = 10.2$	$8^{3} = 4.9$	$11^{1/2} = 9$
$2^{3/8} = 3.2$	$4^{7/16} = 6.7$	$6^{3/4} = 10.3$	$8^{5/2} = 5$	
$2^{7/16} = 3.3$	$4^{1/2} = 6.8$	$6^{11/16} = 10.4$	$8^{7/2} = 5.1$	
$2^{1/2} = 3.4$	$4^{5/8} = 6.9$	$6^{7/8} = 10.5$	$8^{9/2} = 5.2$	
	$4^{3/4} = 7.0$	$7 = 10.6$	$8^{11/2} = 5.3$	
		$7^{1/16} = 1.7$	$8^{13/2} = 5.4$	
			$8^{15/2} = 5.5$	
			$8^{17/2} = 5.6$	
			$8^{19/2} = 5.7$	
			$8^{21/2} = 5.8$	

A-D, contain the readings of the notation in Brown's score, measured and converted to yield parametric determinants, which Tudor then translated into his own notation.

Again, arrows indicate directional readings. In addition, Tudor uses the abbreviations *d* for duration, *f* for frequency, and *a* for amplitude (dynamic level).²⁶ In the table showing all of Tudor's readings of system A (Fig. 4-12), numbers in the first column from the left show the 38 sonorities notated in the system when system A is read ↓; numbers in the second column refer to the same notation when read ↑, that is, to a second set of 38 sonorities (the columns are continued on the verso of the fol.).

In the column headed *d*↑, the measurement of sonority 1 is from 0.35 inch to 2.85 inches on the decimal scale. When reading Brown's score from A↑, the notation of sonority 1 begins at 19/32 inch from the left edge of the cardboard and continues to 2-5/32 inches, a length of 1-9/16 inches. These measurements are not found in Tudor's conversion table (Fig. 4-10, above). But 1-9/16 inches would correspond to a position beginning midway between the row reading 9/16 ($18/32$) = .3 and the row reading 5/8 ($20/32$) = .4, that is, .35 on the decimal scale, and terminating midway between the row reading 2-1/8 ($4/32$) = 2.8 and that reading 2-3/16

²⁶ "Frequency" and "amplitude" were for a long time Cage's preferred terms for pitch and dynamic level, since they reflected his interest in the acoustical as well as musical aspects of sound.

$(6/32) = 2.9$; in other words, at 2.85 on the decimal scale. In Tudor's realization, sonority 1 is placed at .35 inch from the beginning of the first staff, continuing to 2.85 inches into the staff.

A + in the column $d\uparrow$ identifies sonorities notated on the second staff of a complete system in Tudor's realization. For example, sonority 19, the last sonority notated on the first staff of the realization, begins at 6.4 inches and continues to 0.6 inch on the second staff, sonority 20 begins at .25 inch on the second staff and continues to 1.3 inches into the staff, and so forth.

The pitch content of sonority 1, which Tudor had determined in his original realization as A3-Bb3-B3, is entered in the column headed $f\uparrow$. The underlined Bb3 means that this pitch may be included with the other two to form a cluster. The other option is to omit the underlined pitch and play the outer keys as a harmonic interval. This is in fact what Tudor did, *mutatis mutandis*, in his reading of system A: col. $f\downarrow$ shows the sonority, now sonority 33 as a result of inversion, to be the dyad Bb6-B6 (written $b^b_2-b_2$).²⁷

Dynamics

I have not been able to reconstruct Tudor's method of determining the dynamic markings for his later realization

²⁷ In his original realization of *Four Systems*, Tudor had notated this dyad as A#6-B6.

of *Four Systems*. Nor does Tudor himself recall how he did this. The three columns a^2 , a , and a^1 in the comprehensive tables seem to refer to amplitudes on the scale 1-10, but the entries in the columns do not agree in any way with those in the realization itself (Fig. 4-9, above). Nor is it clear why there are but three columns, since the determinations of the other parameters are, after all, based on readings of four systems. It is possible that Tudor entered the dynamic markings in his realization prior to preparing his tables. This would account for the discrepancy, but it is no more than speculation. All I can say with certainty is that amplitude was the last parameter to be determined in Tudor's later realization of *Four Systems*.

Tudor's Realization of *Twenty-five Pages*

Sometime during the first half of 1957, Tudor prepared a realization of Brown's earlier *Twenty-five Pages*.²⁸ This means that, as in the case of his realization of Feldman's *Intersection 2*, Tudor's decision to "transcribe" *Twenty-five Pages* came both after he had performed the work from Brown's

²⁸ Tudor recalled, "While I was doing the second version [of *Four Systems*], I decided to adapt Earle's notation for *Twenty-five Pages*. It made sense in making a transcription." This was also around the time of the concert of 30 April 1957, when Tudor took part in the first performance of Brown's own version of *Twenty-five Pages* for four pianos. The appearance of Tudor's manuscript realization of *Twenty-five Pages* suggests that, like *Four Systems* for Two Pianos, it was planned for publication.

score and after he had prepared two realizations of a later work, *Four Systems*.

Brown supplemented the publication of *Twenty-five Pages* with lengthy instructions and comments which, because they offer a basis for approaching Tudor's performances of the work, require quoting here:

The 25 Pages may be played in any sequence; each page may be performed either side up; events happening within each 2 line system may be read as either treble or bass clef; the total time duration of the piece is between 8 min. 20 sec. and 25 min., based on 5 sec. and 15 sec. per. 2 line system as probable but not compulsory time extremities. Time structures in terms of seconds per. 2 line system may be pre-set by the performer, arrived at spontaneously during the performance or obtained from the composer. The indicated note durations are precise relative to each other and to the eventual time value assigned to each line system. The piece may be played by any number of pianos up to 25.

Two of the slightly disquieting characteristics of the work are the "impossible" hand spreads and the fact that some pages will have notes indicated that are below the range of the piano. Structures that are too wide for the hands may be broken, arpeggio fashion, as rapid as possible from top to bottom, bottom to top, from the center outward or from the outward extremes to the center. The notes which are off the bottom of the keyboard may be considered, as in fact, unplayable and omitted if that particular event is played as being in the bass clef. Another arrangement of the pages may find these notes again within the keyboard range.

It will be seen that the basic fluid elements of the piece; page sequence and inversion, clef disposition and time, admit of a considerable number of different presentations of this material. All of these possibilities are valid within the total concept of the work provided that once a selection from the range of possibilities has been made it be executed with accuracy in regards to the durations, attack and intensities. The variable factors are to be dealt with to any degree of

simplicity or complexity interesting to the performer.²⁹

Tudor's realization was written on 25 folios of ivory 12-staff Presser music paper, torn in half from original bifolios to form single leaves of various sizes. Each page is numbered from 1 through 25 in the upper center; annotations are in pencil.

The single work note for the realization shows the sequence and order of Tudor's performance of the 25 pages of Brown's score. Tudor read each page of the score twice, first from one direction (↑), then by inversion (↓). He then transcribed the readings for each page on the recto and verso, respectively, of a corresponding folio in his realization.³⁰

Although Tudor performed all 25 pages of Brown's score, he repeated several of them by reading pages 6, 8, 14, and 16 in inversion.³¹ His second readings of these pages were by inversion. For example, 6↑ refers to page 6 of the score

²⁹ I have reproduced the punctuation and orthography in Brown's typescript of his notes, which is in the David Tudor Collection. Brown made slight changes in the text for the published version (Universal Edition 15587 [1975]).

³⁰ The performance order of pages from Text 1 is: 1, 3, 5, 2, 4, 6↑, 6↓, 7, 8↑, 12, 11, 15, 14↑, 14↓, 8↓, 13, 10, 22, 9, 16↓, 16↑, 17, 18, 19, 20, 21, 23, 24, 25.

Several of the pages in Tudor's copy of Brown's score bear consecutive numbers reflecting additional readings in inversion; e.g., fol. 7r is numbered 6, under which is drawn an ↓ pointing to the number 7 below it. As a result, the pagination in Tudor's copy is from 1 through 29.

³¹ See note 30, above.

read from one direction (what constitutes an "original" direction is, of course, secondary), and 6↓ refers to the same page read in inversion. Inversion is specifically permitted in Brown's performance instructions, but *adding*, rather than *substituting* it for a reading from the opposite direction, is an extension Tudor made in his realization. I count it as an extension rather a deviation, since the direction from which the pages may be read is one of the "variable factors" Brown allows to be addressed "to any degree of simplicity or complexity interesting to the performer."

In terms of the spatial proportions in Brown's notation, Tudor's transcription is diplomatic. But his pitch notation is in solid, unstemmed noteheads -- rather than in Brown's horizontal lines -- with open brackets and lines denoting proportional durations.³² In other words, the notational technique is the same as in Tudor's realizations of *Four Systems*.

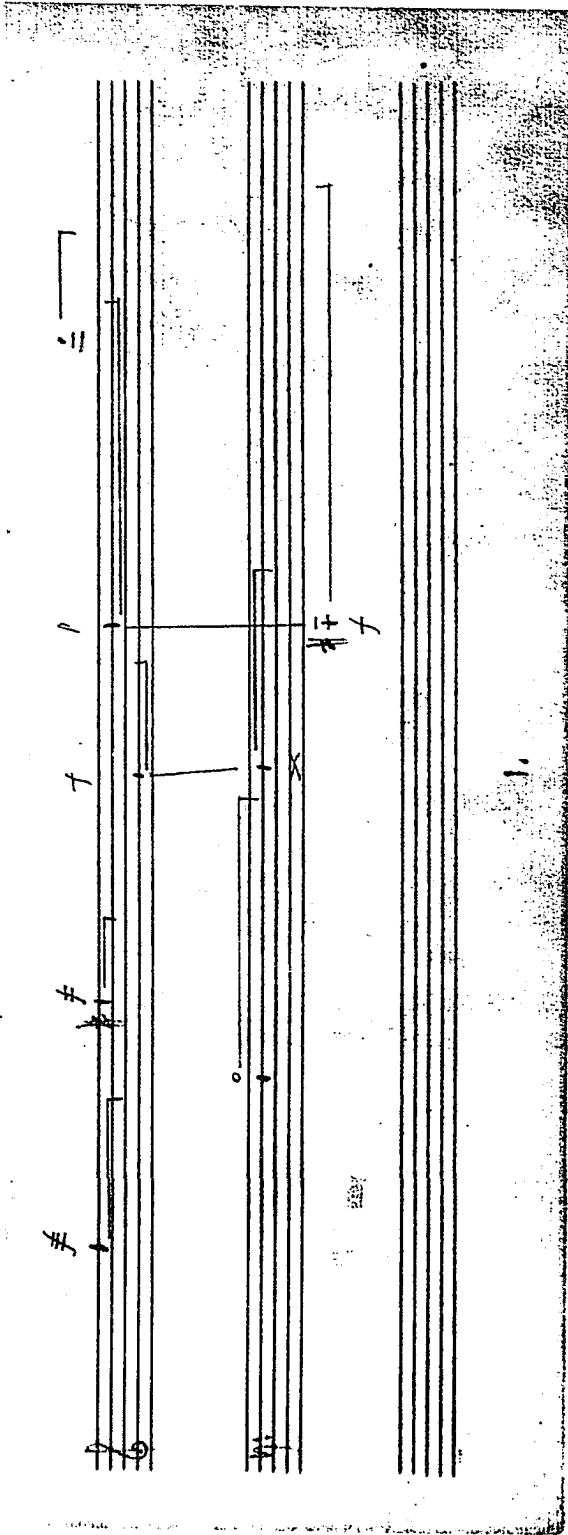
Tudor interprets some of Brown's articulation signs as pizzicati or harmonics, perhaps as both (the realization does not make this clear). For example, Brown's accent over a staccato is rewritten as a O in Text 2 (Fig. 4-13). An accent over a tenuto marking becomes a somewhat elongated x (Fig. 4-14). And a simple staccato is written as a small x,

³² Some exceptions to this are noted below.

Fig. 4-13. Tudor, realization of *Twenty-five Pages*,
fol. 1r

The image displays a musical score for the piece "Twenty-five Pages" by Tudor, folio 1r. The score is arranged in three systems, each consisting of two staves (treble and bass clefs) and two empty staves below. The notation includes various musical symbols such as notes, rests, and dynamic markings. The first system begins with a treble clef and a key signature of one sharp (F#). The second system features a treble clef and a key signature of one flat (Bb). The third system starts with a treble clef and a key signature of one flat (Bb). The score is marked with dynamics including *f* (forte), *p* (piano), and *fz* (forzando). There are also markings for *R* (ritardando) and *A* (accelerando). The notation includes various note values, rests, and articulation marks such as slurs and accents. The score is presented in a high-contrast, black-and-white format, typical of a photocopy or a high-contrast scan of a printed score.

Fig. 4-14. Tudor, realization of Twenty-five Pages, fol. 1v, system 3



as in the first system of the same folio (Fig. 4-13, above), though this use of the small and elongated *x* does not seem to be consistent. For example, in the first system of fol. 1r, a small *x* denotes what in Brown's score is an accent over a tenuto.

By replacing the graphic horizontal-line notation of Brown's score with simple solid noteheads, Tudor made a considerably clearer text for purposes of reading in performance. He also replaced much of Brown's functional script with his own abbreviations and signs. Where Brown wrote *ff*, *fff*, or *ffff*, Tudor compacted these signs by writing a single *f* for *forte*, with 2, 3, or 4 dashes added to signify the higher dynamic levels (Fig. 4-15).³³ Brown's functional script, in which the letter *p* (for *piano*) is drawn as a vertical line through a circle, enables the composer to indicate this dynamic marking so that its identity would also remain constant under inverted page readings. Tudor, who of course read each page from but one direction at a time in performance, also abbreviated Brown's *pp*, *ppp*, and *pppp*, with the signs *P2* (i. e. *p x 2*), *P3*, and *P4*.

Neither the work note nor Tudor's realization itself contains any information regarding the overall duration, whether of each page or of the entire realization. Brown's

³³ This modification of the standard notation of dynamics, rather than the scale 1-10, is evidence that the realization of *Twenty-five Pages* was prepared before that of *Four Systems for Two Pianos*.

Fig. 4-15. Tudor, realization of *Twenty-five Pages*, fol. 1v, showing compacted abbreviations for dynamic markings *f-ffff*.

The image displays a musical score for a realization of 'Twenty-five Pages' by Tudor, folio 1v. The score is presented on a system of five staves. The top two staves are in treble clef, and the bottom three staves are in bass clef. The music is written in a historical style, featuring various dynamic markings such as *f*, *ff*, and *ffff*, which are compacted abbreviations for dynamic levels. The score includes several measures of music, with some measures containing complex rhythmic patterns and accidentals. The notation is dense and includes various symbols and markings, such as 'x' and 'y', which likely represent specific performance instructions or dynamic changes. The overall appearance is that of a historical manuscript or a facsimile of one.

performance instructions offer three solutions: "Time structures in terms of seconds per 2-line system may be pre-set by the performer, arrived at spontaneously during the performance or obtained from the composer." The third of these possibilities is inconsistent with Tudor's methods of preparing a performance as I have described them in the previous chapter.³⁴ And I have also found that, in fact, Tudor often "pre-set" the duration of a work (by entering timings, usually at the end of each system) in order, for example, to coordinate his performances with Cage or for one of Cunningham's dances. I assume, therefore, that Tudor did not enter timings in his realization because the duration was to be determinate but flexible; that is, its duration could vary to meet the needs of a particular program or concert. That being the case, Tudor then followed his standard practice, using a stopwatch as a chronometer to monitor his performance of the proportional notation of Brown's music.

Conclusions

From the beginning of his career as a composer and conductor, Brown has been interested in introducing and extending the practice of improvisation in concert music. In this he stood in contrast to Cage, who abjured improvisa-

³⁴ See under "Excursus: The Composer-Performer Relationship" in Chapter 3, pp. 56-59, above.

tion until the mid-1970s when, characteristically, he sought to accept improvisation by incorporating it in such a way that the performer was unable to rely on musical habit. Tudor, too, seems never to have been very interested in improvisation, or at least seems to have found it to be of limited use as a solution to the problems posed by experimental music. Brown invited participation through improvisation, and although Tudor evidently first performed *Four Systems* with some degree of improvisation, he found this approach insufficiently interesting.

To some extent, Tudor's realization freezes *Four Systems* by removing most of its improvisatory aspects. It places restrictions on the parameters of duration, dynamics, and, to a considerable extent, pitch, although according to Tudor's performance instructions "boxes may be played as intervals or as clusters, ad lib.;" these restrictions are common in Brown's other, more fully notated open-form works, so that I count them as alterations, rather than deviations, in Tudor's realization. Furthermore, while the durations of the parts and of the whole of Tudor's realization are fixed, the performance order of the systems in the later version for two pianos is indeterminate, another characteristic of Brown's open-form scores.³⁵

³⁵ Performance order may be indeterminate in Tudor's first realization as well: that Tudor wrote out one ordering of his eight notational segments does not mean that he followed it in every performance.

Brown, of course, did not view Tudor's interpretation as in any way deviant. *Four Systems*, he said, was "intended to be performed spontaneously, but I didn't prohibit a writing-out of it." When he saw what Tudor had written out, Brown was astonished:

He did what I would do, or might do, as a final step in the realization of this. But -- astonishing. It surprised the hell out of me when I saw that he had made a fixed [piece]. And that was one of the things that was awe-inspiring: how meticulous he was.

Chapter 5

The Notation of Contingency: Christian Wolff, *Duo for Pianists I* and *For Pianist*

And one could infer that the identity of the maker of a score becomes indifferent in the making of the performance.

Christian Wolff

Introduction

Christian Wolff's association with Cage began as the more traditional relationship of teacher and pupil. Eight years younger than Feldman, Brown, and Tudor, and twenty-two years younger than Cage himself, Wolff was referred, at the age of sixteen, to Cage for composition lessons by his piano teacher Grete Sultan.¹ From the beginning, Cage was delighted with his new pupil and his interests, telling Boulez in the spring of 1950

J'ai un élève merveilleux. Il a 16 ans et son compositeur favori est Webern. Il est plein de sensibilité et d'intelligence. En plus, il était né en France. Il s'appelle Christian Wolff.²

¹ Sultan was a neighbor of the Wolff family, which had emigrated from Europe in 1941. Wolff's parents, the publishers Kurt and Helen Wolff, were part of an intellectual circle of emigrés living in the Washington Square area of New York. Founders of Pantheon Books, the elder Wolffs later became affiliated with the publishing house of Alfred A. Knopf.

² Cage, letter to Boulez, before April 1950. *Correspondance*, 94.

I have a marvelous student. He is sixteen years old and his favorite composer is Webern. He is full of sensitivity and intelligence. What's more, he was born in France. His name is Christian Wolff.

Wolff's course of study was to be species counterpoint, just as Cage had studied this with his teacher Schoenberg.³ But this lasted a very short time -- perhaps only a few weeks, Wolff recalled -- when both teacher and pupil turned to another project, a joint analysis of Webern's Symphony, Op. 21, which Cage had heard performed the previous January (their source material was a score Cage copied by hand from the published edition in the New York Public Library).⁴ This, in turn, was followed by Wolff's first compositions based on predetermined rhythmic structures and pitch gamuts of as few as four pitches (as in the *Trio* of 1951 for flute, trumpet, and cello).⁵ The notation of these and all of Wolff's works before 1957 is the most conventional to be found in the scores of Cage and the composers closest to him at the time. Even Wolff's first pieces written expressly for Tudor, such as *For Prepared Piano* (1951) and *For Piano I* and *II* (1952, 1953), though far from easy to play, are

³ Cage's copies of the counterpoint exercises Schoenberg used in his classes are in the David Tudor Collection. The exercises were published, in somewhat revised form, in *Preliminary Exercises in Counterpoint* (New York: W. W. Norton and Co., 1947).

⁴ See Chapter 2, note 9, above.

⁵ Not surprisingly, both the analysis of the Webern Symphony and Wolff's early techniques derived from Cage's own compositional concerns prior to his venture into chance operations at the end of 1950.

straightforward in presenting their notational information.⁶

In fact, it seems to have been circumstance, rather than a desire to devise a new notational technique in 1957. Needing a new work on short notice, Wolff

. . . drew up a kind of "shorthand" notation which laid out certain spaces of time and groups of notes from which the players could select, with a wide range of instructions which would bring about situations "from nearly fixed to nearly free".⁷

The new work, *Sonata for Three Pianos*, was first performed on 30 April 1957 at Carl Fischer Concert Hall in New York.⁸

Duo for Pianists I (1957)

Wolff's next ensemble work was also composed in 1957. Tudor and Cage first performed *Duo for Pianists I* on Sunday 15 December of that year, in a concert at Harvard, where

⁶ In some of Tudor's programs, *For Prepared Piano* appeared as *Four Pieces for Prepared Piano*, and in a memo to Tudor added to the autograph score, Wolff simply calls it *Four Pieces for Piano*. In his early works, Wolff carried the penchant for functional titles to the point of confusion: there is also a *Suite for Prepared Piano* (1954) and *For Piano with Preparations* (1957)), and today, Wolff himself sometimes has difficulty sorting out these pieces.

⁷ Michael Nyman, *Experimental Music* (New York: Schirmer Books, 1974), 56.

⁸ This was the same concert in which Brown's version of *Four Systems* for four pianos was performed by Tudor, Cage, Masselos, and Sultan (see Chapter 4, p. 93, above). The program does not identify which of the five participating pianists (Feldman was the fifth) played Wolff's *Sonata*, but Tudor's realization is of the *secondo* part.

Nyman claims (*Experimental Music*, *ibid.*) that Wolff first used his shorthand notation in a piece he wrote for himself and Frederic Rzewski in 1956, but I have found no work by Wolff dating from that year which fits Nyman's description.

Wolff was a graduate student (not in music but in classics).⁹ This work, too, seems to have been composed only a short time before its premiere; the published score (Peters 6492 [1962]) is dated "Dec. 1957" and Tudor, who wrote out his own copies of both the *primo* and *secondo* parts, dated the latter "12/8/57." Furthermore, in a memo on the draft of the performance instructions, Wolff wrote:

David or John - if the piece is too awkward to do, could you call collect (please) UNIVERSITY 4-6773 by Wednesday night or Thursday morning (up to 9:45) and let me know as we can print the program accordingly.

In this chronology, "Wednesday" and "Thursday" would refer to 11 and 12 December, meaning that Tudor and Cage received their parts in the week between the work's completion and its premiere.

Tudor performed the *secondo* part of *Duo I*. This is clear both from the materials in his collection, in which the only sources for the *primo* part are his handwritten copy and a list of timings for it (he also prepared a similar list for the *secondo*) and from Cage's own performance material. The reason for this division of the parts is also clear: another of Wolff's memos on the performance instructions reads "part II is probably somewhat harder."

⁹ Wolff, who received his Ph. D. from Harvard in 1963, taught there from 1962 until 1970, when he accepted his present joint position on the faculties of music and classics at Dartmouth College.

Notation

In its published form, each of the two parts of *Duo I* comprises two pages; there is also a full page of performance instructions. The first page of the *secondo* part is shown in Fig. 5-1.¹⁰ The part is written in systems which display several types of notation. Seven pitch sets, referred to in the performance instructions as "pitch sources," are identified by the letters *a-d, h, and j*.¹¹ Below these source sets are discrete brackets of different lengths, which Wolff refers to elsewhere as "structural units."¹² The structural units are subdivided into segments, also of different lengths; within each segment are further subdivisions containing additional information in a shorthand consisting of integers, fractions, letters, and other figures.

¹⁰ There are a number of discrepancies between Peters 6492 and Tudor's own copy of the *secondo* from which he made his realization. I shall discuss one of these below.

¹¹ Not "a, b, c, e, h, j," as Wolff claims in the published version of his performance instructions. In any case, I have been unable to detect the reason for this curious labelling, a practice, as we shall see, Wolff repeated in *For Pianist*.

¹² "On Form," *Die Reihe* 7 ("Form - Space") (Bryn Mawr: Theodore Presser Company, 1965, originally published, in German, Vienna: Universal Edition, 1960), 26-31; the quotation is from p. 29. The context of Wolff's discussion is his *Duo II for Pianists* (1958), but the notation of structural units in brackets is the same in both *Duos*.

Fig. 5-1. Wolff, Duo I for Pianists, p. 1

The image shows the first page of a musical score for "Duo I for Pianists" by Franz Joseph Haydn. The score is written for two pianists and includes various musical notations, time signatures, and performance markings. The score is divided into several measures, with time signatures changing from 3/4 to 2/4 and back to 3/4. The score includes dynamic markings such as *pp*, *mf*, *f*, and *ppp*. There are also performance markings such as *rit.* and *tr.*. The score is written in a single system for each pianist, with the two parts often playing in parallel motion. The score is titled "2D PIANIST" at the top. The copyright notice at the bottom reads "Copyright © 1962 by C.F. Peters Corp., New York, N.Y."

The notation in these smaller subdivisions is of two kinds.¹³ Numbers to the left of the colon denote time-units in seconds and fractions thereof. Cumulative time is shown periodically below the structural units. Figures to the right of the colon convey information about actions to be performed at or within the prescribed time-units. Integers indicate the number of pitches to be played; letters refer to the source sets from which these pitches are to be selected. When there is no reference to a source set, any pitch(es) may be played. An x following an integer signifies any key on the piano, to be played in any way. When an x is not preceded by an integer, it signifies freedom of action, including the freedom not to act.¹⁴

In addition to the numbers denoting time-units, the lengths of the structural units themselves are proportional to the amount of time they represent, but only in a very general sense. For example, in the first unit, smaller increments of time such as 1/4 and 1/2 second are laid out in small spaces of fairly equal size, rather like measures, whereas the larger increment of 5 seconds is represented by a considerably larger space. These proportions, however,

¹³ The following description of the notation in *Duo I* is a synopsis of Wolff's performance instructions.

¹⁴ According to Wolff's instructions, "anything at all (including nothing) can be done" upon reading an isolated x. See, for example, the notation 1/16:x in the final system in Fig. 5-1, above.

are not sufficiently consistent to serve as precise prescriptions in performance; at most, they are general guides.

Two types of notation affect the pitch content of the source sets. Each type consists of three modifications of the figure x . Figures of the first type transform the sets from pitch to pitch-class. x_7 above a letter means that the relevant pitch or pitches from the designated source set are to be played in any octave higher than that shown in the set. Conversely, x^1 below a letter means any lower octave, and the figure

$$x_7$$

$$x^1$$

above and below a letter means any higher or lower octave.

The second type of figures affect pitch identity: $x_{\frac{1}{2}7}$ above a letter indicates any higher octave plus or minus 1 semitone, $x_{\frac{1}{2}}^1$ likewise in any lower octave, and

$$x_{\frac{1}{2}7}$$

likewise in any higher or lower octave. This second type of notation, however, is found only in Tudor's handwritten copies of the parts for *Duo I*; for the published version, Wolff replaced this notation with simpler figures, for example, the $1d$ in system 2 on the first page (see Fig. 5-1, above), which in Tudor's copy reads

$$\frac{1}{2}7$$

$$1a$$

(Wolff, of course, also deleted the explanation of this notation from his performance instructions.) This means that Tudor copied *Duo I*, and that he and Cage prepared their realizations of it, from a different exemplar.

In segment 1 of Wolff's score (see Fig. 5-1, above), the fraction $1/4$ signifies that the first action is to commence within .25 second of the beginning of the performance. The integers 1 and 2 indicate that the pitch content of the action is based on a total of three pitches from source set *a*, which is notated above the segment. $2a$ means that two of the pitches are to be played as they are notated in the set. The figure

$$\begin{array}{c} x^{\uparrow} \\ 1a \\ x^{\downarrow} \end{array}$$

means that 1 pitch from set *a* is to be played in any octave higher or lower than shown in the source set.

The letters *y* and *z* denote two piano preparations, the materials for which are to be selected by the performers. Each performer should select different materials, though these may overlap. The preparations may be made at any point on any piano string except those corresponding to the pitch content in the source sets (the latter pitches, then, remain unaltered by preparations). The location of the preparations may be altered during the course of a performance.

Some dynamic markings appear in Wolff's score. Where they do not (as in segment 1 at the very beginning of the work), they are to be determined by the performers. Multiple dynamic markings (e.g. the *f* and *ppp* in segment 2) may be interpreted either selectively or in combination; that is, "they need not all be used" and "more than one could be played on one tone."

The remaining instructions concern five means of playing directly on the piano strings.

♦ = muting with the finger, at any point along the relevant string(s), with sufficient pressure to produce an audible harmonic when the corresponding key is played.

n = muting with the finger and fingernail, between or next to the relevant string, to produce a buzz-like sound when the corresponding key is played.

touch = fingertip pressure on a string whose damper is up, then releasing, either suddenly or by sliding the fingertip up and off the string, to produce a *laissez-vibrer* effect.¹⁵

snap = snapping with the fingernail at a string whose damper is up.

pizz = pizzicato with the finger or fingernail; the damper may be up or down.

Problems of Performance

Wolff seems to have intended Tudor and Cage to perform *Duo I* from his shorthand notation. This is at least implicit in the performance instructions, where Wolff notes that

¹⁵ In his draft of the performance instructions, Wolff suggests that the latter technique be performed at a relatively high dynamic level.

the source sets are "usually given in the vicinity of where they are needed," that is, they are rewritten several times throughout the parts in order to facilitate reference to them. Nevertheless, the notation does not make for ease of reading in performance. Three overriding problems confront the performer who would read from Wolff's score.

The first is Wolff's notation of time. How can the passage of time, notated in minute fractions of seconds, be read to any reasonable degree of accuracy even with the use of a chronometer? How can some of them, such as "11/42 second," be counted or even perceived?

The second problem is the determination of pitch content. The notation of the source sets presents no difficulty, of course. But having to refer continually to Wolff's notational shorthand in order to select and then often to modify the material -- having to read several *kinds* of notation simultaneously -- does not facilitate spontaneity, even when the source sets are "usually given in the vicinity of where they are needed."

The third problem is the synthesis of the first two. The performers must not only determine the actions which comprise the content of *Duo I* but must execute them with extreme temporal precision.

Faced with the flexible but cumbersome notation of Wolff's score, both Tudor and Cage prepared their own per-

formance material for *Duo I*. In fact, they did so not once but three times.

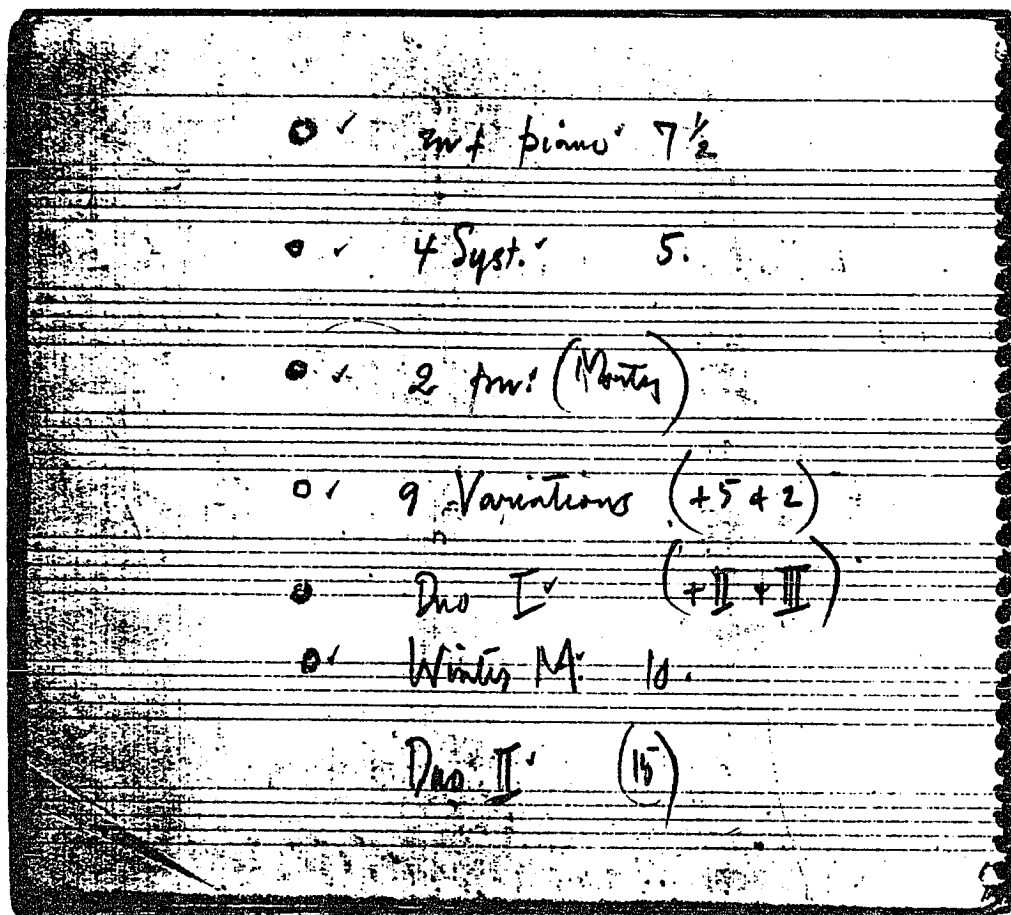
The Two Realizations of *Duo for Pianists I*

Genesis

Tudor and Cage each prepared three versions of *Duo I* no later than September 1958. I assumed that they each performed a single realization of the work at the premiere of the *Duo* in December 1957, since the program for that concert makes no reference to these multiple versions. Nor is more than one version of the work noted in the program of the joint recital Tudor and Cage gave in Darmstadt on Wednesday 3 September 1958, when they introduced *Duo I* to Europe. But a memo in Cage's sketchbook containing the three versions of his realization shows a list of works and timings which corresponds exactly to the program he and Tudor gave at Darmstadt (Fig. 5-2). Cage's abbreviations refer to his own *Music for Piano, Variations I*, and *Winter Music*, Brown's *Four Systems* (in Tudor's later realization for two pianos), Feldman's *Two Pianos 1957*, and Wolff's *Duos for Pianist I and II*.¹⁶ The entry "Duo I (& II & III)" shows that Cage and Tudor performed all three versions of their realizations of *Duo I* at the Darmstadt concert in 1958. (*Duo II*, the

¹⁶ Note Cage's description of his *Variations I* (1958) as "9 Variations."

Fig. 5-2. Cage, sketchbook, fol. 28v: list of works and timings for concert at IFNM Darmstadt, 3 September 1958.



final entry in the list, received its first performance at this concert).

Cage's Realization of *Duo for Pianists I*

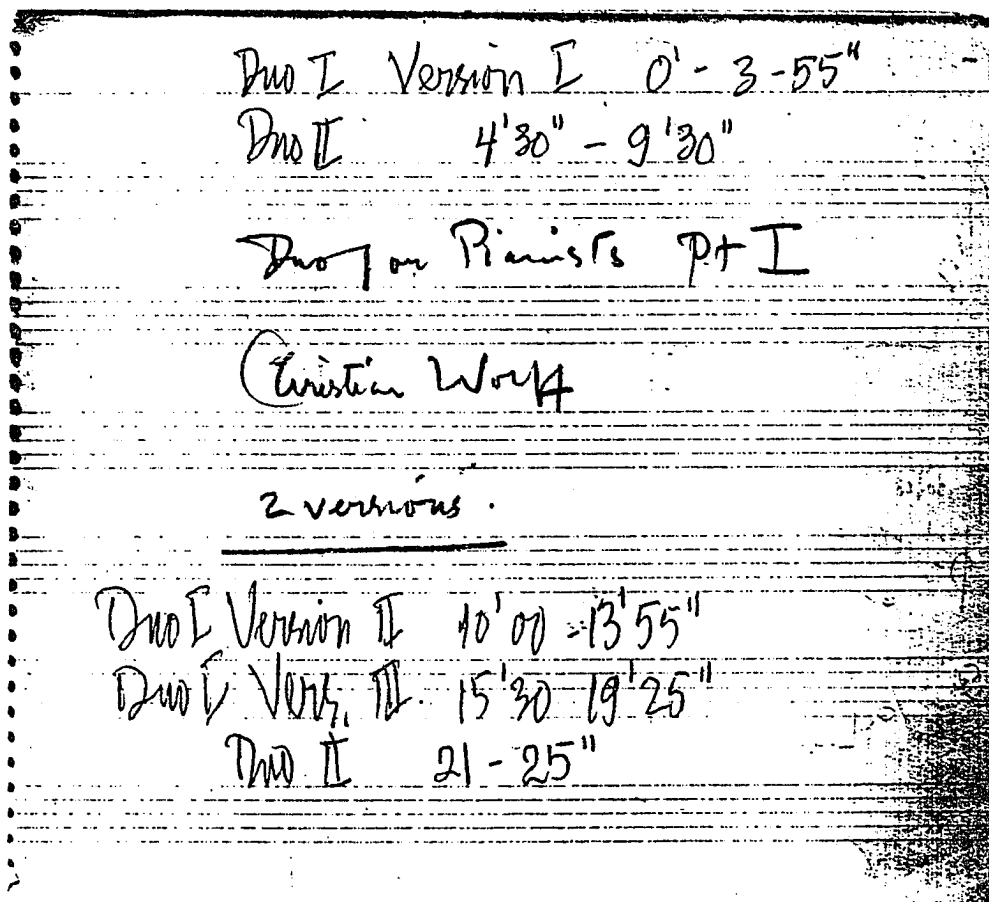
Cage wrote the three versions of his realization of *Duo I* in a sketchbook originally containing 96 pages, although in its present state only 56 pages remain (28 folios notated recto and verso).¹⁷ The sketchbook bears no signature and is undated, but on the basis of its principal contents -- a number pieces from the series *Music for Piano*, the realization of *Duo I*, and the list of timings for the 1958 Darmstadt concert -- it dates from the latter part of 1958. The existence of the sketchbook, currently in the possession of the author, is most fortunate, for it affords a rare, perhaps singular opportunity to compare Tudor's methods of preparing a realization with those of a close colleague.

Cage entered the three versions consecutively in the sketchbook, prefacing them with a title page and timings corresponding to the Darmstadt program, in which, apparently, Wolff's new *Duo for Pianists II* was played twice, interspersed between the three versions of *Duo I* (Fig. 5-3).¹⁸ Not only is this layout evidence that Cage used the sketchbook at Darmstadt; since the performance plan precedes the

¹⁷ The sketchbook is the common 6-stave Schirmer No. 101 Wire Bound Music Writing Book.

¹⁸ The three realizations are on folios 17v-22r, 22r-24v, and 25v-28r of the sketchbook.

Fig. 5-3. Cage, sketchbook, fol. 17r: performance plans and timings for Wolff, *Duos for Pianists I and II*.



only source of Cage's three versions of *Duo I*, it suggests that he may not have prepared a realization of *Duo I* for the work's premiere at Harvard the previous December, but played from Wolff's score.

In his first version of the realization, Cage modified his own technique of spatial notation (Fig. 5-4).¹⁹ The score is laid out in measures denoted by short vertical strokes above the staff. (In his second and third versions, Cage indicated measures by complete barlines.) In all three versions, Cage entered timings, in minutes and seconds, above the stroke. He indicated extended silences, such as the 25 seconds in the middle of system 1 in Wolff's score, by suspending this time-notation and writing "Tacet" in the intervening space.

Cage also used a modified form of Brown's proportional notation in his first version. Notation is placed within measures, rather than consistently at the beginning of them, and precise attack points are entered above the beginning and, when necessary, the end of each notated action.

¹⁹ Cage first used this notation, in which a unit of space is equated with a unit of time, e.g. a quarter-note = 2.5 cm. = tempo *T*, almost from the beginning of his use of chance operations. The idea stemmed from Cage's work with magnetic tape, where length is equivalent to time. This discovery was decisive in shifting Cage's interest from metrical, or what Harrison called "psychological," time, to chronological time, an interest incipient in the concentric rhythmic structures of his works of the later 1940s. See Chapter 2, note 4, above.

Fig. 5-4. Cage, sketchbook, fol. 17v: realization of Wolff, *Duo for Pianists I*, p. 1

The image shows a handwritten musical score on two systems of staves. The top system consists of two staves. The upper staff has a treble clef and contains several notes with circled numbers 1, 2, 3, 4, and 5 above them. There are also circled numbers 1 and 5 below the staff. A bracket above the staff spans from the first note to the fifth, with the number 3.5 written above it. The word "Tacet" is written at the end of the system. The lower staff of the top system has a bass clef and contains some notes and markings, including a large scribble. The bottom system also consists of two staves. The upper staff has a treble clef and contains notes with circled numbers 30, 31, 32, and 33 above them. A bracket above the staff spans from the first note to the fourth, with the word "Tacet" written to the right. The lower staff of the bottom system has a bass clef and contains notes and markings.

For example, the *primo* part of *Duo I* begins with 1/16-second of silence, followed by a segment denoting 2 pitches drawn from source set *b* to be played legato within a time-unit of 1-1/4 seconds. For his first version (see Fig. 5-4), Cage selected E5 and C#4 from set *b*, to be articulated as a two-note slur, and marked this figure *legato* with pedal (or so it would seem from the bracket beneath the two notes). Above the first note is the figure .06; above the end of the pedal sign and shortly after the encircled 1 (meaning the first second of cumulative clock-time) is the figure .31. These 3 figures indicate an attack point at .06 second after the beginning of the performance and a cessation at 1 + .31 seconds, or a duration of 1.25 seconds. As we shall see, Cage's approach reflects a basic difference of interpretation between the two performers: whereas Tudor read Wolff's time-units exclusively as attack points (the first permission in Wolff's performance instructions), Cage read them as time frames (the second permission).

Tudor's Realization of *Duo for Pianists I*

Unlike Cage's consecutive entries, Tudor's three versions of his realization of *Duo I* are in separate gatherings, each consisting of a different kind of staff paper. Paper-type, however, is not a reliable guide to the chronology of Tudor's realization, for Tudor frequently made assemblages from different paper-types and cuttings when prepar-

ing multiple versions of a realization.²⁰ Furthermore, writing out a realization was a common practice for Tudor by this time (1957-58), whereas Cage rarely prepared his own performance material for another composer's work.²¹

Tudor's first task was to clarify the time notation of *Duo I*. To do this, he converted the temporal dimension from Wolff's fractions to decimals, then converted the decimals to cumulative clock-time. This was done on two conversion tables (Fig. 5-5). In the first column, Tudor has copied Wolff's fractional system of time notation. In column 2, the fractions have been converted to decimals, and in column 3 the decimals converted to clock-time in seconds and micro-seconds.

Apparently deciding that he needed a more precise representation of these conversions, Tudor compiled a second table (Fig. 5-6). It resembles the first, but its column 3 shows the clock-time in greater detail. In column 1 of this table, the fifth entry shows the timing (1/3 second) in Wolff's score. Tudor's table converts this to .333...,

²⁰ For example, his two realizations, and their various versions, of Cage's *Concert for Piano and Orchestra* (see Chapter 6, below).

²¹ When he and Tudor performed *Winter Music* (1957) as a duo, Cage read from his manuscript, while Tudor read from his realization of Cage's score. When performing Brown's *Four Systems*, Cage played from Tudor's realization. Although he did prepare at least one realization of his own work (the *Cartridge Music* of 1960, according to William Fetterman in a communication to the author), Cage's realization of *Duo I* may be the only one he made of another composer's music.

Fig. 5-5. Tudor, work sheet for realization of Wolff, Duo for Pianists I: conversion table for secondo

II		
$\frac{1}{8}$.25	0' 0.25"
$\frac{1}{4}$.5	5.25
$\frac{3}{8}$.75	5.75
$\frac{1}{2}$	1.5	8.
$\frac{5}{8}$	2.25	8.33
$\frac{3}{4}$	3.	14.33
$\frac{7}{8}$	3.75	16.33
1	4.5	46.83
$1\frac{1}{8}$	5.25	1' 41.33
$1\frac{1}{4}$	6.	1' 47.33
$1\frac{3}{8}$	6.75	1' 47.42
$1\frac{1}{2}$	7.5	1' 49.08
$1\frac{5}{8}$	8.25	1' 49.25
$1\frac{3}{4}$	9.	1' 49.33
$1\frac{7}{8}$	9.75	1' 50.
2	10.5	1' 50.11
$2\frac{1}{8}$	11.25	1' 52.11
$2\frac{1}{4}$	12.	1' 52.44
$2\frac{3}{8}$	12.75	1' 52.94
$2\frac{1}{2}$	13.5	2' 2.94
$2\frac{5}{8}$	14.25	2' 8.44
$2\frac{3}{4}$	15.	2' 9.11
$2\frac{7}{8}$	15.75	2' 23.11
3	16.5	2' 23.17
$3\frac{1}{4}$	17.25	2' 24.42
$3\frac{1}{2}$	18.	2' 24.55
$3\frac{3}{4}$	18.75	2' 24.61
4	19.5	2' 25.11

Fig. 5-6. Tudor, work sheet for realization of Wolff, *Duo for Pianists I*: second conversion table for *secondo*

II	
.25	0:00.25
.5	0:05.25
.75	0:05.75
2.25	0:08.00
3	0:08.33
6	0:14.33
8.5	0:16.83
30	0:46.83
54 1/2	1:41.33
6	1:47.33
.083	1:47.416
1.6	1:49.083
.16	1:49.25
.083	1:49.33
.6	1:50.00
.1	1:50.11
2	1:52.11
.5	1:52.44
.5	1:52.94
.6	2:02.94
5.5	2:08.44
.6	2:09.71
14	2:23.11
.0625	2:23.77361
1.25	2:24.42361
.725	2:24.54861
.0625	2:24.61
.5	2:25.11

represented in column 2 as .3 and in column 3 as $0.083\bar{3}$. These and other similarly uneven microseconds work themselves out in Tudor's cumulative timings in column 3; that is, they tally to the duration of Wolff's score.

Tudor also prepared a conversion table for the *primo* part of *Duo I*, though I have not been able to ascertain whether Cage used it, and I have found no other preparatory material by Tudor for the *primo* part. As a result of the conversion process, the time-units for all actions in *Duo I* (shown in column 2 of the tables) and the cumulative time of the entire work (shown in column 3) can be monitored in performance by a chronometer placed on the music rack--just as Wolff suggests, but now more efficiently so.

Tudor next prepared a content sketch for each of his three versions to determine their pitch content according to Wolff's instructions. Referring only to source sets a-c (these are the only sets found in Tudor's handwritten copy of Wolff's score), Tudor notated his determinations for pitch on three pages of staff paper, adding some modes of attack and cues for preparations and articulations but only a few dynamic markings (Fig. 5-7). All three of the content sketches show that Tudor made his determinations in the order in which the encoded information on which they are based appears in Wolff's score. The remaining determinations were, then, apparently made when Tudor transferred the

Fig. 5-7. Tudor, content sketch for realization of Wolff, *Duo for Pianists I*, version 1

PASSANTINO BRAND
No. 1. 12 Stave-Medium

Litho'd in U.S.A.

material from the content sketches to each version of his realization.²²

The plotting of a time-line by clock-time in decimals must have led Tudor to his solution of the third major problem of performing *Duo I*, the synthesis of the work's temporal structure with its content. Here, Tudor appropriated Cage's notation in space. He replaced Wolff's segmental scoring with a score mapped out in measures, each 2.5 inches long, with 3 measures per system (Fig. 5-8). Cumulative time, entered at the end of each system, is in increments of 15 seconds. In other words, 1 measure = 2.5 inches = 5 seconds, so .5 inch = 1 second. This was a far more efficient means by which to read the temporal dimension of *Duo I*. With timings, pitch content, and a score laid out in equidistant and equitemporal measures, Tudor could place the notation of each action precisely where it occurred within this new spatial-temporal frame. This was similar to Cage's approach to the same problem but more precise, more consistent, and more comprehensive: Cage notated the discrete actions proportionally, adding timings as needed; Tudor's time frame is continuous.

An example of this is Tudor's approach to the notation in segments 2-4 on the first page of Wolff's score:

²² Leaving the parameter of dynamics to the later stages of preparing a realization may have been Tudor's general practice. We have seen this to be the case in his realizations of Feldman's *Intersections 2* and *3* and of Brown's *Four Systems*.

Fig. 5-8. Tudor, realization of Wolff, Duo for Pianists I, first version, p. 1

The image shows a handwritten musical score on a page with a dark border. The score is written on multiple staves. At the top left, there are some handwritten notes and symbols, including what looks like a treble clef and some numbers. The main body of the score consists of several staves with notes and rests. There are several annotations throughout the score, including "Tpp" (pianissimo), "M" (mezzo-forte), "OFF 3" (off-beat 3), and "UC" (unconventional). There are also time markings such as ".15" and ".30". At the bottom right, there is a handwritten note "OFF 3" with a bracket underneath it. The overall appearance is that of a working draft or a first version of a musical score.

segment	2	3	4
	5:f ppp	1/2:3b 2x	2 1/4:0

Segment 3 calls for 3 pitches from source set *b* plus 2 to be selected by the performer, all 5 to be played within a time frame of .5 second, this following the frame of 5 seconds in the previous segment. In his content sketch, Tudor's pitch material for 3*b* is Eb5, E5, and C#4, though notated in rhythmic forms different from its appearance in the realization itself (See Fig. 5-7, above).²³ To show the attack point of this action in his realization, where .5 inch = 1 second, Tudor entered the notation, as the trichord C#4-D#5-E5, at .25 inch after the beginning of measure 2 and exactly 2.5 inches (= 5 seconds) after his notation of segment 2 as the dyad F#4-G4, marked *fppp*.²⁴ The realization of the remainder of segment 3 (the 2*x*) is another dyad, F#4-B5, prepared as a muted (*M*) harmonic in measure 1 but played concurrently with its complement, the trichord in measure 2.

Similarly, Tudor's realization of segment 4 (2.25 seconds of silence), is shown as an empty space on the staff; its corresponding length is 1.125 inches.

The steps I have described illustrate Tudor's procedure for preparing the first and third version of his realization

²³ In the sketch, the Eb5 is a whole note, the E5 part of a grace-note dyad, and the C#4 a single grace note.

²⁴ We recall that multiple dynamic markings are, according to Wolff's performance instructions, applicable to 1 or more pitches in a segment.

of *Duo I*.²⁵ He prepared the second version in the same way but with one puzzling exception: version 2 is plotted in measures not of 2.5 but 2.25 inches, though each measure is again equivalent to 5 seconds. The reason for using such a scale, resulting in a much more complicated correspondence between time and space, is not clear to me.

Whether or not it was because both Tudor and Cage had written out their own performance material of *Duo I*, Wolff next attempted to force his performers into improvisation by modifying his notation. Each part of *Duo for Pianists II*, completed in July 1958, contains a set of cues placed at different locations and next to different notational segments in each part. Thus, a dynamic cue such as *ff* in the *primo* part becomes audible to the other performer (but not visible, since in the *secondo* part the same cue precedes a different segment), who then finds and plays a segment with the cue *ff* in the *secondo*. The sequence of actions is not merely left to but is dependent upon the actuality of the performance itself.

Duo for Pianists II used a basic yet effective method of ensuring both aural coordination and formal unpredictability. But it did not address the more tantalizing prob-

²⁵ The numbering of the three versions is that found in the inventory of the Tudor Collection made in 1989 by Gale Cohen under Tudor's supervision. I have not found any internal evidence in the three versions to contradict this sequence.

lem of placing Tudor in a similar situation by himself. For that, Wolff needed a work whose content would be contingent on the actions of a solo performer.

For Pianist (1959)

[The] contingency process [in *Duo II*] works very well for two or more instruments, but is obviously difficult to apply to a solo situation (which Wolff wanted to do in pieces he wrote for David Tudor, partly as a 'reaction against Tudor, who would always work out a piece fully beforehand'). Consequently in *For Pianist* (1959) Wolff makes the cue system dependent on factors beyond the player's control - either accidents or errors he makes, or particular acoustical conditions that may arise

But these notations are highly complex and demanding

Michael Nyman²⁶

I take the responsibility for competence and hope to have made something hazardous with which we may try ourselves.

Christian Wolff

Wolff composed his next work for Tudor in the summer of 1959.²⁷ Tudor performed *For Pianist* on Wednesday 28 Octo-

²⁶ Nyman, *Experimental Music*, 57. The internal quotation is presumably taken from an interview with Wolff, though Nyman does not so identify it. This quotation is the basis of my assumption that Wolff felt the need, or at least the temptation, to compose a solo work incorporating the notational techniques used in *Duo II*.

²⁷ There is no date in the performance score itself, but the performance instructions are dated "June, July, 1959." Wolff, in a personal communication to the author, said that he composed *For Pianist* during his free time while in basic training in the U. S. Army.

ber of that year on a *Studiokonzert* given under the auspices of the Gesellschaft für Neue Musik at the Staatliche Hochschule für Musik in Cologne. The American premiere took place on Monday 4 April 1960 at the Living Theatre in New York.²⁸

Much of the notational technique of *For Pianist* is essentially the same as in the two *Duos*. There are six pitch source sets, labelled, again curiously, a-e and g. Unlike the *Duos*, however, the sets are shown only in the performance instructions, not placed at various reference points throughout the score. This, too, is curious in light of Wolff's assumption that the performer will read from his original notation. The notation itself is again laid out in segments combined into discrete brackets (Wolff's "structural units") analogous to systems.

What is new is the complexity of performance possibilities. The cueing system in *Duo for Pianists II*, consisting mostly of dynamic markings and articulations plus a few stretches of silence, is almost primitive in comparison to the map-like method Wolff uses to guide the performer through the notation of *For Pianist*.

²⁸ The concert was part of a series of three programs of new music Tudor gave at the Living Theatre in the spring of 1960. The series was the impetus, it seems, for Harold Schonberg's profile of Tudor, "The Far-Out Pianist," that appeared in the following June issue of *Harper's Magazine*.

Wolff's notes to a recording of *For Pianist* explain both his compositional goals and the method of attaining them:

For Pianist (1959) is an attempt to involve a single player in situations like those of pieces (such as *Summer* [1959, for String Quartet], *Duo for Pianists II*) in which several players rely on what they hear from one another, unpredictably, for cues. The pianist, for example, is to make a sound "as softly as possible." At the moment of playing, he will make it just that way, or more loudly, or the sound will be inaudible. Whichever [action] results will determine alternate paths he must directly follow. The piece is made up of ten pages of such paths or continuities, sometimes bifurcating, overlapping, and drawing the pianist into labyrinthian complications. The continuities are sequences of time lengths, fractions of a second to half a minute, within which numbers of sounds are given with varying degrees of specification, e.g. giving for a single sound only its amplitude, or for several a choice of two or five pitches. The player, when he is free to do so, makes the final specifications, tending in the larger spaces of time to vary his choices at every performance. An interchange between the score's fixed determinations and the player's use of its free spaces and loopholes, between *his dependence on suddenly arising necessities and his freedom to choose just as he plays* underlies the music.²⁹

²⁹ Wolff, notes to Wergo WER-60063, italics added. The album, devoted to three works by Wolff, was recorded at Dartmouth College in August 1971. The recording of *For Pianist* is by Frederic Rzewski. My suspicions about the identity of the pianist playing *For Piano I* in the same album were confirmed by Wolff himself: it is also Rzewski, not Tudor, as the album cover and record label claim. (Both Rzewski and Tudor are among the performers of the third work, *Burdocks* [1970-71]). Tudor recorded two works by Wolff as part of the Time/Mainstream series produced by Brown in the early 1960s (*Duet II* [1961], for horn and piano, with Howard Hillyer, and the *Duo for Violinist and Pianist* [also 1961], with Kenji Kobayashi, both on Time/Mainstream MS-8009, rel. 1963). He also recorded -- as an organist -- Wolff's *For 1, 2, or 3 People* (1964) as part of an album entitled "A Second Wind for Organ" (Odyssey 32 16 0158, rel. 1967, del. 1978).

The ten pages of performance material in *For Pianist* are in fact numbered 1-7 and 9-11 because, Wolff notes rather nonchalantly near the end of his performance instructions, "there is no page 8."³⁰ In addition, there are three distinct sections to the notation on page 6, labelled a-c, only one of which need be played in a given performance. Tudor, as we shall see, performed all three sections of the page. He also prepared two realizations of the tiny page 5.

As in the case of *Duo I*, Tudor wrote out his own copy of Wolff's score. A comparison of the first page of each manuscript suggests Tudor's purpose in doing so (Figs. 5-9a and 5-9b). Tudor draws double lines around the borders of those segments containing notations of actions, thereby setting them off from segments consisting solely of silence. This orients the performer toward those parts of *For Pianist* where actions must be made, rather like notes versus rests. At the same time, by connecting the segments of each system, Tudor's layout results in a visual continuity between segments, be they notations of sound or of silence. The composer's autograph score is apparently lost; Wolff later

³⁰ In a letter to Tudor dated 24 August 1989, Wolff wrote parenthetically, "Something went off in the page numbering so there's no page 8 -- I mean it's not missing, the number 8 just wasn't used."

Fig. 5-9a. Wolff, *For Pianist*, p. 1: facsimile of composer's autograph

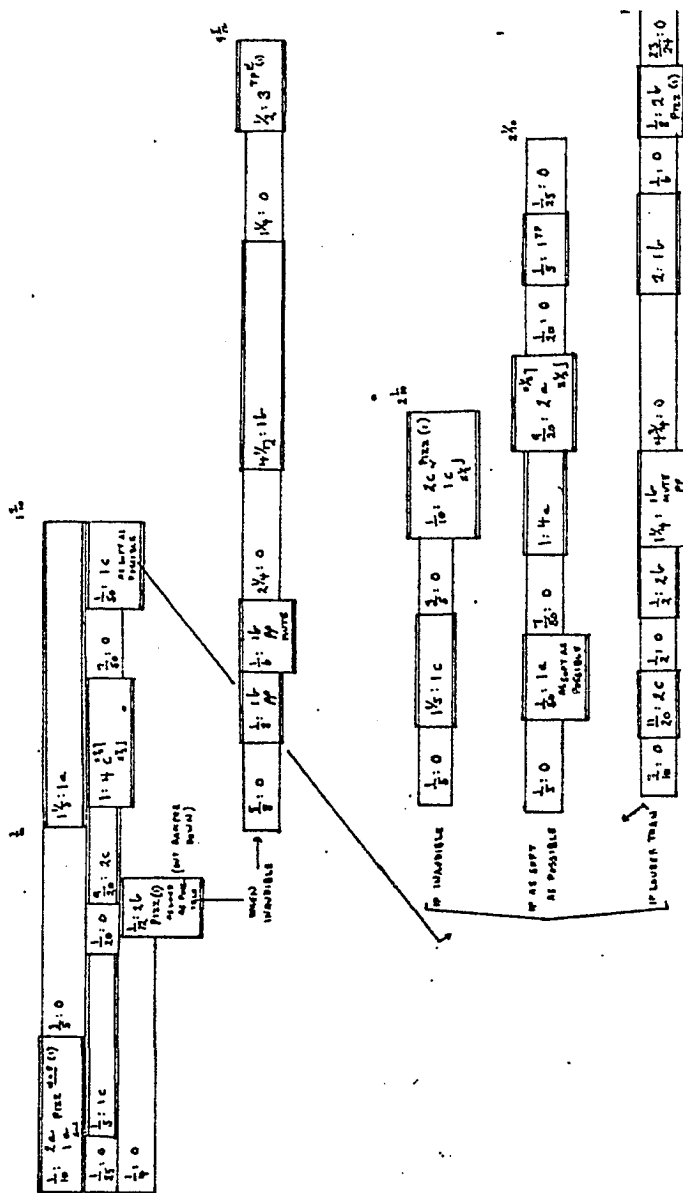
The image shows a handwritten musical score for the piece "For Pianist" by Arnold Schoenberg. The score is written in a shorthand notation, likely representing chords and their durations. The notation is organized into several measures, with some measures containing multiple chords or instructions. The notation includes various symbols such as $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, and $\frac{1}{32}$, along with letters like 'a', 'c', 'p', 'pp', 'mf', 'f', 'ff', 'pizz', 'trill', and 'trill'. Some measures are marked with "IF UNUSABLE" or "IF AS SHRT AS POSSIBLE". The score is written in a clear, legible hand, and the overall layout is organized and systematic.

1. $\frac{1}{2}$ a. Pizz(1) $\frac{1}{2}$:0
b. $\frac{1}{2}$:1c
c. $\frac{1}{2}$:0
d. $\frac{1}{2}$:0

2. $\frac{1}{2}$:0
3. $\frac{1}{2}$:0
4. $\frac{1}{2}$:0
5. $\frac{1}{2}$:0
6. $\frac{1}{2}$:0
7. $\frac{1}{2}$:0
8. $\frac{1}{2}$:0
9. $\frac{1}{2}$:0
10. $\frac{1}{2}$:0
11. $\frac{1}{2}$:0
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90. $\frac{1}{2}$:0
91. $\frac{1}{2}$:0
92. $\frac{1}{2}$:0
93. $\frac{1}{2}$:0
94. $\frac{1}{2}$:0
95. $\frac{1}{2}$:0
96. $\frac{1}{2}$:0
97. $\frac{1}{2}$:0
98. $\frac{1}{2}$:0
99. $\frac{1}{2}$:0
100. $\frac{1}{2}$:0

For Pianist Arnold Schoenberg © 1915 by C.F. Peters Corp. 373 Park Ave. South New York 10016 N.Y.

Fig. 5-9b. Wolff, For Pianist, p. 1: copy by David Tudor



For Pianist: Clavin Wolff Copyright © 1945 by S.F. Feldes Corp. 373 Park Ave. So. New York 16 N.Y.

used Tudor's copy to make a new copy of his own for the publication of *For Pianist* in 1965.³¹

In addition to the same kinds of performance problems found in *Duo for Pianists I*, Wolff contrived -- deliberately, one suspects -- a number of new ones in *For Pianist* order to preclude the possibility that Tudor could "work out a piece fully beforehand." The most elaborate of these was the interrelation between systems in the score. As many as three different and separate performance possibilities are contingent on the result of a fourth, as occurs on the very first page of *For Pianist* (see Fig. 5-9a, above). For example, a broken line connects the final segment in system 1

1/50:1c
soft as possible

to three additional systems; only one of these is to be performed, according to which of the three possibilities Wolff calculated would follow from his instruction "1/50:1c soft as possible."

As it turned out, Wolff's efforts fell short of his goal: Tudor made a realization of *For Pianist* in which he prepared himself for all contingencies that could arise in performing it.

³¹ *For Pianist* was published in 1965 as Peters 6496. In the same letter to Tudor cited above, Wolff wrote, "As for *For Pianist*[,] all I could find was a copy of your fair copy of it, which I used to make a new copy for Peters."

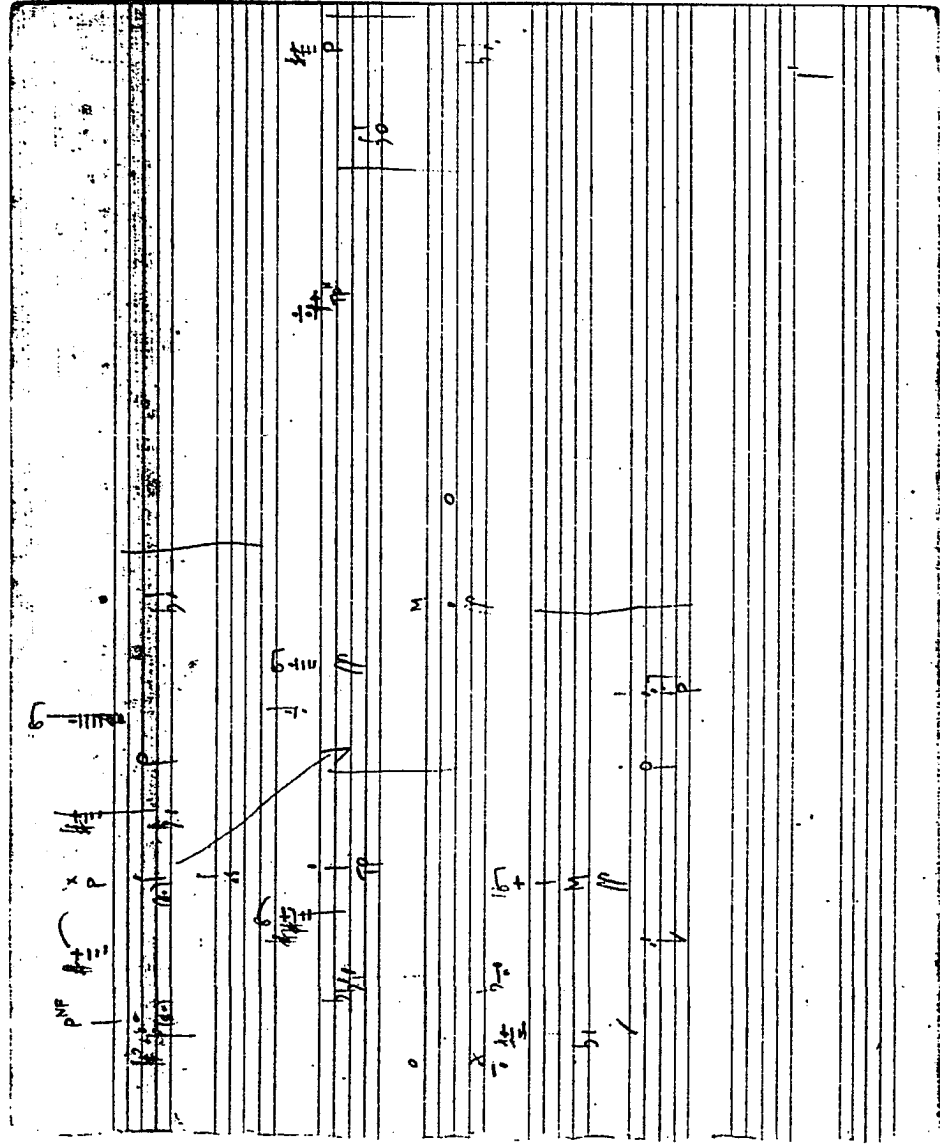
Tudor's Realization of *For Pianist*

Content and Performance Order

Tudor began by making a content sketch of each page of Wolff's score. The sketches, on 4 folios of 8-staff music paper torn from a notebook binding, show his determinations of complete pitch content as well as numerous articulations and timbral qualities, plus a few dynamics. Tudor sketched each system as a separate unit, or measure, denoted by a barline. He also used standard rhythmic notation in both his sketches and realization, but only as general indications of *duration*, not to denote strict *rhythmic relationships*. For example, a thirty-second note corresponds to a smaller time-unit in Wolff's score, not to the other rhythmic values in Tudor's realization.

Tudor's sketch for the first page of *For Pianist* demonstrates his process of determining the page's content (Fig. 5-10). The sketch for Wolff's system 1 happens to be written in the first system of Tudor's sketch page, but the next system in the sketch corresponds to Wolff's systems 4, 2, and 3, respectively, and the sketch for Wolff's system 5 is on the third and final system on the page. In other words, Tudor did not necessarily sketch the systems of Wolff's score in their order of appearance (reading Wolff's score

Fig. 5-10. Tudor, content sketch for realization of Wolff, For Pianist, p. 1



always commences from the left side of the page, regardless of the vertical alignment of the systems.)³²

In the sketch for Wolff's system 1, a diagonal arrow indicates the direction the performer's reading takes according to the result of an action prescribed in system 1, specifically, the segment

1/12: 2b
pizz (1)
loud as possible (damper down)

Below the segment, the cue "when inaudible →" points to system 2 of the page. This means that if the action(s) taken in performing segment 1 produce an inaudible result, the performer is to proceed to system 2.³³ Tudor's sketch

³² The sequence of the sketches in the 4 folios shows that Tudor made them in the following order:

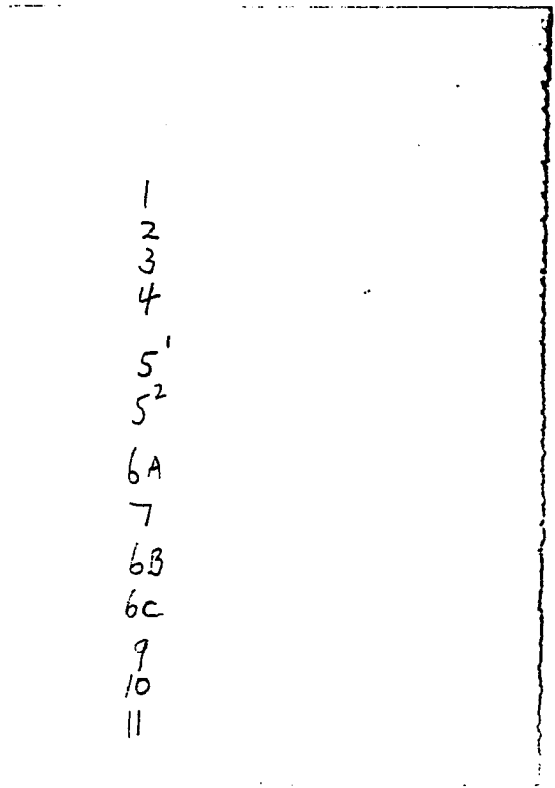
<i>For Pianist, p.</i>	<i>Content sketch, fol.</i>
1	1r
2	2r
3	1v, system 1
5	1v, system 2
4	2v (continued on p. 140)
6a-c	3r
7	4r
11	3v
9	4v, system 1
10	4v, system 2

³³ Wolff's cue, puzzling in light of his direction that the preceding actions be made "as loud as possible," may refer to the pitch to be played pizzicato: depending on the dynamic level of the other two pitches notated in the segment, there is at least the risk that when the dampers are down, as Wolff requests, the sound of a plucked piano string will not be heard.

reflects this contingency by connecting the corresponding sketch of Wolff's system 1 to the sketch for system 2.

In addition to his content sketches, Tudor wrote out a performance order of the ten pages of his realization which shows that he performed *For Pianist* close to the order in which the pages appear in Wolff's score (Fig. 5-11).

Fig. 5-11. Tudor, work sheet for realization of Wolff, *For Pianist*: performance order of pages 1-10



1
2
3
4
5'
5²
6A
7
6B
6C
9
10
11

Temporal Structure

Having determined the content of his realization and the order in which he would perform it, Tudor next needed to represent the temporal structure of *For Pianist*. There is no indication that he addressed this aspect in his sketches except by his generally proportional notation of the specific content of each segment. In his realization, however, he replaced the fractional notation of time in Wolff's score with a system of proportional notation oriented to a *time-line* shown in vertical strokes in red pencil across the top and bottom of each page (the remainder of the realization is in regular black pencil). Each stroke represents a time-unit of one second (I ascertained this by comparing the time-lines with the cumulative durations of each page in Wolff's score). Tudor then entered the notation of each system from his content sketch at its appropriate location along this time-line (Fig. 5-12).

The realization begins with Tudor's reading, in system 1, of the first system on page 1 of Wolff's score. As in the sketches, a barline marks off Tudor's realization of one system in Wolff's score. Following the first barline in Text 2, however, is a measure containing two realizations: the upper staff shows the realization of Wolff's system 3, the lower staff the realization of system 4. As in all of his readings, Tudor notated these in space proportional to their respective durations. But the placement of systems 3

Fig. 5-12. Tudor, realization of Wolff, For Pianist, p. 1

The image displays a handwritten musical score for piano, consisting of multiple staves. The notation includes various notes, rests, and performance markings. Key markings include 'INNOBIE' (appearing multiple times), 'PZZ' (pizzicato), and 'TP' (trillo). There are also circled numbers and other symbols scattered throughout the score. The handwriting is somewhat dense and appears to be a working draft or a specific realization of a piece.

and 4 in this manner -- one above the other and not following system 2 but system 1 -- is utilitarian: Tudor placed the notation of each reading where it would be most readily available if needed in performance. Since the order in which the realizations of systems 3 and 4 will be performed is contingent on one of the actions notated in the realization of system 1 in the previous measure, Tudor could in this way move easily from one system to another as the contingencies of his performance required.

Tudor's notation of each system continues for as many time-units as are needed to show its duration. A * signifies the cessation of a specific sonority, as in the second measure of page 1, where the Eb₄, a realization of Wolff's shorthand "1c" in system 3, is to last for 1.2 seconds ("1/5" in Wolff's score) (see Fig. 5-12, above). The duration of an entire system in Text 2, of course, corresponds to that of the system in Text 1 on which it is based. For example, on the first page of Wolff's score, system 2 shows a total duration of 9-5/12 seconds, noted above the end of the system (see Fig. 5-9a, above). Tudor's realization of this system, on the third staff of his performance score, begins just after the first vertical stroke in the time-line and continues to approximately 2/3 through the ninth stroke, a length of 7.2 inches. According to the time-line, this

length represents, with almost absolute precision, the passage of $9-5/12$ seconds.³⁴

Comparative Analysis of Selected Pages of Text 2

At this point, it will be advantageous to proceed by a "comparative" analysis of Tudor's realization of *For Pianist*. I mean by this term that I have drawn up analytic charts of three representative pages of the realization; these will, I hope, allow me to keep further comment to a minimum while allowing the reader to compare all levels of *For Pianist*: Wolff's notation, Tudor's sketch, and his realization in Text 2.

At the top of each chart is the notation from Wolff's score, labelled Text 1 and identified by page and system. Below this is the time-line of Tudor's realization, the strokes again representing incremental time in seconds but here more unevenly spaced due to the additional information in the chart. Next is the corresponding portion of the realization itself (labelled Text 2), with broken lines connecting each notation in it to its basis in Wolff's score above. Below the realization is Tudor's content sketch (my transcriptions of both sketch and realization are diplomat-

³⁴ The 7.2 inches of system 2 in the realization would, if aligned with the first vertical stroke in the time-line, continue to just before the midpoint of the tenth time-unit, that is, to ca. $5/12$ where $6/12 = .5$ second.

ic, with editorial additions placed between brackets).
 Finally, at the bottom of the chart, I have included for reference the appropriate pitch material from the source sets in Wolff's performance instructions.

The first analytic chart (Fig. 5-13) shows the process of realization for the first page of *For Pianist*. The first segment in Wolff's score shows the notation

$$1/10:2a \quad pizz \quad \overset{N+F}{\underset{x^{\downarrow}}{1a}} \quad (1)$$

that is, a time-unit of .1 second in which to play two pitches from source set a and a third from the same set but in a lower octave than notated there. According to Wolff's performance instructions, *pizz* $\overset{N+F}{\underset{x^{\downarrow}}{1a}}$ means

pluck with nail (e.g. right hand thumb nail) while flesh of finger rests on[,] or just off and falling on, plucked string, choking off sound (motion of nail can be like a snap at the string from below while flesh comes to rest on the string).

Part of Wolff's notation is ambiguous: it is unclear about whether the parenthetical 1 refers to the articulation of one of the three pitches from set a or to a pitch outside the set.

The first system of Tudor's realization begins with four pitches. Three of these, G4-A#5-B5, are drawn from set a; A#(Bb)5 and B5 are original members of the set, G4 is the G6 of the set played in a lower octave, satisfying the requirement of Wolff's notation

Fig. 5-13. Wolff, *For Pianist*, p. 1: analytic chart

Text 1, p.1, System 1

The analytic chart consists of several layers of musical notation and annotations:

- Top Layer:** A series of boxes containing time intervals in seconds: $\frac{1}{10}$, $\frac{2a}{1a}$, $\frac{3}{5}$, $\frac{1}{25}$, $\frac{1}{5}$, $\frac{1}{20}$, $\frac{9}{2}$, $\frac{1}{5}$, $\frac{1}{50}$, and $\frac{1}{50}$. Some boxes also contain notes like '1c' and '1a'.
- Second Layer:** A line labeled 'Time (in seconds)' with vertical dashed lines extending downwards to the musical notation.
- Third Layer:** Musical notation for the piano system, including dynamic markings like 'NF pizz' and 'x [No ped] pizz'. A box contains the instruction 'DAMPEN SOUND'.
- Fourth Layer:** A 'sketch' of the musical notation, showing a different version of the notes.
- Fifth Layer:** A 'source set' of notes labeled 'a', 'b', and 'c'.
- Annotations:** Various symbols and text are scattered throughout, including 'DAMPEN SOUND', 'SOFT AS POSSIBLE', and 'NF pizz'.

Fig. 5-13. Wolff, *For Pianist*, p. 1: analytic chart, continued

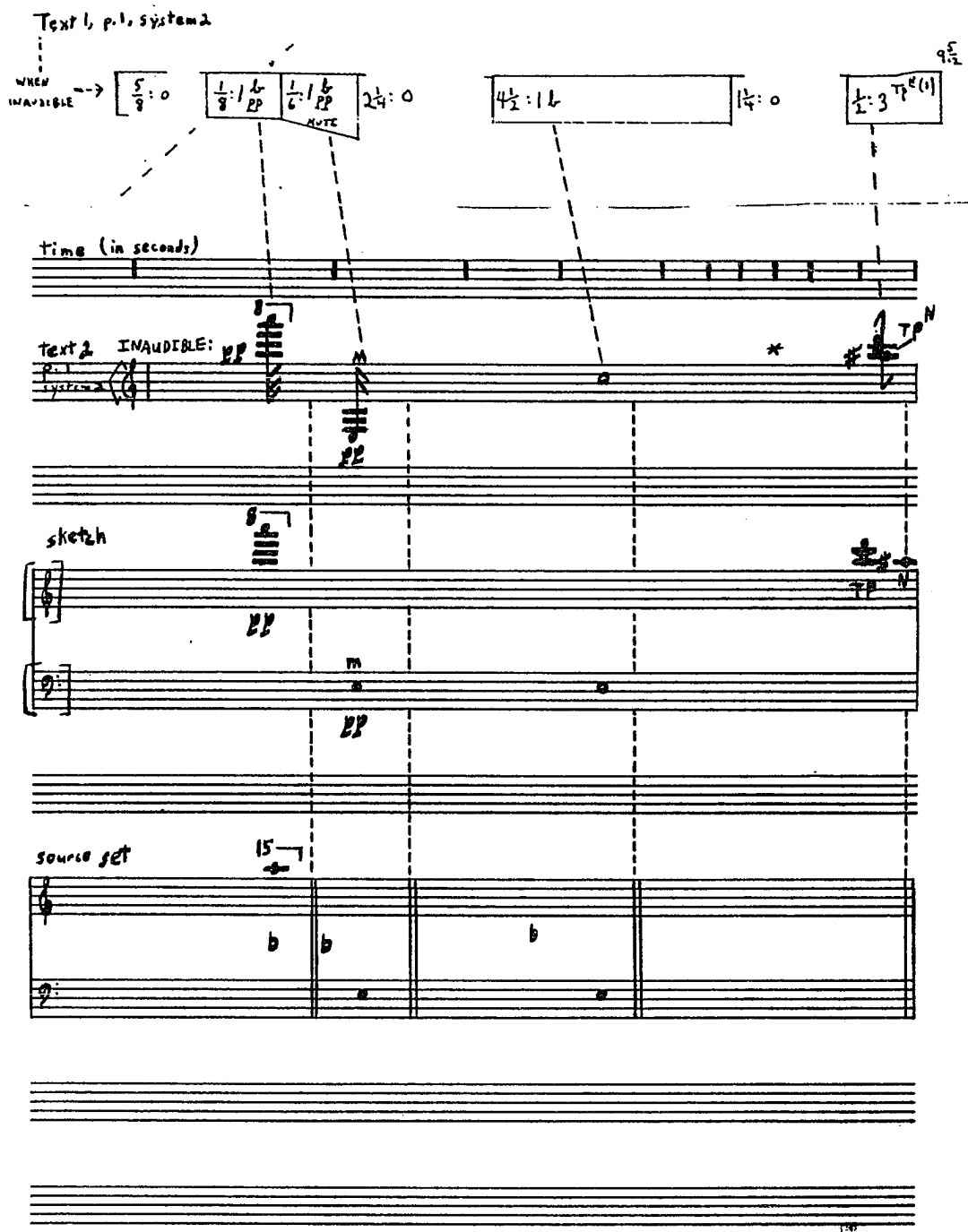


Fig. 5-13. Wolff, *For Pianist*, p. 1: analytic chart, continued

Text 1, p. 1, system 3

IF INAUDIBLE $\frac{1}{5}:0$ $1\frac{1}{5}: | c$ $\frac{3}{5}:0$ $\frac{1}{10}: 2c Pizz. (1)$
 $\frac{1}{10}: 1c$
 x

time (in seconds)

text 2
 INAUDIBLE: *

sketch

source set

Fig. 5-13. Wolff, *For Pianist*, p. 1: analytic chart, continued

Text 1, p. 1, System 4

IF AS SOFT AS POSSIBLE $\left[\frac{1}{5} : 0 \right]$ $\frac{1}{50} : \frac{1}{50}$ SIFT AS POSSIBLE $\frac{7}{50} : 0$ $\frac{1}{4} : a$ $\frac{9}{20} : \frac{2}{20}$ a $\frac{1}{10} : 0$ $\frac{1}{5} : TP$ $\frac{1}{15} : 0$ $2\frac{1}{2}$

time (in seconds)

text 2

VERY SOFT

TP

sketch

source set

a

Fig. 5-13. Wolff, *For Pianist*, p. 1: analytic chart, continued

Text 1, p. 1, system 5

The analytic chart is organized into several horizontal layers:

- Time Intervals:** A top row of boxes contains time intervals in seconds: $\frac{7}{10} : 0$, $\frac{11}{20} : 1c$, $\frac{1}{2} : 0$, $\frac{1}{2} : 2b$, $\frac{1}{4} : 1b$ (with *forte* and *pp* markings), $\frac{1}{4} : 0$, $2 : 1b$, $\frac{1}{6} : 0$, $\frac{1}{8} : 2b$ (with *pp* and *trill* markings), and $\frac{23}{24} : 0$. A bracket groups the last two intervals with the label $11\frac{1}{2}$.
- Time (in seconds):** A horizontal line with vertical tick marks below the time intervals.
- text 2:** Musical notation on a staff with a treble clef. It includes a key signature of one sharp (F#) and dynamic markings: *LOUDER:*, *pp*, and *pizz*. A star symbol (*) is placed above the staff.
- sketch:** Musical notation on a staff with a treble clef. It includes a key signature of one sharp (F#) and dynamic markings: *pp* and *pp*. A bracket labeled 167 is above the staff.
- source set:** Musical notation on a staff with a bass clef. It includes a key signature of one sharp (F#) and dynamic markings: *pp* and *pp*. A bracket labeled 157 is above the staff.

Vertical dashed lines connect the time intervals to the corresponding measures in the musical notation layers.

1a
x¹

The fourth pitch, C5 with the cue "Pizz NF," is Tudor's realization of the remaining notation in segment 1, *Pizz* $\frac{N+F}{1}$ (1). (Tudor originally sketched this notation as two options, Cb5 or F#4, the latter notation appearing parenthetically in the sketch).

The first system in Wolff's score shows a total duration of 1.9 seconds, notated above the end of the system.³⁵ The final notation in the system calls for one pitch from set *c* to be played "as soft as possible" within .02 second of the end of the system. In Tudor's realization, this pitch becomes Eb4 played as a harmonic, written as a sixty-fourth note immediately before the end of the barline denoting the end of Wolff's system 1 (see Fig. 5-12, above).

Page 5 of *For Pianist* is, we have seen, the only page in the work for which Tudor prepared and used two versions. Repetition of pages is a *quodlibet* in Wolff's performance instructions ("play any pages; repeat as often as you like"). In fact, page 5 is not a page at all but a patch grafted onto page 6 (Fig. 5-14). It is therefore worth considering why Tudor went to the trouble of making two versions of this single notation. As can be seen in the

³⁵ The duration is the sum of the durations of the three upper segments in the system: $1/10 + 3/5 + 1-1/5$ seconds.

analytic chart of page 5 (Fig. 5-15), the two sketches for the page are numbered 5^2 and 5^1 , in that order. Both sketch 5^1 and its realization show a single sonority, the tetrachord Ab3-A#5-B5-F#7. But sketch 5^2 , which was made first, shows three distinct sonorities, the dyad Eb2-B5 followed by D1 and F#7. I believe that Tudor's numbering of the two sketches may have been retroactive. That is, after sketching the content of page 5 as three sonorities, he decided to sketch it again in a simpler form and use the second sketch first (saving the best for last, as it were), performing the material from the second sketch, numbered 5^1 , first, in order to contrast it with the more sophisticated earlier reading he then labelled 5^2 .

In Tudor's realization 5^1 (Fig. 5-16), the tetrachord is notated at the beginning of the time-line reflecting the .7 second in Wolff's score (Tudor places it "on the beat," so to speak, directly below the vertical stroke). As always, a barline denotes the end of the reading, which here is placed before the second vertical stroke, since the complete time-unit of page 5 is less than the one second shown by the time-line.

The initial sonority from sketch 5^2 is also placed at the beginning of the time-line, but sonorities 2 and 3 follow separately, resulting in a more expansive shape than the single sonority of sketch 5^1 , spanning outward from the

Fig. 5-14. Wolff, For Pianist, p. 5, superimposed at the bottom of p. 6

The image shows two pages of handwritten musical notation, labeled 5 and 6. The notation includes various time signatures, notes, rests, and annotations.

Page 6 (top):

- Starts with a treble clef and a 12/8 time signature.
- First measure: $5\frac{1}{2}$ 2b
- Second measure: $11\frac{1}{2}$ 1c
- Third measure: $11\frac{1}{2}$ 2d
- Fourth measure: $11\frac{1}{2}$ 5e
- Fifth measure: $11\frac{1}{2}$ 0
- Sixth measure: $11\frac{1}{2}$ 0
- Seventh measure: $11\frac{1}{2}$ 0
- Eighth measure: $11\frac{1}{2}$ 0
- Ninth measure: $11\frac{1}{2}$ 0
- Tenth measure: $11\frac{1}{2}$ 0
- Eleventh measure: $11\frac{1}{2}$ 0
- Twelfth measure: $11\frac{1}{2}$ 0
- Thirteenth measure: $11\frac{1}{2}$ 0
- Fourteenth measure: $11\frac{1}{2}$ 0
- Fifteenth measure: $11\frac{1}{2}$ 0
- Sixteenth measure: $11\frac{1}{2}$ 0
- Seventeenth measure: $11\frac{1}{2}$ 0
- Eighteenth measure: $11\frac{1}{2}$ 0
- Nineteenth measure: $11\frac{1}{2}$ 0
- Twentieth measure: $11\frac{1}{2}$ 0
- Twenty-first measure: $11\frac{1}{2}$ 0
- Twenty-second measure: $11\frac{1}{2}$ 0
- Twenty-third measure: $11\frac{1}{2}$ 0
- Twenty-fourth measure: $11\frac{1}{2}$ 0
- Twenty-fifth measure: $11\frac{1}{2}$ 0
- Twenty-sixth measure: $11\frac{1}{2}$ 0
- Twenty-seventh measure: $11\frac{1}{2}$ 0
- Twenty-eighth measure: $11\frac{1}{2}$ 0
- Twenty-ninth measure: $11\frac{1}{2}$ 0
- Thirtieth measure: $11\frac{1}{2}$ 0
- Thirty-first measure: $11\frac{1}{2}$ 0
- Thirty-second measure: $11\frac{1}{2}$ 0
- Thirty-third measure: $11\frac{1}{2}$ 0
- Thirty-fourth measure: $11\frac{1}{2}$ 0
- Thirty-fifth measure: $11\frac{1}{2}$ 0
- Thirty-sixth measure: $11\frac{1}{2}$ 0
- Thirty-seventh measure: $11\frac{1}{2}$ 0
- Thirty-eighth measure: $11\frac{1}{2}$ 0
- Thirty-ninth measure: $11\frac{1}{2}$ 0
- Fortieth measure: $11\frac{1}{2}$ 0
- Forty-first measure: $11\frac{1}{2}$ 0
- Forty-second measure: $11\frac{1}{2}$ 0
- Forty-third measure: $11\frac{1}{2}$ 0
- Forty-fourth measure: $11\frac{1}{2}$ 0
- Forty-fifth measure: $11\frac{1}{2}$ 0
- Forty-sixth measure: $11\frac{1}{2}$ 0
- Forty-seventh measure: $11\frac{1}{2}$ 0
- Forty-eighth measure: $11\frac{1}{2}$ 0
- Forty-ninth measure: $11\frac{1}{2}$ 0
- Fiftieth measure: $11\frac{1}{2}$ 0

Page 5 (bottom):

- Starts with a treble clef and a 12/8 time signature.
- First measure: $11\frac{1}{2}$ 0
- Second measure: $11\frac{1}{2}$ 0
- Third measure: $11\frac{1}{2}$ 0
- Fourth measure: $11\frac{1}{2}$ 0
- Fifth measure: $11\frac{1}{2}$ 0
- Sixth measure: $11\frac{1}{2}$ 0
- Seventh measure: $11\frac{1}{2}$ 0
- Eighth measure: $11\frac{1}{2}$ 0
- Ninth measure: $11\frac{1}{2}$ 0
- Tenth measure: $11\frac{1}{2}$ 0
- Eleventh measure: $11\frac{1}{2}$ 0
- Twelfth measure: $11\frac{1}{2}$ 0
- Thirteenth measure: $11\frac{1}{2}$ 0
- Fourteenth measure: $11\frac{1}{2}$ 0
- Fifteenth measure: $11\frac{1}{2}$ 0
- Sixteenth measure: $11\frac{1}{2}$ 0
- Seventeenth measure: $11\frac{1}{2}$ 0
- Eighteenth measure: $11\frac{1}{2}$ 0
- Nineteenth measure: $11\frac{1}{2}$ 0
- Twentieth measure: $11\frac{1}{2}$ 0
- Twenty-first measure: $11\frac{1}{2}$ 0
- Twenty-second measure: $11\frac{1}{2}$ 0
- Twenty-third measure: $11\frac{1}{2}$ 0
- Twenty-fourth measure: $11\frac{1}{2}$ 0
- Twenty-fifth measure: $11\frac{1}{2}$ 0
- Twenty-sixth measure: $11\frac{1}{2}$ 0
- Twenty-seventh measure: $11\frac{1}{2}$ 0
- Twenty-eighth measure: $11\frac{1}{2}$ 0
- Twenty-ninth measure: $11\frac{1}{2}$ 0
- Thirtieth measure: $11\frac{1}{2}$ 0
- Thirty-first measure: $11\frac{1}{2}$ 0
- Thirty-second measure: $11\frac{1}{2}$ 0
- Thirty-third measure: $11\frac{1}{2}$ 0
- Thirty-fourth measure: $11\frac{1}{2}$ 0
- Thirty-fifth measure: $11\frac{1}{2}$ 0
- Thirty-sixth measure: $11\frac{1}{2}$ 0
- Thirty-seventh measure: $11\frac{1}{2}$ 0
- Thirty-eighth measure: $11\frac{1}{2}$ 0
- Thirty-ninth measure: $11\frac{1}{2}$ 0
- Fortieth measure: $11\frac{1}{2}$ 0
- Forty-first measure: $11\frac{1}{2}$ 0
- Forty-second measure: $11\frac{1}{2}$ 0
- Forty-third measure: $11\frac{1}{2}$ 0
- Forty-fourth measure: $11\frac{1}{2}$ 0
- Forty-fifth measure: $11\frac{1}{2}$ 0
- Forty-sixth measure: $11\frac{1}{2}$ 0
- Forty-seventh measure: $11\frac{1}{2}$ 0
- Forty-eighth measure: $11\frac{1}{2}$ 0
- Forty-ninth measure: $11\frac{1}{2}$ 0
- Fiftieth measure: $11\frac{1}{2}$ 0

Annotations include "if notes sound" and "if notes sound" with arrows pointing to specific notes. There are also various mathematical expressions and symbols throughout the score.

Fig. 5-15. Wolff, *For Pianist*, p. 5: analytic chart

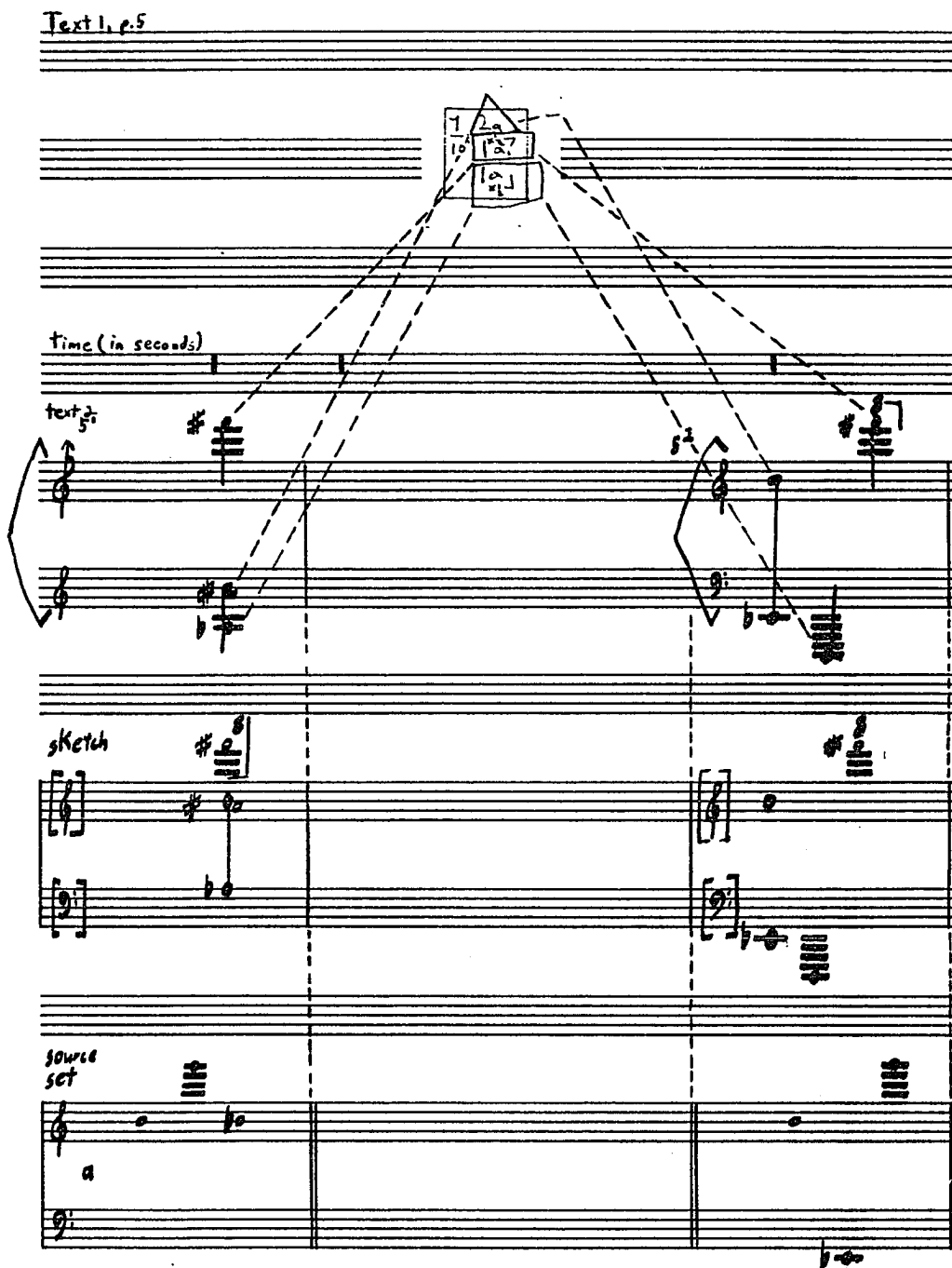


Fig. 5-17. Tudor, realization
of For Pianist, p. 5: version 2

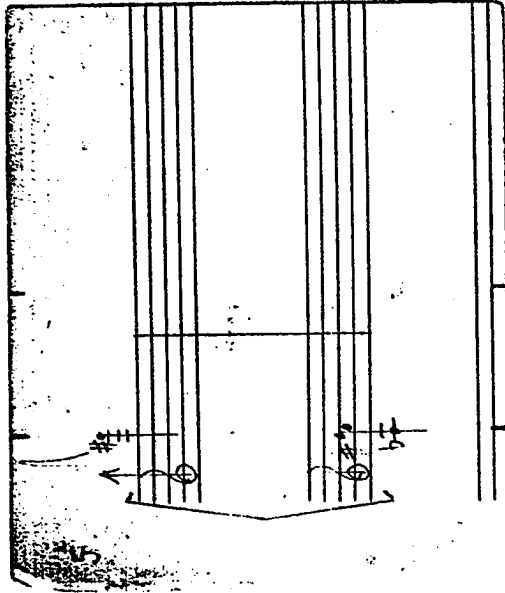
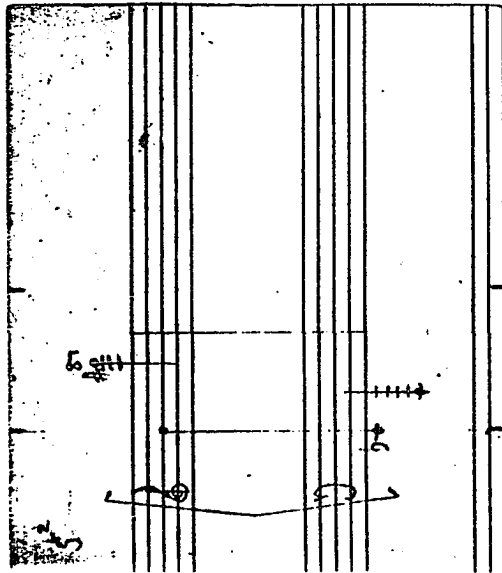


Fig. 5-16. Tudor, realization
of For Pianist, p. 5: version 1



Eb2-B5, first down to the D1 and then up to the F#7. And it is performed as a single gesture, since the same duration of .7 second mandates that the three sonorities will be played within a short span of time (Fig. 5-17, above).

Wolff, it will be remembered, wrote *For Pianist* in part to thwart Tudor's ability to plan ahead. In his realization, Tudor's proportional notation along a time-line and his placement of individual systems where they would be most quickly accessible went a considerable way toward meeting Wolff's challenge. But they did not solve all the new problems, the most challenging of which first appears on the second page of Wolff's score (Fig. 5-18 and analytic chart, Fig. 5-19).

Page 2 begins at system 3. The first sonority is C#4, notated as a harmonic. When the harmonics emanating from the pitch become audible, the performer is to begin reading system 4 (at the bottom of the page), whose total duration is 40 seconds. The durations of system 4 are entirely determinate, but the time at which the system commences -- the time at which the harmonics become audible -- is itself unpredictable, dependent on such factors as the particular instrument used and the dynamic level at which the C#4 is played. The problem facing the solo performer, therefore,

Fig. 5-18. Wolff, For Pianist, p. 2

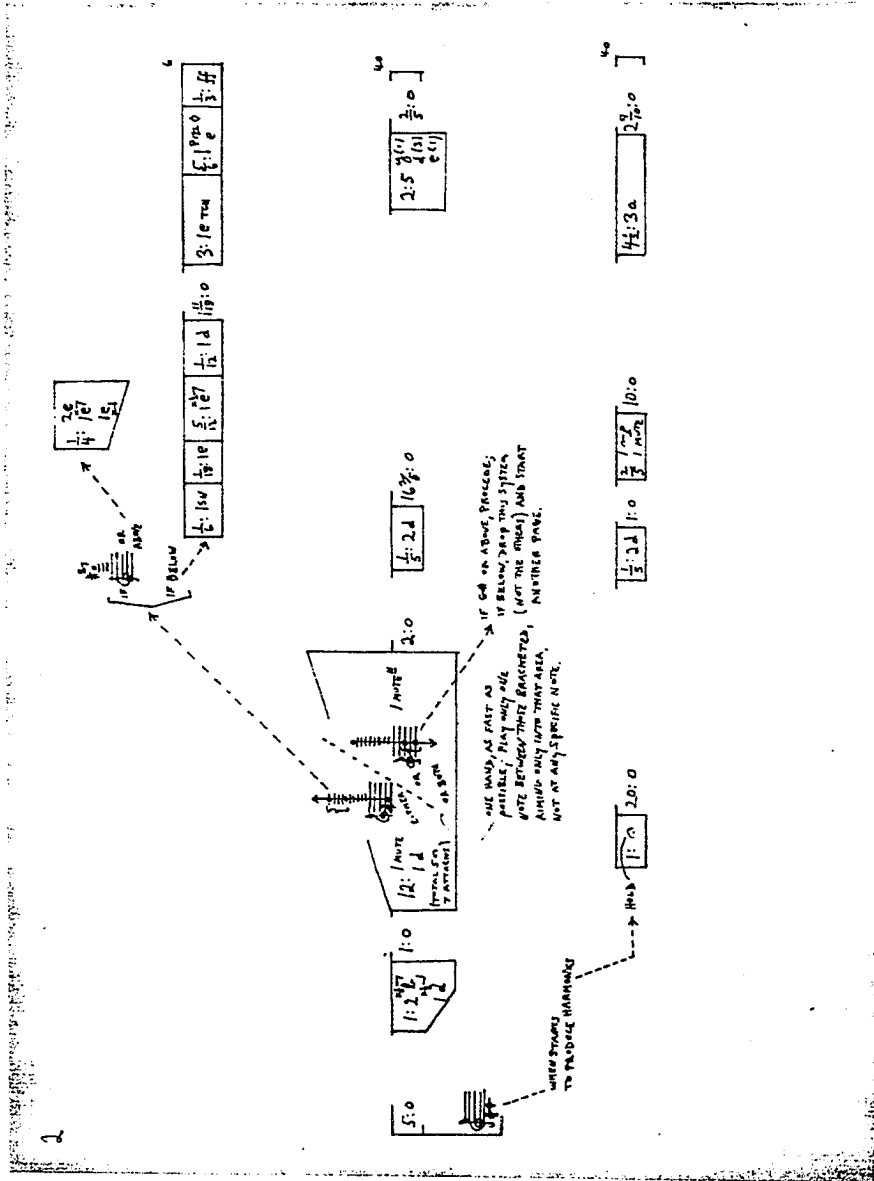


Fig. 5-19. Wolff, For Pianist, p. 2: analytic chart

Text 1, p. 2, systems 1-2

Time (in seconds)

Text 2, p. 2, system 1

system 2

Sketch

Source Set

Annotations: IF ABOVE, OR ABOVE, IF BELOW, ABOVE ff, BELOW ff, TCH, pizz, ff, SN, K, 16, 15, e #

Time markers: $\frac{1}{4}: 2e$, $\frac{1}{4}: 1e7$, $\frac{1}{4}: 1e1$, $\frac{1}{6}: 1sw$, $\frac{1}{19}: 1e$, $\frac{5}{12}: 1e7$, $\frac{1}{12}: 1d$, $\frac{11}{19}: 0$, $3: 1e TCH$, $\frac{1}{6}: 1 PIZZ 0$, $\frac{1}{3}: ff$

Fig. 5-19. Wolff, For Pianist, p. 2: analytic chart, continued

Text 1, p. 2, system 3

5:0

1:2 $\frac{4}{2}$ 1:0

12: / NOTE
[TOTAL 50
7 ATTACHED]

2:0

$\frac{1}{5}$: 2d 16 $\frac{2}{5}$: 0

WHEN STARTS TO PRODUCE HARMONICS

ONE HAND, AS FAST AS POSSIBLE. PLAY ONLY ONE NOTE BETWEEN THOSE BRACKETED, MOVING ONLY INTO THAT AREA NOT AT ANY SPECIFIC NOTE.

IF G# OR ABOVE, PROCEED; IF BELOW, DROP THIS SYSTEM (NOT THE SINGS) AND START ANOTHER PAGE.

Time (in seconds)

Text 2

sketch

source set

OR/AND

BELOW # DISCONTINUE

Fig. 5-19. Wolff, *For Pianist*, p. 2: analytic chart, continued

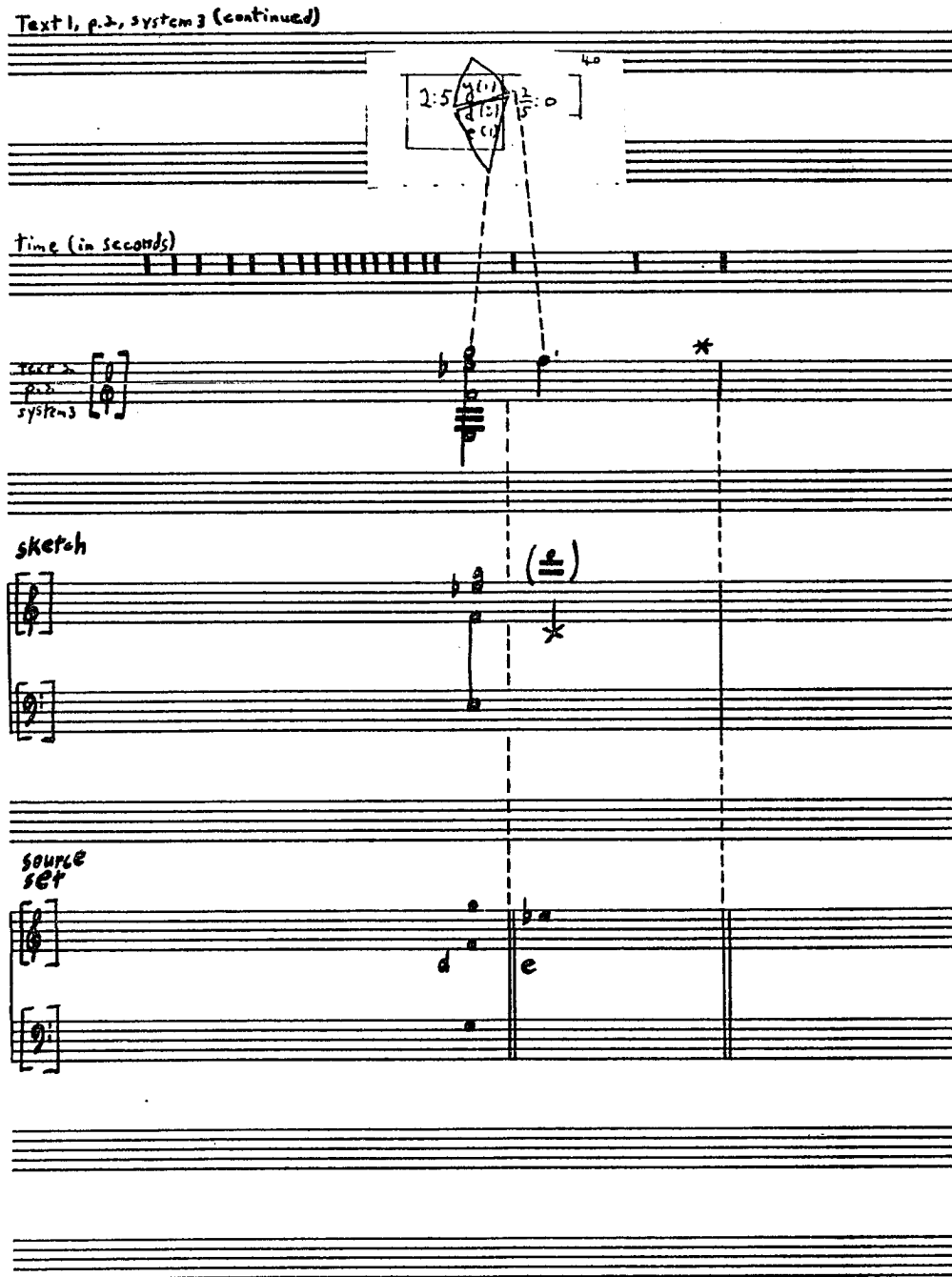


Fig. 5-19. Wolff, *For Pianist*, p. 2: analytic chart, continued

Text p. 2, system 4

Time (in seconds)

Text 2
p. 2
system 4
(movable track)

sketch

source set

40

To resolve this conflict between two standards of time -- between the determinate duration of the harmonics (a one-second fermata) and the ensuing silence (20 seconds) and the indeterminate time at which the total 21 seconds will commence -- Tudor notated his realization of Wolff's system 4 on a moveable, sliding track, affixing it to the bottom of page 2 of his realization (Fig. 5-20). Once the track was in place, it both reflected the point at which the harmonics become audible and the determinate passage of time which follows in Wolff's system 4. It enabled Tudor, upon perceiving the harmonics, whenever they began to emanate from the C#4 in system 1, to move the notation of the determinate durations in system 4 to the point at which they commence on his time-line. Furthermore, Wolff's score allows five seconds within which to play the C# before the next time-unit in system 1 begins, ample time in which to hear the harmonics and then move the track.

Tudor applied this solution to similar problems on pages 7 and 9 of *For Pianist*. For the other contingencies in Wolff's score, Tudor follows Wolff by notating them on separate systems in his realization. For example, on page 2, the third action in system 3 includes the requirement that the performer play, "as fast as possible," one otherwise unspecified key from within clusters of ten and eight keys, each cluster marked with braces ({} (see Fig. 5-19,

Fig. 5-20. Tudor, realization of For Pianist, p. 2

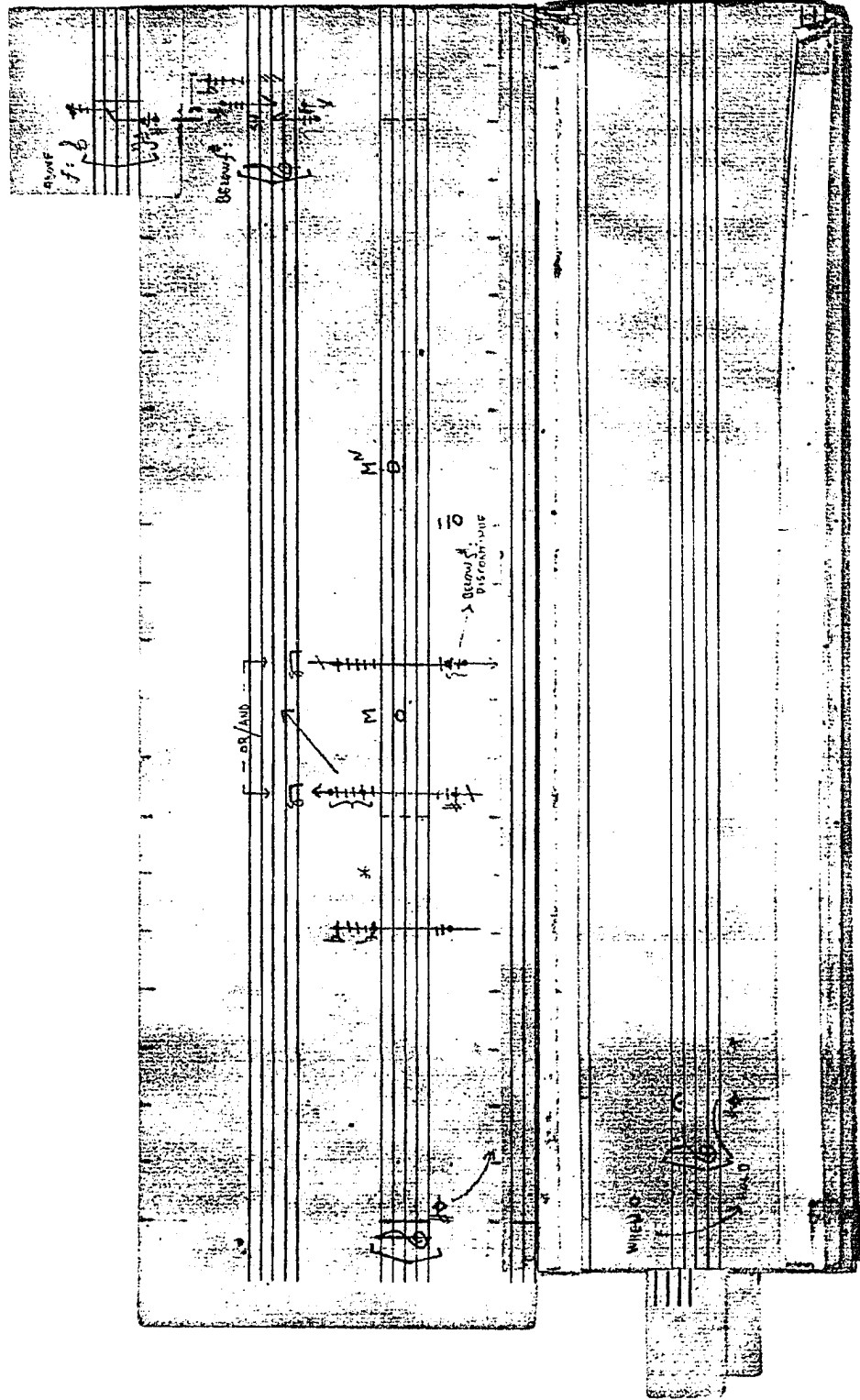
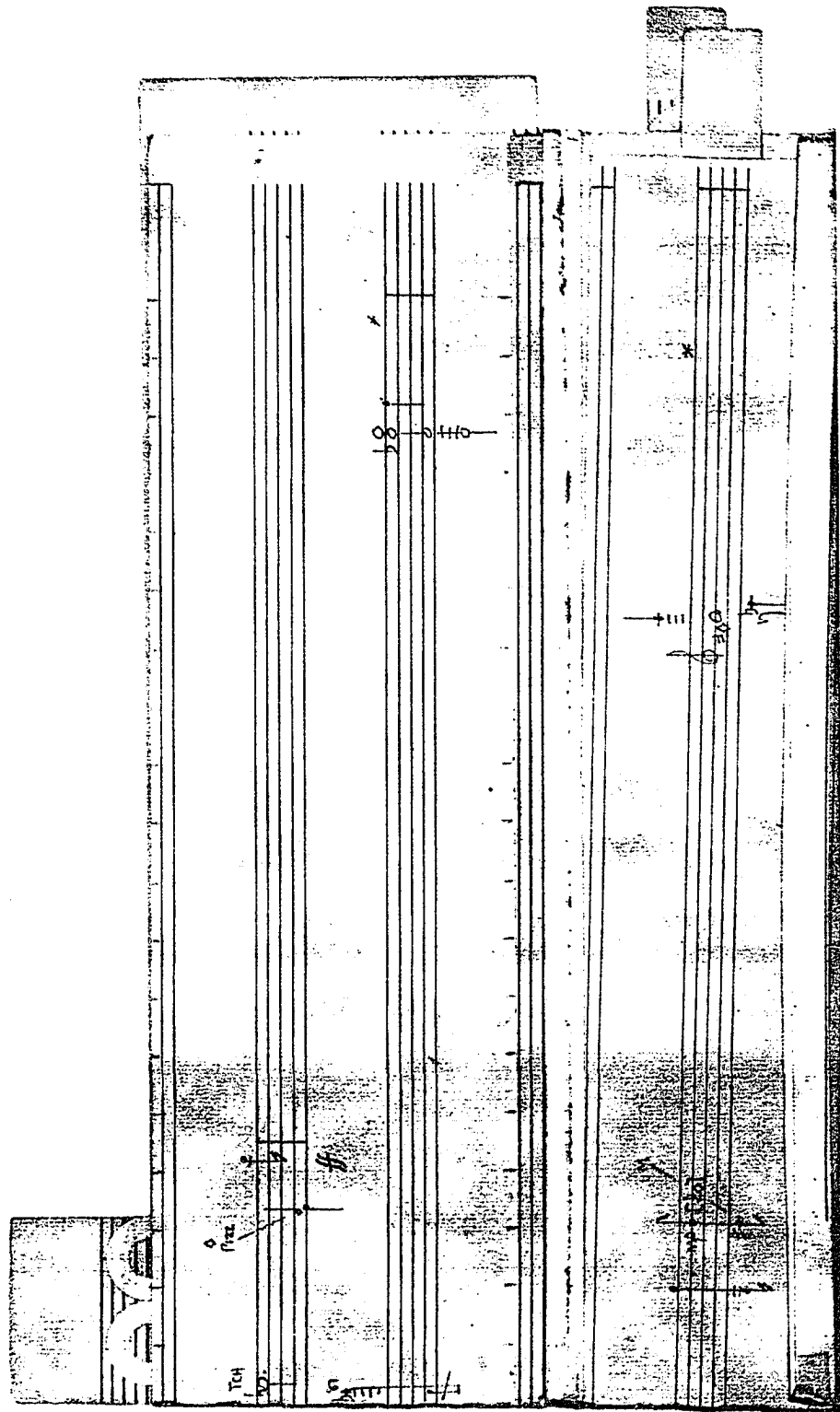


Fig. 5-20. Tudor, realization of For Pianist, p. 2, continued



above). Depending upon whether the key played lies above or below a specified key (F#7 in the first cluster, G#4 in the second), the performer continues along the same system, proceeds to one of two other systems, or discontinues playing from system 3 (though not from the remaining systems) and begins playing from a new page. In Tudor's realization, each of these possibilities is notated on a separate system (see Fig. 5-20, above).

Conclusions

Christian Wolff would come up with pieces which were like conundrums. . . . But I saw an advantage to writing out some of his scores.

David Tudor

Tudor once said to me that he performed from a composer's original notation whenever possible. Indeed, his copies of composers' scores are remarkably free even of fingerings and other common annotations for learning and performing a piece; most of them show nothing added except timings.³⁶ On another occasion, I asked what factors in Wolff's music prompted him to prepare a realization rather than read from Wolff's shorthand notation. Tudor answered,

³⁶ "Clean as a whistle" is how Tudor described the ideal condition of his performance material. Perhaps this should not surprise, since Tudor's sight-reading ability was little short of legendary (a score "could be black as sin and I could still play it"), and unmarked scores are a common attribute of skilled sight-readers.

. . . how many choices he offered. And the more choices he offered, the more it was necessary to write it out. In earlier works, he didn't give that possibility. But when you offer a plethora, when you have twenty-four different pitches you can choose from and it doesn't make any difference to him what they are...the point is, it makes a difference to you. It's a possibility that he didn't think of: that it would make a difference to the performer. That's where his criticism [of my advance planning] comes from, because I did decide that it was important. . . .

Some of his realizations, Tudor went on,

are made by notating all the choices that I would have, so that, if I were bored by having to repeat [something], I could change it instantaneously. But [Wolff's] scores are notated in time, and you're supposed to follow that time. . . . I had to know how time was delineated. And I would not accept a performance that happened by chance, just simply because I happened to read something on the spur of the moment, and missing something that I had to do.

Wolff himself simplified his notational technique in subsequent works in which he retained the principle of improvisation through contingency. Tudor, on the other hand, continued to prepare realizations addressing even more enigmatic notations that had begun to appear in the music of Wolff's teacher, John Cage.

Chapter 6

Indeterminacy: Cage, *Concert for Piano and Orchestra/Solo for Piano*

One cannot determine exactly what effect the notation causes -- thus, indeterminacy.

John Cage, 1960

Introduction

In the preceding three chapters I have examined Tudor's approaches (and in doing so I have tried to make the need for the plural form obvious) to those works by Feldman, Brown, and Wolff which posed unprecedented problems to the performer. And I have implied that during the 1950s there were very few performances of music by these composers in which Tudor was not involved. But it is with the music of John Cage that Tudor's name continues to be most often linked, more than twenty-five years after the end of his active career as a pianist.

Looking back, in 1970, Cage summarized his own role in the collaboration:

In all my works since 1952, I have tried to achieve what would seem interesting and vibrant to David Tudor. Whatever succeeds in the works I have done has been

determined in relationship to him. . . . David Tudor was present in everything I was doing.¹

Much later, in 1986, Cage made a remarkable interjection when Richard Dufallo began the standard recitation of names often grouped together as a school:

[Dufallo:] In terms of your relationship with those other two people that [*sic*] are associated with you, or you with them . . . Earle Brown and Morton Feldman . . .

[Cage:] The third one is Christian Wolff . . . And then the most important one was David Tudor.²

To understand Tudor's role, to learn how he "was present in everything [Cage] was doing," is the purpose of the final chapter of this study.

Cage was, of course, a prolific composer.³ And from 1951 to 1967 -- from the *Music of Changes* to his recording of *Variations II* -- Tudor gave the first and often only performances of all of Cage's post-1950 keyboard music as well as taking part in all the performances of Cage's works for instrumental and instrumental-electronic combinations.

¹ *For the Birds*, 178.

² *Trackings* (New York: Oxford University Press, 1989), 231; dots of ellipsis thus in source. The interview took place on Tuesday 8 April 1986. See also Cage's claim, made during an interview with the present author, that Tudor's "interest in puzzles invited the whole thing of indeterminacy," in Chapter 3, p. 59, above.

³ We can here connect two pertinent observations, Schoenberg's well-known dictum that Cage was not a composer but an inventor "of genius," and Beethoven's maxim that "genius is always prolific."

Tudor's early performances of Cage's music were chronicled in the Peters Catalogue of Cage's works to 1962.⁴ In fact, in the catalogue's lists of performances, Tudor's name appears more frequently than does that of Cage himself. In his foreword to the catalogue, Cage acknowledges Tudor's hand:

The frequent appearance of the name of David Tudor prompts an expression of gratitude to him for his untiring devotion to the study and performance of my music. However, it is not I alone who am grateful to him. Many other composers and listeners around the world are in his debt.⁵

It is in part because of the enormous number of Tudor's performances of Cage's music that I shall in this chapter focus on a single work, the *Concert for Piano and Orchestra* of 1957-58. But there are additional reasons which justify the restriction to this particular composition. The scope of the *Concert* was the largest of any of Cage's works since the *Music of Changes*. It was an encyclopedic summary of his compositional development as well as a forerunner of its immediate future.⁶

Furthermore, the pianist's part of the *Concert* is a compendium of notational techniques in experimental music (and not only that of Cage). In his foreword to the Peters

⁴ These have been supplemented in Appendix D, below.

⁵ Peters Cat., 5-6.

⁶ See Fig. 6-4, below. On Cage's several compositional techniques up to 1956, see Pritchett, *passim*. An expansion of Pritchett's dissertation was published in the autumn of 1993 under the title *The Music of John Cage* (Cambridge: Cambridge University Press, 1993 [*Music in the Twentieth Century* 5]).

Catalogue, Cage wrote that the works listed therein "represent all the various paths my musical thought has taken."

Those paths after 1950, and therefore germane to the *Concert for Piano and Orchestra*, were:

composition using charts and moves thereon (1951); composition using chance operations (1951-); composition using templates made or found (1952-); composition using observations of imperfections in the paper upon which it is written (1952-); composition without a fixed relation of parts to score (1954-); composition indeterminate of its performance (1958-).⁷

As a result, we have in the *Concert for Piano and Orchestra* the opportunity to consider Tudor's solutions to not one but a large number of notational problems, problems which in many cases are identical to those found in many of the other Cage works performed by Tudor but not discussed here.

Moreover, Text 2 of the *Concert* -- Tudor's performance materials -- constitutes Tudor's own most ambitious enterprise of the 1950s, for he prepared two separate distinct realizations of Cage's score. He has continued to use subsequent versions of his second realization on those rare occasions when he still performs at the piano. Tudor's view of his Text 2 is identical to Cage's view of Text 1: both texts are works "perpetually in progress."

⁷ Peters Cat., 5.

Background: Tudor and Cage in 1958

In 1958, three of Cage's friends and professional associates -- Robert Rauschenberg, Jasper Johns, and Emile de Antonio -- decided to give Cage his first wide exposure to an American audience since his adoption of chance techniques in 1951 by jointly producing a concert devoted entirely to Cage's music.⁸ Rauschenberg and Johns were working as window designers for New York department stores. They and other painters persuaded their dealers to purchase boxes at Town Hall in order to offset the production expenses of the concert, booked for 15 May 1958. The Stable Gallery exhibited and sold a selection of Cage's scores through 24 May, thereby precipitating another interrelation between new painting and new music: the selling of scores as works of art in themselves. Someone -- perhaps Tudor, who selected the program -- made the sensible decision to include not only Cage's recent music but a representative sampling of his work from the beginning, i.e. 1934. The concert was a retrospective of Cage's quarter-century of

⁸ The program of the concert concludes with the credit "Produced by Impresarios Inc. (E. de Antonio, J. Johns, R. Rauschenberg)." De Antonio had been director of the Rockland Foundation, an artistic enterprise located near the Gatehill Cooperative at Stony Point, New York, where Cage, Tudor, and M.C. Richards lived in the mid-1950s. De Antonio later turned to film-making; among his productions was the documentary study of contemporary American painters, *Painters Painting* (1972).

The following discussion of the concert is based on Tomkins, *The Bride and the Bachelors*, 126-29.

compositional activity, and as such it constituted a decisive event in the distribution of Cage's music, both early and what are now "middle-period" works. The newest of the latter group, the *pièce de resistance* concluding the concert, was the *Concert for Piano and Orchestra*, which Cage had begun sometime during the previous year (he dated the title page of the pianist's part "1957-58").

Genesis of the *Concert for Piano and Orchestra*

On 29 January 1958, Cage drafted a letter or program note about what he called a "Concerto for Piano and Orchestra" and which he described as "my work in progress." At this time, Cage had apparently completed the pianist's part, later preparing a fair copy in ink. But he had not yet composed the orchestra parts, and the draft shows that he thought the completion might not come before the fall of 1958.⁹ By the end of March, the *Concert* was sufficiently

⁹ "At the present moment[,] Jan 29, 58[,] I have nearly completed the part for the soloist, David Tudor. Having been composed in pencil, it requires being done in ink. The other parts much simpler in character will be done directly in ink. I contemplate composing parts for strings, percussion, brass & woodwinds, any of which may be used or eliminated in a performance. . . . I will assuredly have material ready for a performance in the Fall of this year." Cage's pencil manuscript of this draft is in the Tudor Collection. From the remark about having the material "ready for a performance in the Fall," it would seem that this is a draft of a letter to someone in Europe about the first performance of the *Concert* there, which took place in Cologne on Friday 19 Sept 1958; Tudor was the soloist, Cage the conductor. For the complete text of this draft, see Appendix A.

complete for Cage to write, in the preface to his performance instructions to the pianist, that the pianist's part was "to be played with or without any or all parts written for orchestral instruments."¹⁰

Although Cage later said that he consulted with each of the 13 instrumentalists who, with Tudor, took part in the first performance of the *Concert*, it seems that there was but a single general rehearsal, and that one on the day of the performance.¹¹ Cunningham, who conducted the ensemble at the Town Hall concert, does not recall many rehearsals.¹² And Tudor's performance plans show one plan for a rehearsal and another for the performance itself; both plans are dated "5/15/58."

The Twenty-five Year Retrospective Concert of the Music of John Cage, given on Thursday 15 May 1958, was reviewed by at least four New York newspapers.¹³ The *Times* also ran a

¹⁰ The performance instructions are dated "3/27/58."

¹¹ Cage, *A Year From Monday* (Middletown: Wesleyan University Press, 1967), 135-36.

¹² William Fetterman, *John Cage's Theatre Pieces: Notations and Performances* (Ph. D. diss., New York University, 1992), 328.

¹³ All four reviews appeared in editions of the following day. The critics were Ross Parmenter ("Music: Experimenter[:] Zounds! Sounds by John Cage at Town Hall") in the *Times*, p. 20; Miles Kastendieck ("Cage's Music Still a Phenomenon") in the *Journal-American*, p. 12; Louis Biancolli ("John Cage Gives Review of Work") in the *World-Telegram and Sun*, p. 25; Jay S. Harrison ("John Cage Retrospective Is Presented at Town Hall"), in the *Herald Tribune*, p. 12. Of the three critics who mentioned the work, only Harrison got the title of the *Concert* right (Parmenter and Kastendieck called it *Concerto*, even though the concert program is unambiguous about the title of the work, and Biancolli does

preview notice of the Town Hall concert in its Sunday edition of 11 May in which a photograph shows Tudor and Cage preparing a piano for performance of the *Concert*. The photograph provides some clues as to what was involved in the Town Hall performance, and is therefore worth describing. A "Slinky" toy is stretched from the piano frame to the raised lid on Tudor's right. To his left, an unidentified object resembling a bottle with stopper is visible. Numerous other preparations, mostly screws, are visible between the piano strings. Tudor is reaching for the "Slinky" with his right hand; with his left, he is holding an unidentified object (perhaps a bass drum beater). Cage is leaning on the right side of the piano, watching Tudor's demonstration.¹⁴

Description of Text 1

The pianist's part of the *Concert*, entitled "Solo for Piano," is a collection of 84 different notational tech-

not mention it at all), though he does not discuss the work or its performance in his review. Parmenter thought the *Concert* "presented some of the craziest mixed-up sounds ever heard on a concert platform." Kastendieck said only that "[i]n advocating sheer anarchy in performance, [the *Concert*] may have established a kind of evolutionary cul-de-sac."

¹⁴ "A Whistle, a 'Slinky' and a Bunch of Screws," photograph by Sy Friedman, in the *New York Times*, Sun 11 May 1958, p. X9, with the caption "These, too, make music which will be heard in a retrospective concert of the works of John Cage, left, at Town Hall Thursday. David Tudor tests the 'prepared' piano; the composer listens." Clipping in the Tudor Collection.

niques distributed across 63 large (42.8 x 27.4 cm., 11 in. x 17 in.) pages. The first page (Fig. 6-1) uses three of these techniques, one of them, labelled *C*, appearing twice. Cage described each of the pages as "a single system," but this is misleading, since it implies that the contents of each page are in some way systematically related or to be grouped together in performance. This is hardly the case, even by Cage's account. His description of the "Solo for Piano" in the Peters Catalogue states unequivocally that "the pianist is free to play any elements of his choice, wholly or in part and in any sequence." And in his notes for the recording of the 1958 Town Hall concert, Cage wrote "There is no rhythmic structure nor is a page a separate unit."¹⁵ Instead, each of the 84 notational techniques constitutes a discrete graphic object whose coordinates (or, more simply, visual and spatial dimensions) may be plotted

¹⁵ Peter Cat., 31, and notes to the reproduction of the "Solo for Piano", 51, in *The Twenty-five Year Retrospective Concert of the Music of John Cage*.

The entire Town Hall concert was recorded by George Avakian and directly distributed by him as an album of three long-playing records, still available (George Avakian, 795 West 245 St., Riverdale, N. Y. 10471). Negotiations between Avakian and Wergo Records are currently (June 1993) under way for reissuing the recording on compact disc. The album was part of a series of events -- including the Town Hall concert itself, the Tudor-Cage recording *Indeterminacy* discussed in this chapter, Cage's residency as a Fellow of the Institute for Advanced Studies (later Institute for the Humanities) at Wesleyan University and the subsequent publication, by Wesleyan University Press, of Cage's first collection of writings, *Silence* (Cage 1961) -- that established Cage as an important if controversial, rather than marginal and eccentric, figure in contemporary American music.

Fig. 6-1. Cage, Concert for Piano and Orchestra: Solo for Piano, p. 1

A 169

C

B

6-4

4-1

C

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in order to obtain information for preparing a performance. It is for this reason that Tudor referred to the 84 techniques not as systems but as *graphs*, and I shall do likewise here.

Cage labelled the graphs alphabetically A through CF. In his work notes, and even in his first realization of the "Solo for Piano," Tudor referred to the 84 graphs by these letters and by the page on which a particular graph is found in Cage's score. This was to facilitate not only location but identification, since Cage used a number of graphs several times throughout the score. We have seen, for example, that Graph C appears twice already on the first page of the "Solo for Piano". When working with graph C 1, therefore, Tudor identified the two forms as Ca 1 and Cb 1, respectively.

The "Solo for Piano" begins with a Key to reading the 84 graphs according to some general conditions stated at the outset:

Each page is one system for a single pianist to be played with or without any or all parts written for orchestral instruments. The whole is to be taken as a body of material presentable at any point between minimum (nothing played) and maximum (everything played), both horizontally and vertically. A program made within a determined length of time (to be altered by a conductor, when there is one) may involve any reading, i.e., any sequence of parts or parts thereof.

The remainder of the Key consists of instructions for reading each graph, although we shall see that these are by no means always clear.

Morphology of Text 2

Tudor prepared two distinct realizations of the "Solo for Piano." Furthermore, he prepared two separate but related versions of his second realization. The first realization was that used for the premiere of the *Concert for Piano and Orchestra* at the Town Hall concert on 15 May 1958.

Chronology of the First Realization

The premiere of the *Concert for Piano and Orchestra* was marred both by the behavior of some of the members of the 13-piece orchestra and by the calculated disruptions by one segment of the audience near the end of the performance.

Cage described the orchestral antics as follows:

After a general rehearsal, during which the musicians heard the result of their several actions, some of them - not all - introduced into the actual performance sounds of a nature not found in my notations, characterized for the most part by their intentions which had become foolish and unprofessional.¹⁶

"Foolish and unprofessional" is an accurate assessment of such moments in the recorded performance as when one of the tuba players begins playing the four-note ostinato of the "Dance of the Adolescents" from *Le Sacre du Printemps*, sounds of a nature found nowhere in Cage's notations.

¹⁶ Cage's account is part of story number 17 in both "How to Pass, Kick, Fall, and Run" (*A Year from Monday*, 136) and the recording of *Indeterminacy*. George Avakian describes the audience disruption in his notes to the Town Hall recording, on which it is clearly audible.

The *Concert for Piano and Orchestra* was repeated on Sunday 25 May, when it was performed twice, once at the beginning and again at the end of another, shorter, concert of Cage's music given at the Village Vanguard. Both performances consisted of considerably abbreviated versions of that played at the premiere at Town Hall. But they differed from each other as well. The first version was listed as *Concert for Piano and 4 Instruments*, the second as *Concert for Piano, Voice, and 4 Instruments* with Arline Carmen, who also sang two of Cage's songs for voice and (closed) piano, *The Wonderful Widow of Eighteen Springs* (1942), and the vocalise *A Flower* (1950).¹⁷ The voice part in the second performance of the *Concert* at the Vanguard was in fact a new work entitled *Solo for Voice* (1958), the text of which was a collage of excerpts from Gerard Manley Hopkins, Friedrich Schnack, L. Dufour, Huang-Po, the Lankavatara Sutra, and Goethe.¹⁸

¹⁷ Carmen had sung *The Wonderful Widow of Eighteen Springs* and the "Duo" in *She Is Asleep* at the Town Hall concert. Although Carmen performed with Tudor and Cage several times during the 1950s -- in September 1954, for example, she and Tudor recorded a group of songs by Wolpe for Columbia Records (ML 5179, rel. 1957, reissued under various numbers until del. 1976) -- she was apparently a replacement for Elizabeth Pharris, who is listed as contralto soloist in both the publicity flyer and the announcement cards of the Town Hall concert.

¹⁸ The text is reproduced in Kostelanetz, *John Cage* (New York: RK Editions, 1974, orig. publ. New York: Praeger Publishers, Inc., 1970), 131.

It is quite possible that for the Village Vanguard concert there was no rehearsal at all. There is no record of a rehearsal in Tudor's notes and, with the exception of *Carmen*, the performers had all participated in the Town Hall premiere.¹⁹

The occasion of Tudor's next performance of the *Concert for Piano and Orchestra* was Cunningham's new dance "Antic Meet," first performed on Thursday 14 August 1958 at the 11th American Dance Festival, held in New London, Conn. For the first time, Cage conducted the orchestra.

A little over a month after the premiere of "Antic Meet," Tudor and Cage gave the European premiere of the *Concert* on Friday 19 September, as part of a concert in the series *Musik der Zeit* given under the auspices of West German Radio Cologne. This time, Cage attempted to circumvent the kind of problems with the orchestra which had attended the Town Hall concert.

In Cologne, hoping to avoid this unfortunate state of affairs, I worked with each musician individually and the general rehearsal was silent. . . . [T]he result was in some cases just as unprofessional in Cologne as in New York. I must find a way to let people be free without their becoming foolish. So that their freedom

¹⁹ The instrumentalists were Melvin Broiles, trumpets; Albert Kaufman, clarinet; Frank Rehak, trombone; Don Butterfield, tubas in F and B-flat. Cunningham again was the conductor. Of these musicians, Rehak and Butterfield were particular favorites of Cage and Cunningham, and were two of the performers in the premiere of Cage's *Theatre Piece* on Saturday 7 May 1960. Butterfield later took part in the recordings of Feldman's *Durations III*, part of Brown's project to record music by Cage, Feldman, Wolff, and himself for Time/Mainstream Records.

will make them noble. How will I do this? That is the question.²⁰

All of the performances discussed in the preceding paragraphs derive from a single source, Tudor's Text 2/*Concert for Piano and Orchestra*. I shall restrict my discussion of that realization to its general features, and especially to those which will shed light on Tudor's second realization, Text 2/*Solo for Piano*.

Reconstruction of Text 2/*Concert for Piano and Orchestra*

Tudor's first step in preparing the realization was to tabulate all occurrences of each of the 84 graphs according to the page number(s) on which they appear in Cage's score. Appendix B shows each of the 84 graphs identified by its letter(s) and followed by the page number(s) on which it occurs. Some pages in the list do not completely correspond to those in the score. For example, Tudor writes "55-57" for graph CA, which graph in fact appears on pages 55-56.²¹

²⁰ "How to Pass, Kick, Fall, and Run," *A Year from Monday*, 136, and *Indeterminacy*, story 17.

²¹ Tudor's list reveals that Cage's multiple uses of the same graph diminished as new graphs were used, though there is no systematic reduction of the number of times a graph may appear in Cage's score. Graph A, for example, appears 6 different times, on pages 1, 5-6, 45-47, 49, and 53; graph C appears only twice, both times on page 1; graph F appears only once; the list shows that Cage used graph M on pages 9, 19-20, 22-23, 30, and 44. But by the time he reached graph BA, Cage used few of the remaining graphs (BB-CF) more than once, and only one of them, graph BK, appears three times, on pages 49-50, 52, and 53.

Having mapped out the locations of the 84 graphs in Cage's score, Tudor next needed to decide whether to use all of the graphs or to make a selection from them. Possibly for reasons of predetermined performance length, Tudor chose the latter course. His basis for selecting graphs was the inclusion of at least one of each "graph type," that is, of each of the notational techniques found in the score. By surveying the graphs according to his list of their occurrences (see Appendix B), Tudor could quickly note not only Cage's multiple uses of the same graph but those graphs which were, in Cage's words, "varieties of others." In eliminating these varieties, Tudor found a total of 63 different graph types, each of which he used once in his realization.²² He listed these 63 graphs, along with periods of silence with which the graph contents would interact and timings for both graphs and silences, in a sketch for his Performance Plan for the Town Hall premiere. This sketch is shown in Fig. 6-2. The order of graphs is in retrograde relation to their appearance in Tudor's realization itself. This suggests that Tudor did not make his selection of graphs simply by beginning at graph A on page 1 of Cage's score -- in fact, that graph was not used at all -- but worked backwards from near the end of the score at page 61 (which is blank and therefore silent), finally

²² This total only coincidentally matches the number of pages in Cage's score.

Fig. 6-2. Tudor, realization of Cage, Concert for Piano and Orchestra: sketch for performance plan

				5.45	21.25	2.40	7.15
				1.30	18.45		
				9.15			
							5.20
61	SILENCE	S I.	16-17 T	.30			S
59-60	CE	.30	16 U	.50		.75	S
57	CC	1.	15 SILENCE				S I.
			[11-12 G	.10]			
	CD	.30	[9-10 P	.50]			S
56-57	DX BX	.20	[8 K	.15]			S
55-56	BZ	.30	5-7 J	.40		.75	
	BU CG CA	1.30	[4 H	.70]			
54-55	BT	1.30					S
52-53	BO	.15					
51-52	BA	1.30					S
50-51	BN	.10	(5)				
50	BJ	.10				18.30	
49	A	.05				7.15	
[47-49	AO	1.]	S .20			25.45	
43-44	AT	.10					
42	DA	.05					
41	SILENCE	S I.					
40	AY	.15	(3)				
37-38	AX	1.					
36	H	.40					S
34-36	B	1.20					
32	SILENCE	S I.					
31	AC	.15					S (1.15)
29-31	I AA AA AS	1.45	1.20				S .20
27	O	1.20	1.				S
21-22	AC AE	.40					S
19-21	YZ X AD AG AP AR	1.20	(1.15)				

arriving at graph H on page 4. Furthermore, while all the graphs in the sketch were incorporated into the performance plan for the Town Hall concert, that plan included some graph readings which are not on this list, e.g. graph H 50. The performance plan for 15 May 1958, together with a second plan used for the rehearsal held earlier in the same day, are shown in Fig. 6-3. While both plans show a duration of 23'15" (+), the sketch in Fig. 6-2 above seems to indicate an overall duration of 25'45", consisting of 18'30" of graph readings plus 7'15" of silence. If this is in fact the meaning of the calculation (which appears on the right side of the sketch), then the general duration of the Town Hall performance had been decided by the time Tudor prepared this sketch (see under Chronology of the First Realization, p. 208, above). To be sure, the sketch does not match the final performance plan, though it is close enough to justify my assertion that it is a sketch for that plan. Aside from several deviations from the plan, the principal difference between sketch and performance plan is that the timings in the former seem to be discrete, that is, they are durations of each graph or combination of graphs which they accompany, whereas the timings in the performance plan are incremental to 23'15"+.

Once selected, the graphs in Text 1 had to be read according to the Key provided in Cage's preface. Tudor made his content sketches, took measurements of the dimensions of

Fig. 6-3: Tudor, realization of Cage, Concert for Piano and Orchestra: performance plans for rehearsal and concert of 15 May 1958

REHEARSAL		PERFORMANCE	
5/15/58		5/15/58	
10	42-44 BA AT 13.50	4H	42-44 BA AT 13.40
4H	S 14.10	S	S 13.50
S	44-51 A AR H (BJ) 14.30	5J	45 AL 14.
5J	51-52 BR 15.50	S	S 14.10
S	S 16.20	8K	49-51 A AK H 14.25
8K	54-55 BT BY 17.50	9-10 P	51-52 BR 15.45
9-10 P	55-57 BU CB CA 19.20	10-12 G	S 16.
11-12 G	55-56 BZ 19.40	S	52-53 BD 16.15
S	56-57 BX BX 20.	16 U	53-54 BW 16.30
16 U	57 CD 20.30	S	54-55 BT BY 18.
S	57 CC 21.30	16-17 T	55-57 BU CB CA 19.30
16-17 T	S 22.	S	55-56 BZ 19.50
S	59-60 CE 22.30	19-21 YZ AD AG AF AB 6.30	56-57 BX BX 20.10
19-21 YZ AD AG AF AB 6.50	S 23.	S	57 CD 20.40
S	62 CF 23.15	21-22 AC AF 7.05	57 CC 21.40
21-22 AC AF 7.25		S	S 22.10
S		29 I 7.35	59-60 CE 22.40
27 D 8.35		29-31 AA AR AS 8.55	S 23.
S		S 9.10	62 CF 23.15
29 I 9.10		31 AC 9.25	
29-31 AA AR AS 10.30		S 10.10	
S		34-36 B 11.10	
31 AC 11.		36 H 11.40	
S		S 11.50	
37-38 AV 12.40		37-38 AV 12.30	
S		S 12.40	
40 AY 13.05		40 AY 12.55	
S		S 13.25	

the graphs he had selected, and transcribed the results to loose folios of miniature-sized staff paper, gathering these in a small ring binder notebook. This format enabled Tudor to vary both the internal order and the overall duration of his subsequent performances of the realization simply by adding, removing, and rearranging the pages in the notebook. The several performance plans for Tudor's realization reflect a number of different orderings of the graphs, though these orderings do not appear to be random. For example, the two Village Vanguard performances were based on abbreviated forms of the plan for the Town Hall concert, as was the European premiere in Cologne. And while the version used for Cunningham's "Antic Meet" uses additional graph readings, it follows the basic format, even the general --though reverse -- order of graph readings, of the plan for the first performance of the *Concert*. The plans for each of these performances identify the graphs and show the timings in terms of the commencement of each page of the realization and, in most cases, the duration of the page, and the total duration of the performance. The performance timing itself was determined in advance and according to practical circumstances.

Duration and Timing

Tudor's original realization, prepared for the Town Hall premiere of the *Concert for Piano and Orchestra*, is

somewhat longer than 23'15" duration. My imprecise description is unavoidable. In his note to the trombone part reproduced in the Town Hall album, Cage wrote:

The conductor's part consisted only of directions for transforming clock time into actual performance time. On this occasion, his choices from among the many variations of clock time offered by his part produced a performance of 23'15".²³

But elsewhere Cage referred to the performance duration in more general terms of 20 minutes.²⁴ Furthermore, Fetterman has timed the Avakian recording of the performance at approximately 23'40" and has reconstructed that portion of the conductor's part used by Cunningham corresponding to a duration of 23'45".²⁵ Both of Tudor's own Performance Plans for the Town Hall premiere, one for the performance itself and another for the rehearsal held earlier in the same day, show the final entry in the column of timings to be "23.15," seemingly bearing out Cage's claim. But these timings refer to attack points rather than cessations. (The corresponding page in Text 2 itself, a realization of graph CF 62, contains the timing ".10 - .15," which seems to refer to the duration required or allowed for performing the page.)

²³ Cage, note to the reproduction of the "Solo for Trombone," *The Twenty-five Year Retrospective Concert of the Music of John Cage*.

²⁴ Foreword to Conductor's Part and note to the reproduction of p. 51 of the "Solo for Piano" in *The Twenty-five Year Retrospective Concert of the Music of John Cage*.

²⁵ *John Cage's Theatre Pieces*, 327-29.

For the Village Vanguard performances, Tudor used two abbreviated versions of his realization. His Performance Plans shows that the first version was 4'45"(+) in length, the second 4'50"(+). Both versions were based on graph readings which had been used for the Town Hall concert.

The two performance plans labelled "Antic Meet" show a modified approach to Tudor's reading of Cage's score. In addition to graphs used for his previous three performances, Tudor now added readings of other graphs from Text 1 to produce two new versions of Text 2/*Concert for Piano and Orchestra* (not a new "realization," since the performance plans are identical in format to the previous ones). Almost certainly, this was for practical reasons. The two plans show mutually different content in terms of graphs and their attack points but very similar duration ("26. [minutes]" and "26.30," respectively). This strongly suggests that Tudor prepared two new versions of his realization for the early performances of "Antic Meet," either version being suitable for a dance 26-27 minutes in duration.²⁶

²⁶ "Antic Meet" is a dance in 10 parts, 3 of which are called "Sports and Diversions", after Satie's *Sports et divertissements* (1914). Cunningham selected the motto for the dance from Dostoyevsky: "Let me tell you that the absurd is only too necessary on earth." (footnote continued on next page)

It is possible that Tudor prepared one of the performance plans for a rehearsal of the "Antic Meet" premiere and the other for the performance itself, as he did for the Town Hall concert. But unlike the earlier plans, those for "Antic Meet" make no reference to a rehearsal.

The Performance Plan for the European premiere of the *Concert* in Cologne shows a duration of 13 minutes (+) and that Tudor again used new graphs from Cage's score; that is, graphs differing from those used to prepare all four previous performances of the *Concert*.

Tudor continued to use his first realization of the *Concert for Piano and Orchestra*, notably on those occasions when he performed the work with orchestra. The final performance plan, headed "Antic Meet Phoenix 2/16/60," was made for the Cunningham Company concert of Tuesday 16 February 1960 at the Phoenix Theatre in New York.

Concert for Piano and Orchestra, Second Realization

Tudor's subsequent performances of Cage's "Solo for Piano" form the principal topic of this chapter. The basis for the performances was a second realization of Cage's score. And it is to this realization, Tudor's Text 2/*Solo for Piano*, that I shall henceforth limit my discussion.

Several of my reasons for doing so are practical. Tudor used his first realization for a relatively brief period, from the premiere of the *Concert* in 1958 to about the beginning of 1960, whereas he has continued to use his second realization from its inception in 1959 to the present

time.²⁷ Text 2/*Solo for Piano* constitutes Tudor's most ambitious and extensive preparation of any composer's work (Tudor continues to add or subtract material from the realization in order to vary it in performance). Tudor also recorded this realization, not once but twice. The first recording was made in 1959 as an accompaniment (if that is the word) for Cage's lecture *Indeterminacy*. The second recording, of Text 2/*Solo for Piano* alone, was made in 1982 in Amsterdam but released only in May 1993. Both recordings are currently available on compact disc.²⁸ A third reason is less practical and more personal: it has been my long-standing belief that the 1959 recording of *Indeterminacy* documents the first great culmination of the Tudor-Cage collaboration.

²⁷ Tudor's recent performances of Text 2/*Solo for Piano*, all with the Orchestra of the S. E. M. Ensemble conducted by Petr Kotik, include Frankfurt, 4 September 1992; Berlin, 8 May 1993; and New York, 4 December 1993.

²⁸ *Indeterminacy: new aspect of form in instrumental and electronic music* (Folkways FT-3704 [1959, reissued 1992 on Smithsonian/Folkways SF 38404/5]) and *Ear-Rational Records ECD 1039* (1993). In my notes to the later recording, written before undertaking the present part of this study, I misidentify the realization: both *Indeterminacy* and the Amsterdam recordings are of Tudor's second realization, Text 2/*Solo for Piano*. There is no "third version," as I claim in the notes. Less excusable is my rendition of the subtitle of the earlier recording as "new aspect of form in contemporary music." Such are the hazards of a rush job.

Background: Cage's Lectures in Temporal Structures

In fact, the second realization of Cage's *Concert for Piano and Orchestra* may have had its genesis with Tudor himself. While still in Europe after the *Musik der Zeit* concert in Cologne on 19 September 1958, Cage was preparing a lecture to be delivered the following month at the Brussels World's Fair. Recalling that, several years earlier, Tudor had suggested he write a lecture consisting solely of stories, Cage wrote down thirty stories culled from numerous sources. But the lecture was not simply a potpourri of anecdotes, for Cage added an element derived from his lecture "Changes" given the previous month at Darmstadt but stemming as far back as the end of the 1940s, when he wrote his "Lecture on Nothing" for New York's Artist's Club.²⁹ The lecture is to be read, i.e. performed, in five parts which are themselves based on the following premise:

There are four measures in each line and twelve lines in each unit of the rhythmic structure. There are forty-eight such units, each having forty-eight measures. The whole is divided into five large parts, in the proportion 7, 6, 14, 14, 7. The forty-eight measures of each unit are likewise so divided.³⁰

²⁹ The lecture was not published until 1959, when it appeared in the August number of *Incontri Musicali*. It was reprinted in *Silence*, 109-26.

³⁰ Foreword to "Lecture on Nothing," *Silence*, 109. Cage wrote that the layout of the text, in four columns across the page, was "to facilitate a rhythmic reading". This seems misleading, for Cage goes on to state that "Each line is to be read across the page from left to right, not down the columns in sequence. This should not be done in an artificial manner (which might result from an attempt to be too strictly faithful to the position of the words on the

In other words, Cage applied to a verbal text the same kind of rhythmic procedures as had formed the structures of his musical works of the 1940s. And although the "Lecture on Nothing" was to be read without musical accompaniment, it included enough verbal repetitions of its own to force one member of the audience at Cage's first reading to leave the room.³¹ The lecture also included what was to become one of Cage's most well-known and important manifestoes: "I have nothing to say and I am saying it and that is poetry as I need it."

A few years later, for a symposium held at the Juilliard School of Music in 1952, Cage wrote another lecture. Instead of an internal rhythmic structure, Cage employed overall external durations for each of the lecture's four parts. Furthermore, Cage said, in each of the parts of the "Juilliard Lecture,"

. . . I applied processes of collage and fragmentation to texts which I had written earlier. There was in addition some new material. While I was lecturing, David Tudor performed a number of pieces at the piano, compositions by Morton Feldman, Christian Wolff, and myself. To coordinate our program, we used chronometers. I began the first part at 0'00", the second at 12'10", the third at 24'20", the fourth at 36'30".

page), but with the *rubato* which one uses in everyday speech."

³¹ "One of the structural divisions was a repetition of a single page in which the refrain 'if anyone is sleepy let him go to sleep' some 14 times. Jeanne Reynal, I remember, stood up part way through, screamed, and then said, while I continued speaking, 'John, I dearly love you, but I can't bear another minute.' She then walked out." Cage, notes to *Indeterminacy*.

David Tudor's program was made without my knowing anything about it in advance.³²

During the 1958 Darmstadt season, Cage and Tudor gave a joint recital on Wednesday 3 September followed by a series of three *Studios*, or lecture-recitals, on Saturday 6 September, Monday 8 September, and Tuesday 9 September. Two of these lectures were in traditional format, that is, written and read as explicative texts. The third lecture (though it was the first one delivered) was written in response to Steinecke's request that Cage discuss the *Music of Changes*.³³ As in the Juilliard lecture of 1952, Cage wrote a

³² Introduction to "Juilliard Lecture," in *A Year From Monday*, 95-111. The layout of the text is similar to that of the "Lecture on Nothing" and is similarly misleading.

The lecture was given on Thursday 27 March 1952 as part of the International Federation of Music Students 6th Annual Symposium of Contemporary Music. The program of the entire symposium does not identify the specific pieces Tudor performed for the occasion.

The date of the Juilliard lecture precludes the possibility that Cage's lecture-cum-music technique was derived from such genres as the beat poetry/jazz performances of the mid-1950s. There is, moreover, no evidence that Cage was later influenced by this trend or even that he heard much of this performance art. Cage retained a distaste for jazz, at least that preceding the "free jazz" of the 1960s, objecting to its regular, and therefore predictable, metric framework.

³³ The three lectures were published, in the order in which they were delivered at Darmstadt, under the collective title "Composition as Process" in *Silence*, 18-56. In addition to "Changes" (18-34), the other two are "Indeterminacy" (35-40), and "Communication" (40-56). "Indeterminacy" here refers to the second lecture of the group, not to the later one written for the Brussels Fair. It was probably due to this double use of the title that the latter lecture was published, as *Indeterminacy*, only in recorded form, not in any of Cage's books where, instead, it is found only in parts: many of the stories are scattered, along with numer-

text to be performed within a predetermined, external duration. This time, he added an internal temporal structure as he had done in the "Lecture on Nothing." But in the new lecture, the spaces between the verbal text were filled with music.

. . . I decided to make a lecture within the time length of the *Music of Changes* (each line of the text whether speech or silence requiring one second for its performance), so that whenever I would stop speaking, the corresponding part of the *Music of Changes* itself would be played. The music is not superimposed on the speech but is heard only in the interruptions of the speech - which, like the lengths of the paragraphs themselves, were the result of chance operations.³⁴

Indeterminacy

Following the 1958 Darmstadt season and the *Musik der Zeit* concert in Cologne, Cage needed to prepare yet another lecture, this time for the Brussels World's Fair beginning in October. Having to work quickly, Cage combined techniques from both the Juilliard lecture of 1952 and "Changes." He expanded the collage technique of the Juilliard lecture by gathering thirty stories whose relation to each other was nothing more concrete than that Cage found them

ous others not included in *Indeterminacy*, throughout *Silence*, and the first 30 stories are gathered in one place, forming the beginning of "How to Pass, Kick, Fall, and Run," in *A Year From Monday*, 133-40.

³⁴ Introduction to "Composition as Process: I. Changes," in *Silence*, 18-34. For his part of the performance, Tudor used a cue sheet showing the end and beginning of each portion of Cage's spoken text and in which Tudor noted both the duration of the intervening pauses and those measures of the *Music of Changes* he played during them.

interesting and memorable. From the Darmstadt lecture, he modified the technique of internal temporal structure; perhaps because, unlike "Changes," the Brussels lecture was unaccompanied by Tudor's piano-playing, Cage spread the reading of each story over a duration of one minute. The result was a thirty-minute text in which the discernible coherence of both content and continuity was systematically obscured.³⁵

On Thursday 9 October 1958, Cage read these stories in a lecture-recital given as part of the *Journées internationales de musique expérimentale* at the Brussels Fair. He entitled his lecture "Indeterminacy: new aspect of form in instrumental and electronic music." Although Cage's reading was unaccompanied, it was followed by performances of works by Cage himself (*Variations I* [1958]), Wolff (*Duo II for Pianists* [1958]), both works performed by Tudor and Cage, then by Tudor's performances of music by Nilsson (a work identified in the program only as *Pièce*) and

³⁵ But not removed entirely; that would come later, with the mesostics and such sound-text works as *Mureau* (1970) in which both semantics and syntax were pulverized.

In his account of the genesis of *Indeterminacy* Cage wrote, "Late in September in 1958 . . . I set about writing [a] lecture which I was obliged to give a week later at the Brussels Fair." Notes to *Indeterminacy*. The short time available to Cage would explain why this first version of the lecture was to be read without music.

Stockhausen (*Klavierstück XI* [1956]).³⁶ Stockhausen, who was in the audience, had already offered to publish Cage's lecture, sight unseen; it appeared in volume 5 of *Die Reihe*.³⁷

When Cage returned to the United States the following March, he was asked to deliver a lecture at Columbia Teachers College. Possibly because of the short notice of the invitation, Cage decided to expand his Brussels lecture by adding sixty new stories to the original thirty. His method was the same as that used to prepare the first version: "The continuity was not planned. I simply made a list of all the stories I could think of and checked them off as I wrote them."³⁸ And for the new version of his lecture, Cage made an even more substantial change: he asked Tudor to devise an accompaniment to the lecture, now ninety minutes long. Furthermore, Tudor "was free to make any conti-

³⁶ The Cage and Wolff works are identified on the program only as *Variations* and *Duo for pianists*, respectively. Tudor and Cage performed both works on their two-piano recital in Darmstadt on 3 September; I am here assuming that it was the second and newer of the two Wolff *Duos* that was given in Brussels. The Nilsson work was probably *Quantitäten*, which was completed in March 1958 and whose first performance Tudor had given in Darmstadt just a month before (Thursday 9 September) the Brussels concert.

³⁷ Vienna: Universal Edition, 1959; Engl. ed. Bryn Mawr: Theodore Presser Company, 1961, 83-120. The volume was subtitled "Reports/Analyses." Slightly altered, Cage's lecture became the first part (pp. 133-38) of "How to Pass, Kick, Fall, and Run." See note 34, above.

³⁸ Cage, notes to *Indeterminacy*. The second sentence of Cage's account is a bit misleading, since he had written out stories 1-30 for the first version of the lecture, then added the remaining 60 stories to make the expanded version.

nuity of his choice."³⁹ The result was Tudor's second realization of Cage's *Concert for Piano and Orchestra*. In April, Cage and Tudor gave the lecture-performance at Columbia.⁴⁰

Several days after the performance, Cage gave a copy of the lecture to de Antonio, who suggested that the ninety stories be published. Tudor added his suggestion that they be published in the form of a recording. Fortuitously, Cage learned at this time that Moses Asch, the founder and president of Folkways Records, wished to record some of his music. Asch accepted Cage's suggestion to record the Columbia version of the lecture, and he and Cage scheduled a recording date sometime in the spring or summer, prior to Tudor's return to Europe, which probably took place in the latter half of August.⁴¹

³⁹ Cage, notes to *Indeterminacy*.

⁴⁰ Peters Cat., 32. I have been unable to ascertain the date of the Columbia lecture with more precision. There is no program of the occasion in the Tudor Collection, nor have I found any references to the lecture in the press.

⁴¹ Again, I have not yet been able to determine the precise date of the recording session. The Smithsonian Institution, which has reissued the recording, has no information (such as correspondence or production logs) in its files on the Folkways series which would shed light on the matter. (Lori Elaine Taylor, Smithsonian Institution, letter to author, 1 June 1993.)

In the absence of more precise information, I offer the following hypothesis. Tudor was still in the United States as late as 14 August, when he and Cage accompanied the Cunningham Company performance(s?) at the American Dance Festival at New London. And he had returned to Europe by 25 August, when he took part in the opening concert of the 1959

A frequently repeated story has it that Tudor and Cage were recorded in separate rooms during the session. This may be true, but I have found no decisive evidence that this was the case. What is certain is that they coordinated their individual performances by using stopwatches as chronometers. Cage read most of his stories at the rate of one per minute, slowing or accelerating the pace as the length of a story demanded, hence the pervasive sense, on the recording, of uniform implacability connecting the 90 stories.⁴² Some of them are amusing, some truly funny, some

Darmstadt Festival. On the other hand, there is a gap in the chronology of Tudor's performances in 1959 between Sunday 7 June, when he gave a recital at the Village Gate with the cellist David Soyer, and Saturday 1 August, when he accompanied a voice recital in Spring Valley, N. Y. If Tudor made an additional trip to Europe sometime in June-July 1959, prior to the Darmstadt Festival in August, the recording of *Indeterminacy* may have been made in the spring, soon after the performance at Columbia Teachers College.

⁴² "There was no rehearsal beforehand involving both the reading and the music," Cage wrote of the session, "for in all my recent music (since *Music for Piano*) there are parts but no score. Each one of us rehearsed alone and employed a stop-watch during the actual recording session. Each did what he had to do, bringing about a situation which neither had foreseen." Cage, notes to *Indeterminacy*.

It took the recording engineer, Mel Kaiser, some time to get used to the pace of Cage's reading. After Kaiser had set the recording levels, Cage wrote, "I had no sooner started speaking than he stopped me. I said, 'What's the trouble?' He said, 'You shouldn't pause the way you do between words; you should just speak naturally.' I said, 'But this is what I have to do. I tell one story a minute, and, when it's a short one, I have to spread it out. Later on, when I come to a long story, I have to speak as rapidly as I can.' He said, 'O.K., I'll just keep my mouth shut.'" In fact, Cage sometimes goes considerably over the one-minute limit. This hardly weakens the effect of his reading, since nothing in either his or Tudor's performance

serious; some are parables, some are Zen koans. Regardless of the individual character of a story, and with one now-embarrassing exception, Cage reads each in a normal but impassive tone of voice, so that the focus is on the process rather than the result. Another way of saying this is that the point of a story is secondary, the reading of it primary.⁴³

Tudor again used his second realization of the *Concert*, his *Text 2/Solo for Piano*. Several times during the 90 minutes of the recording it sounds as though Cage raises his voice in involuntary response to a sudden loud sound in the music. Such moments usually occur when the tempo of the reading is slow (a shorter story, in other words). When the story is longer -- for example, story number 9, about a Cage-Tudor concert at the University of North Carolina -- Cage is too busy trying to get the long story read in one minute to be distracted by the louder sounds that obscure his voice. In story 14, on the other hand, a sudden burst

carries any audible indication that an internal temporal structure is at work; it merely bears out Cage's claim that he was never entirely comfortable in a performance situation.

⁴³ The exception is story 78 ("Now giving lecture on Japanese poetry . . ."), which Cage reads in a stereotyped Japanese accent.

at a high volume seems to prompt Cage to read in a louder voice, reflexively, as it were.⁴⁴

Tudor and Cage continued to perform "Indeterminacy" on at least six occasions following their recording of the work.⁴⁵ Later, Cage detached the first thirty stories which had comprised the initial version of the lecture and placed them at the beginning of yet another (unaccompanied) sound-text work made "as the irrelevant accompaniment for Merce Cunningham's cheerful dance, 'How to Pass, Kick, Fall, and Run'" (1965).⁴⁶

⁴⁴ Cage has just read the words "it ends by becoming melodic" when Tudor sweeps the bass strings of the piano, sustaining the resulting sound with pedal. Cage reads his next line, "Christian Wolff prophesied this to me years ago," at a higher volume, then lowers his voice again to complete the story.

Nonetheless, Cage wrote that "After the first side was made, [Kaiser] said, 'I'm beginning to get the idea. I think we'd better do it over again.' What had happened was that he had tried to get some kind of balance, rather than just letting the loud sounds occasionally drown out my voice." Cage, notes to *Indeterminacy*.

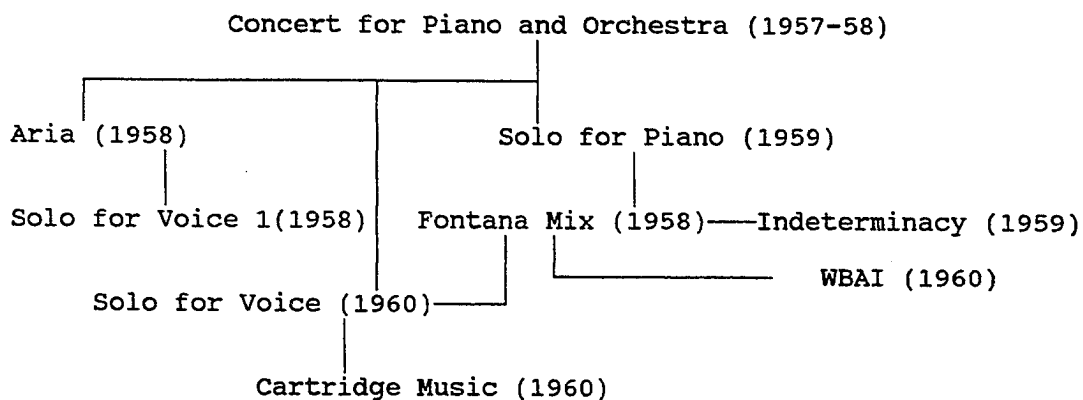
⁴⁵ Peters Cat., 32.

⁴⁶ The description of both dance and accompaniment is found in Cage's introduction to the text in *A Year from Monday*, 133-40. In accompanying the dance performances, Cage did not read all of the stories, but made a selection of 18 or 19 of them.

For the recording of *Indeterminacy*, Cage replaced one story (number 22, originally about non-linear reading both of newspapers and the music of Christian Wolff) with another about the short notice on which he had to prepare the expanded version of the lecture. He continued to replace some of the original stories with new ones in later performances of the lecture with Cunningham's dance.

Finally, Cage's *Concert for Piano and Orchestra* itself became the source of a nexus of Cage's subsequent compositions written between 1958 and 1960 (see Fig. 6-4).

Fig. 6-4. A flow-chart showing compositions derived from or performable with the *Concert for Piano and Orchestra*, based on entries for these works in Peters Cat.



Demarcation of Duration

For his second realization of Cage's score, Tudor was asked to provide ninety minutes of music, a duration almost three times that of any previous version of the *Concert*. His first step in solving this problem was to map out the 90 minutes in discrete units of seconds. Tudor's mapping derives from a scale of 1-30 and, when we recall that 30 minutes was the original length of Cage's lecture, suggests that Tudor multiplied the 60 seconds of each of the 30 minutes in order to find a comparable time frame for his new realization. Fig. 6-5 shows that there were two stages in Tudor's computations.⁴⁷ In col. 2 of the example, Tudor has multiplied each number in col. 1 by 200. Eventually, he encountered a problem, reaching the necessary 5400 (seconds) before reaching the last figure in col. 1. Coming up short by "3 minutes" (in terms of the scale 1-30), Tudor divided 5400 by 30 to find the suitable multiplier 180 and then repeated his computations. The new results, shown in col. 3 of Fig. 6-5, proved successful, since $30 \times 180 = 5400$. (If my hypothesis about the significance of the figures 1-30 in col. 1 is correct -- if they represent 30 minutes -- then,

⁴⁷ In his notes to the recording of *Indeterminacy*, Cage wrote that the Brussels reading of his lecture was read without accompaniment. Fig. 6-5 as well as other documents in the Tudor Collection suggest that on at least one occasion, Tudor did perform some music (not only by Cage) during, rather than following, Cage's reading.

Fig. 6-5. Tudor, realization of Cage, Concert for Piano and Orchestra/Solo for Piano: tables showing conversions of 1-30 to 200-5400 and 180-5400

0	0	0	
1	200	180	6
2	400	360	I
3	600	540	BS"
4	800	720	v
5	1000	900	C
6	1200	1080	iv p v
7	1400	1260	
8	1600	1440	
9	1800	1620	
10	2000	1800	
11	2200	1980	
12	2400	2160	
13	2600	2340	
14	2800	2520	
15	3000	2700	
16	3200	2880	
17	3400	3060	
18	3600	3240	
19	3800	3420	
20	4000	3600	
21	4200	3780	
22	4400	3960	
23	4600	4140	
24	4800	4320	
25	5000	4500	
26	5200	4680	
27	5400	4860	
28		5040	
29		5220	
30		5400	

1 BV 53
 2 BK 52
 3 BS 52
 4 I 46
 BT 54

1, 9, 11, 12, 13

since the figures in col. 3 represent seconds, a 3:1 proportion obtains between the 2 sets of figures.)

Selection of Graphs

It was Tudor's next step that qualifies Text 2/*Solo for Piano* as a second realization, rather than another version of Text 2/*Concert for Piano and Orchestra* simply augmented in duration. Tudor decided not to make another selection from his readings of the sixty-three graphs in Cage's score as he had done for his previous performances of the *Concert*. Instead, he took a new approach to reading Cage's notation by selecting only those graphs which in his view "had the possibility of being read as single icti," that is, those graphs whose contents could be played as series of discrete and separate attacks.⁴⁸ There were, he found, 53 graphs which conformed to this criterion, only 10 less than the number of graphs (63) used in Text 2/*Concert for Piano and Orchestra*. (There are, in fact, a number of graphs common to both realizations, but the decisive difference is Tudor's

⁴⁸ Tudor says that his new approach may have stemmed from performing the first realization with ensembles which included a disproportionate number of brass players, who are notorious for their disposition toward the higher dynamic reaches. Discrete sonorities enabled the pianist to maintain a sharper profile in such surroundings. The principal distinction between the two approaches is, in Tudor's words, between "cursive graphs and single icti." The distinction is evident throughout the recordings of the two realizations.

interpretation of the graphs, whether previously used or not, in his second realization.)

Determination of Content

Next, Tudor prepared any necessary new content sketches of graphs not previously used in his first realization. The contents of the second realization were determined in much the same way as the first: content sketches show transcriptions of Cage's graphs to more standard notation, lists of figures reflect calculations of the more morphological graphs such as the line-and-point drawing of graph BB 45. These work notes indicate that Tudor's readings of each graph are, as before, cumulative and complete; all icti in each graph are present in Tudor's content sketch for the graph. Tudor again read each of the graphs in its entirety.

At this point, Tudor had determined the overall *content* of his new realization. The results were compiled in a Master Table on five pages of typescript, the first page of which is shown in Fig. 6-6. The first column of the Master Table shows the attack point, col. 2 identifies the graph on which the reading is based plus the ordinal number of Tudor's reading, and col. 3 shows the page on which the graph occurs or begins in Cage's score.⁴⁹ For example, under minute 0, the second entry (the first, parenthetical

⁴⁹ The few exceptions to this system, i.e. graphs which commence on the page preceding Tudor's numbering, are noted below.

Fig. 6-6. Tudor, realization of Cage, *Concert for Piano and Orchestra/Solo for Piano*: first page of Master Table showing performance plan for Text 2/Solo for Piano

(.0 ⁰)		381.2 ⁶	BS-3 52	756.5	BI-5 50
24.3	EV-1 53)	381.6	I-4 46	756.59	BS-6 52
27.65	T-1 41	384	B-5 34	764	AI-2 36
40.5	I-1 46	389.8	BC-3 47		BS-7 52
42.65	B-1 9	405.12	AC,AE-2 21	786.88 ¹³	BR-5 51
47.66	B-1 34	419	EK-2 52	797.5	Hb-1 50
	AC,AE-1 21			797.6	T-6 16
64.55 ¹	B-1 1	425.25 ⁷	CA-3 55	810	BT-3 54
71.12	B-2 34	440	I-5 46		B-5 9
72	BZ-1 55	441	BV-6 53		CD-1 57
81.15	BS-1 52	442.2	T-3 41	812.2	T-2 12
83.85	BY-1 54	447.34	U-3 16	822	T-6 41
90	BB-8 45	450.1	BC-4 47	835	I-9 46
	BB-11 45	462.86	BR-3 51	837.5	EK-6 52
97.65	BC-1 47	468	BZ-4 55		
108	BZ-2 55	474	BS-4 52	840.2 ¹⁴	BS-8 52
112.5	AT-1 39			868	N-3 9
		494 ⁸	BS-5 52	877.5	B-6 9
121 ²	I-2 46	504	EZ-5 55	882	B-8 34
128.3	BB-1 53	506.4	B-2 55	892.2	BS-9 52
139.66	B-1 23	511.24	U-1 16	894.5	N-4 9
144	BZ-3 55	516	EK-3 52		
145.5	T-1 16	521.38	CE-3 59	911.5 ¹⁵	Ca-2 1
(160.15	BV-2 53)	526.5	I-6 46	913	I-10 46
162	BI-1 50	540	B-4 9	925.71	BR-6 51
165	BC-2 47		BI-2 50	928.5	T-7 16
167	BB-2 53		B-6 34	929	BV-10 53
175.5	B-2 9			932.7	BB-3 53
176.08	BY-2 54	562.3 ⁹	T-4 41	935	EK-7 52
		592	AB-2 20	936	BZ-7 55
187.25 ³	T-2 41	595	BI-3 50	945.8	AB-4 20
189	BT-2 54	596.4	T-1 12		
197.3	BV-3 53			971.5 ¹⁶	BS-10 52
206.6	BV-4 53	(600.4 ¹⁰)	BV-7 53)	990	BE-4 45
214.7	T-2 16	612.5	EK-4 52	1005	BV-11 53
216	BR-1 51	617.14	BR-4 51	1008	BZ-8 55
	BT-1 54	621	P-1 9	1012.5	P-3 9
217.2	AB-1 20		BT-4 54	1016	BV-12 53
222.53	AI-1 36	643.42	AC,AE-3 21		
223.45	CE-1 59	644.1	T-4 16	1026 ¹⁷	BT-5 54
237.63	BY-3 54	645.5	I-7 46	1030.9	AV-1 37
				1039.75	BY-4 54
255.5 ⁴	B-3 34	(655.2 ¹¹)	BV-8 53)	1040	I-11 46
260.69	CE-3 59	665.9	AB-3 20	1043	K-1 43
263.1	BV-5 53	675	CD-12 57	1062.5	B-9 34
270	AC-1 31	680.5	N-1 9	1066	T-8 16
	BB-7 45	697.5	B-3 55	1066.5	CA-3 55
288.8	AE-1 56	702.96	U-2 16	1072.37	AC,AE-4 21
		703.5	BI-4 50	1080	B-7 9
307.1 ⁵	B-4 34	703.6	T-5 41		BR-7 51
309.2	AO-1 20	710	EK-5 52		BZ-9 55
311.4	T-3 16	711.2	B-7 34	(BV-13 53)
312	I-3 46	(712.6	BV-9 53)		
319	B-1 55	713	I-8 46	1088 ¹⁸	BV-14 53)
322	EK-1 52	715.5	P-2 9	1094	EK-8 52
327.8	BS-2 52			1097	T-7 41
330.75	CA-1 55	744.83 ¹²	CE-4 59	1097.55	CA-4 55
337.5	B-3 9	748.8	N-2 9	1119	T-8 41
354.86 ⁶	BR-2 51	751.5	BC-5 47		
		755.8	T-5 16	1143 ¹⁹	BB-4 53
		756	BZ-6 55	1164.56 ²⁰	AI-3 36

entry ".0 BV-1 53" was not used in the realization), "24.3 T-1 41," means that Tudor's first reading of graph 1 as that graphs appears on p. 41 of Cage's score begins at attack point (ap) 24.3 seconds. The next entry, "27.65 I-1 46" means that the attack point of Tudor's first reading of graph I, p. 46, is ap 27.65 seconds, and so forth.

Column 2 of the Master Table identifies the source in Cage's score of the content of each attack point in Tudor's realization. But the table gives no indication why the individual readings occur at specific attack points or, for that matter, how Tudor generated the attack points themselves. And it provides no clue as to why Tudor's first two readings from graph BB 45 -- both occurring at ap 90 seconds -- are, according to the Master Table, the 8th and 11th, rather than the first two, readings of that graph. The solution to these puzzles lay in Tudor's method of determining the internal temporal structure of the new realization, and it represented an even more radical departure from his previous approach to Cage's score.

Temporal Structure

Tudor once said to me that in making his new realization (what I have called *Text 2/Solo for Piano*) he "superimposed" the icti of the 53 graphs he had selected from Cage's

score.⁵⁰ For some time -- quite a long time, in fact -- I could not discover what he meant by this term. Two questions stood in the way: why do the readings pertaining to a single graph not appear in consecutive order in the realization and whence their specific attack points?

Later, I figured out the first part of Tudor's process. In the Master Table, the results of the graph readings are not entered complete and in consecutive order -- the basis of the first realization -- but split apart and distributed throughout the 90 minutes of the new realization. But I still did not know what method, if any, Tudor had used to determine either the order or the precise attack point of each reading. Playing around with some numbers, I began to divide the *position measurement* of each ictus in a graph in Cage's score into its corresponding attack point number in Tudor's realization. This I was able to do because in many cases Tudor's work notes include lists of both measurements and attack points for a given graph. I began with graph B 9, the first graph used in the realization as it is heard on the recordings *Indeterminacy* and *Solo for Piano*.

The results were astonishing. In almost every case, for every graph for which both kinds of evidence survive, I found a number which serves as a multiplier constant to that

⁵⁰ This is another procedure explicitly permitted by Cage. In his note to the reproduction of p. 51 of the pianist's part in the Town Hall album, Cage wrote that "the notations . . . may be superimposed (though they need not be)."

graph, that is, a multiplier which, when applied to each position measurement, yields a product identical to the corresponding attack point in Tudor's realization. This is what Tudor meant by the superimposition of graph readings, and it explained two crucial aspects of the internal temporal structure of Text 2: the placement of each of the 787 attack points of the graphs, and the order of occurrence of individual icti from Text 1, since this order is not always identical to that in Cage's score but dependent on the position measurement of the ictus in a graph multiplied by the constant -- or so I thought at this stage of my reconstruction. It even explained an otherwise anomalous reading of Text 1. The final ictus in graph B 23 measures 23.2 inches, which, when multiplied by the 232.758 constant to the graph, yields the attack point 5400.032, .032 seconds beyond the terminus of Text 2 at 5400 seconds. Consequently, this is the sole reading of Cage's score omitted in Tudor's new realization.

Later, I discovered that Tudor's approach, though similar to the one I had assumed, was in fact much more straightforward.⁵¹ That is, to determine the attack points of his readings of Cage's graphs within the 90-minute time frame of his realization, Tudor measured the area or length of each graph, using whatever means of measurement he found

⁵¹ I already had some doubts about the authenticity of my constant multipliers, since many of them run to 3 or more decimal points (the 232.758 above is a common example).

appropriate to a graph's individual form. Usually a decimal ruler, or sometimes a circular slide rule, would suffice (given the basis of his new approach to reading Cage's score, Tudor no longer needed the map reader he had used to read the "cursive" notation to measure the irregular curved lines of, say, graph A 1). This gave him an area or length A for each graph. Next, Tudor measured the position of each ictus within the graph, usually in terms of its distance from the beginning of the graph. He then multiplied each position measurement by the total duration of his realization (5400 seconds) and divided the result by the A number. The quotient was the ap , in Tudor's realization, of the ictus in Cage's score. In other words, what was constant to each graph was not a multiplier but a divider which was, in fact, the area or length, depending on particular morphology, of the graph itself (I had approached the problem from the back door, so to speak). In this way, Tudor devised the internal temporal structure of his new realization in terms of both specific attack points and order of occurrence of the source material from Cage's score.⁵²

⁵² Tudor's method can be represented formulaically (which Tudor did not do): attack point (ap) = position measurement (p) x total duration (D) 5400 ÷ area or length (A), or, $p \times D \div A = ap$.

The Two Versions of Text 2/*Solo for Piano*

To prepare the new realization itself, Tudor typed up his list of attack points and their sources in his Master Table, then transcribed the appropriate reading from his content sketch or list of calculations to his performance score at its location along the time scale.

But this transcription took two forms. In his Master Table, Tudor had all the information needed to write out his new realization. And it is possible that he intended to use the entire contents of the Table, even though the total 789 attack points prescribed an extremely dense result. However, Cage wrote that, after accepting the invitation to deliver a lecture at Columbia, he began to feel he had insufficient time to write out the new, longer version of the Brussels lecture.⁵³ This means, of course, that Tudor had no more, and probably less, time to prepare his accompaniment. He had prepared a Master Table for a new realization of the *Concert* but did not have time to transcribe the entire contents to a performance score in time for the Columbia lecture. Instead, he made a selection of entries from the Master Table. He divided the contents into two

⁵³ "When I got a letter from Jack Arends asking me to lecture at the Teachers College, I wrote back and said I'd be glad to, that all he had to do was let me know the date. He did. I then said to David Tudor, 'The lecture is so soon that I don't think I'll be able to get all ninety stories written, in which case, now and then, I'll just keep my trap shut.' He said, 'That'll be a relief.'" Cage's anecdote forms story number 23 on *Indeterminacy* and is printed in *A Year from Monday*, 20.

parts by copying 472 entries in the Table into one small packet of paper and the remaining 315 entries into another packet. (The packets were made of small sheets of paper torn from larger sheets and folded to form bifolios.) These packets, which I have labelled *a* and *b*, are, then, mutually complementary; together, they contain all the information in the Master Table.

Tudor transcribed the contents of the entries in Packet *a* to 90 folios of loose staff paper torn from larger sized sheets. The resulting performance score was Tudor's first version of *Text 2/Solo for Piano*, and was used to accompany Cage's lecture at Columbia Teachers College. He then began to write a second version of the realization, if for no other reason than to use up the "leftovers," so to speak, which he had copied from his Master Table to Packet *b*. This version is also on small staff paper (Passantino "Midget" Filler paper punched with 2 holes for binding). But after thirty-two pages, the manuscript breaks off. Tudor then began again, writing out the entire second version on 90 pages (45 folios) of blank, rather than staff paper. The result, Tudor's second version of *Text 2*, was used for the recording of *Indeterminacy* and it is the version heard in Tudor's 1982 recording of the *Solo for Piano* alone.

The reason for the incomplete copy of the second version seems clear: blank paper offered advantages in the notational technique Tudor used in his new realization. The

contents of both versions of the second realization, consisting as they do entirely of discrete events, no longer needed a continuous staff of lines and spaces but only a means of denoting the time scale. In both versions of the new realization, each page equals one minute; with two systems per page, each system equals thirty seconds. To enter each graph reading proportionally, Tudor could simply place the entry at its place in the time line, no matter the notational form it took. And in the second version, if a reading called for more or less standard notation Tudor used a rastrum (as Stravinsky had done long before). If the notation of a reading was in graphic or verbal form, Tudor could also dispense with the lines and spaces. Standard staff notation became simply one more available means of notating a realization.

In reconstructing Tudor's process of preparing both versions of *Text 2/Solo for Piano*, I traced the derivation of his 472 readings of the graphs in *Text 1* used in the first version and his first reading of each graph used in the second. Using his Master Table, Packets *a* and *b*, work sheets, sketches, and two performance scores, I was able, in other words, to identify and describe Tudor's means of determining both the content and attack point of each sonority in his realization. Here, however, I shall discuss only some of the general problems posed by the notations in *Text 1* and Tudor's solutions to them in *Text 2*, beginning with

the most straightforward notations in Cage's score and proceeding by degrees to the most abstract. Then, I shall comment on some of the performance problems Tudor posed for himself in his second realization of Cage's *Concert for Piano and Orchestra*.

Some Notational Aspects of Text 1

Some graphs present no particular problems of reading or interpretation. In the family of graphs labelled *B*, for example, the notation is fairly standard -- that is, it consists of noteheads on a staff -- and the pitch content is partly determinate. The only ambiguity lies in individual pitch identity, due to the "floating" clef signs: if both clef signs are present at a given sonority, they are accompanied by numbers signifying how many noteheads in that sonority are to be read in each clef; specific assignment of clef is indeterminate. All the *B* graphs in the score are notated in this manner (it is why they are called *B*).

Tudor's first reading of graph *B 9* is the first entry in his second version of *Text 2/Solo for Piano*. The graph is shown in Fig. 6-7.

Fig. 6-7. Cage, *Concert for Piano and Orchestra/Solo for Piano*: graph B 9

In the first sonority, 4 of the 6 noteheads are to be read with the treble clef, the remaining 2 with the bass.

Tudor's content sketch sorts out the pitch identity of the 27 sonorities in graph B 9 (Fig. 6-8). Although the sketch dispenses with Cage's numerical dispositions, the determination of pitch content is clear. For sonority 1, the four noteheads read with the treble clef are, reading from bottom, noteheads 1, 3, 4, and 5, or G#2, B#5, Eb5, and Gb5. The remaining two noteheads 2 and 6 are therefore read with the bass clef as Cb2 and E5. In Tudor's realization, the entire sonority is renotated enharmonically as

Fig. 6-8. Tudor, realization of Cage, Concert for Piano and Orchestra/Solo for Piano: content sketch for graph B 9

The image displays a handwritten musical score for piano and orchestra. It consists of multiple staves, with the piano part on the left and the orchestra part on the right. The notation includes various notes, rests, and dynamic markings such as 'p' (piano) and 'f' (forte). There are also some numerical markings like '8' and '9' interspersed within the staves. The score is presented in a sketchy, handwritten style, typical of a composer's working draft.

B2/G#2/C5/D#5/E5/G5, entered to show its ap 40.5 (Fig. 6-9).⁵⁴ In subsequent readings of graph B 9, Tudor replaces Cage's numerous ledger lines with *8va sopra* and *bassa* signs to facilitate reading; this alteration is unnecessary in the case of sonority 1.

The next attack point in Tudor's realization, however, results from a more complicated graph reading -- or, more accurately, readings, since the source is both graph AC and graph AE as these appear on pp. 21-22 of Cage's score (Fig. 6-10). This is the only instance of Tudor's reading two graphs in combination in this version of *Text 2/Solo for Piano*. Tudor's basis for his combined reading is the following passage in Cage's Key: "The whole is to be taken as a body of material presentable at any point between minimum (nothing played) and maximum (everything played), both horizontally and vertically."

Both graphs contain elements of standard notation: pitch notation in AE, sequential notation in AC. The Key to each graph reads as follows: [AC] "Noises. Of those notated, play only that number given. I = Interior piano con-

⁵⁴ This first reading of graph B 9 is, of course, the first sound heard in Tudor's performance on *Indeterminacy* and on his 1982 recording of the same version. On the later recording, however, the time scale is obscured; the first sound is heard immediately, without the preceding silence prescribed in *Text 2*.

The lighter notation in the reproductions of Tudor's realization reflects print-through from a following page in *Text 2* and later additions, made in pencil, of material drawn from Tudor's first version of *Text 2/Solo for Piano*.

Fig. 6-9. Tudor, Text 2/Solo for Piano, p. 1. The first notation, the hexachord B2-G#2-C5-D#5-E5-G5, reflects Tudor's first reading of graph B 9.

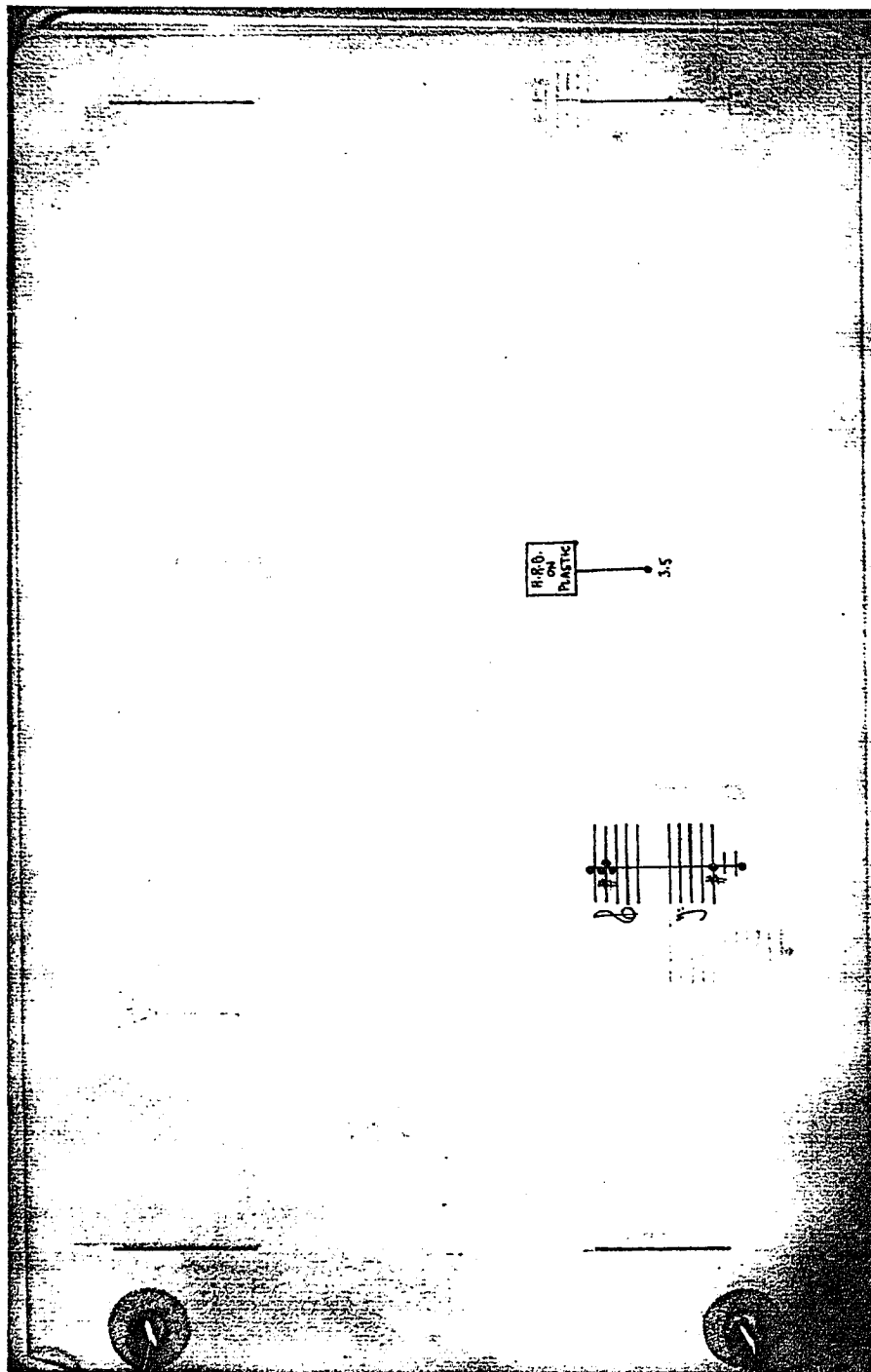
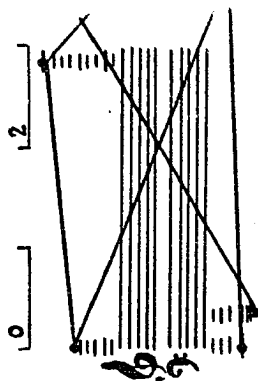


Fig. 6-10. Cage, Concert for Piano and Orchestra/Solo for Piano:
graphs AC 21 and AE 21



AE



7

AC

struction. A = Auxiliary noises. O = Outer piano construction. The position of the note vertically gives its loudness (high = fff) (low is [sic] ppp)." [AE] "Pitch-time areas silent unless accompanied by numbers, meaning number of tones (any) to be played." In other words, graph AC notates noises according to the location of their production *I* (inside the piano), *A* (auxiliary to the piano), and *O* (outer or exterior of the piano), with dynamic levels relative to the vertical position of the noteheads within these 3 fields. The figure 7 at the beginning of the graph means that only an unspecified seven of the 27 noteheads in graph AC are to be used in performance. In graph AE, the "pitch-time area" is the length of the graph demarcated above the graph by the bracketed numbers and the spaces between them. The pitch material of this graph is also restricted: only those portions of the staff notation below the bracketed segments are to be considered available for performance.

Fig. 6-11 shows Tudor's list of specifications for his readings of graphs AC and AE (near the bottom of the right-hand column of figures). The entries are numbered 1-9, followed by the *ap* for each of the 9 readings from the 2 graphs. The initials *I*, *O*, and *A* identify entries 1-6 and entry 8 as deriving from graph AC, and the final column of figures (3.5, 1, 9.5, etc.) shows the dynamic levels of these readings on Tudor's scale of 0-10.5. The remaining entries in the middle column refer to the pitch notation of

Fig. 6-11. Tudor, realization of Cage, Concert for Piano and Orchestra/Solo for Piano: list of specifications for readings of graphs AC 21 and AE 21. The specifications, labelled "21-22 AC + AE," appear in the right-hand column of figures.

51-52 BR	8 K	(D)	9-10 P
216	2217.86 (3)	1.1568	621 4.5
354.86	3182.14 (7)	3.2025	715.5 9
462.86	2700 (4)	3.0434	1012.5 1
617.14	4146.43 (8)	.4125	1917 10
786.86	3085.71 (6)	3.6422	1971 4
925.71	1735.71 (1)	.5625	2713.5 2
1080	2796.43 (5)	2.3639	3280.5 3.5
1203.43	2025.71 (2)	1.2429	3375 3
1342.29			3510 9
1465.71	9 B	54-55 BY	3577.5 1.5
1558.29	40.5	83.85 L	3793.5 9
1666.29	175.5	176.08 L	3928.5 1.5
1882.29	337.5	237.83 VH	4104 7.5
2005.71	540	1039.75 VL	4968 4
2160	810	1492.54 EH	5035.5 9.5
2268	877.5	1861.49 VL	5235 2.5
2360.57	1080	2230.43 H	
2468.57	1350	2599.38 M	21-22 AC + AE
2653.71	1552.5	2674.84 VH	47.66 I 3.5
2761.71	1822.5	2741.93 H	405.12 0 1
2854.29	2025	2867.7 EL	643.42 I 9.5
3039.43	2295	2934.78 ML	1072.37 0 6
3240	2565	2951.55 VL	4694.62 I 6
3348	2700	3236.65 MH	4766.11 0 6.5
3456	2825	3504.96 L	5004.41 263-C4
3579.43	2970	3639.13 EH	5242.72 A
3733.71	3105	4091.93 H	5400 f3-6b4
3826.29	3240	4301.55 MH	
3965.14	3375	4536.34 VL	4 H F2
4026.86	3537	5299.38 EL	(2835 M)
4165.71	3915	5358.07 VA	3240 P
4258.29	4050		49-50 AK
4320	4185	42 BA	1542.86 62 ##
4443.43	4455	1350	2217.86 f43 ##
4520.57	4590	4050	4467.86 f3 ##
	4995		
	5292		
	50 He		
	794.42 52 P		
	4605.58 63 P		

graph AE; specifically, to the Eb7 below the bracketed 9 and the C8 to which it is connected by the diagonal line (this line begins somewhat earlier, at the notehead G1 under the bracketed 5) and to the final pair of noteheads F7-Bb8, which appear under the bracketed 11 in Cage's score. In other words, Tudor begins his reading of graph AC at the point where this graph is in alignment with graph AE.

The first entry in the list told Tudor that the specific content of sonority 1 is to be performed inside the piano at a dynamic level of 3.5 and at *ap* 47.66. The reading (shown in Fig. 6-9, above) is notated as "H. R. B. on Plastic," the initials standing for "hard rubber beater," perhaps a spatula, a sound-producing device used by Tudor in such earlier Cage works as *34'46.776"* (1954). Tudor's notation, in the form of a verbal cue enclosed in a square and accompanied by its dynamic indication, is stemmed to show its attack point.

Graph BR 51 is a "relative" of the B family (Fig. 6-12). The number above each sonority refers not to clef distribution -- the notation of the graph is entirely in and below the bass staff -- but to the number of noteheads which may or must be played as harmonics.⁵⁵ I have found no con-

⁵⁵ This aspect of BR 51 is unclear. The Text 1 Key says "number of tones that may be taken in advance for production of harmonics [are] given above each aggregate." But in his note to the reproduction of this page in the Town Hall recording, Cage wrote that "above each aggregate [is

tent sketches for the realization of graph BR 51. But the readings of all 35 sonorities from the graph as shown in Tudor's realization suggest that determination of pitch content was a straightforward affair. The first sonority in graph BR 51 is the pentachord B1/Eb1/G1/F2/B3, and the number 3 above the notation of the pentachord allows (or calls for) three of the five pitches to be played as harmonics. In his realization (Fig. 6-13), Tudor notates Eb1, G1, and B3 as harmonics and redistributes the pentachord over two bass staves. An arrow is appended to the clef of the lower staff; this is Tudor's standard shorthand for *8va bassa*.

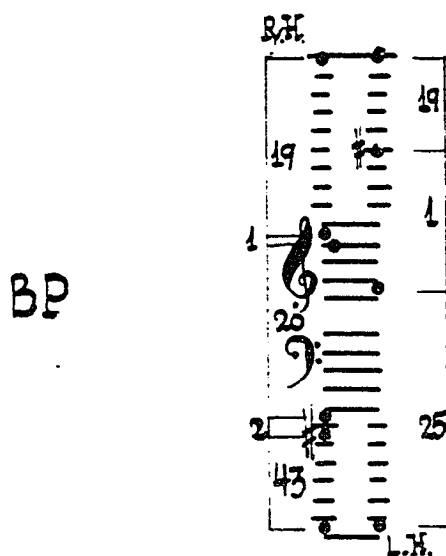
shown] the number of tones in it that are to be silently depressed (for the production of harmonics) before playing the remaining tones." All of Tudor's readings of BR 51 employ the number of harmonics indicated above a given sonority.

Fig. 6-13. Tudor, Text 2/Solo for Piano, p. 4: first reading of graph BR 51 (system 2, first staff notation). According to Tudor's Master Table and Typescript, the attack point for this reading, ap 216, coincides with that of Tudor's first reading of graph BT 54. The notation of the latter reading -- the graphic and verbal cue for performing on the harp or muted bass strings of the piano -- is entered above the reading of graph BR 51.

The image shows a musical score for graph BR 51, system 2, first staff notation. The score is oriented vertically on the page. At the top left, there is a graphic cue consisting of a box with a left-pointing arrow. Below this, the text 'HARP OR MUTED BASS STRINGS' is written in a box. To the right of this box, the text 'HARP' is written. The musical notation itself is on a single staff with a treble clef, a key signature of one flat, and a 4/4 time signature. The music begins with a rest, followed by a series of notes on the piano. A dynamic marking 'p' is present. The score is numbered '4' in the bottom right corner.

Graph BP 51 (Fig. 6-14) is but a slightly more distant member of the B family.

Fig. 6-14. Cage, *Concert for Piano and Orchestra/Solo for Piano*: graph BP 51



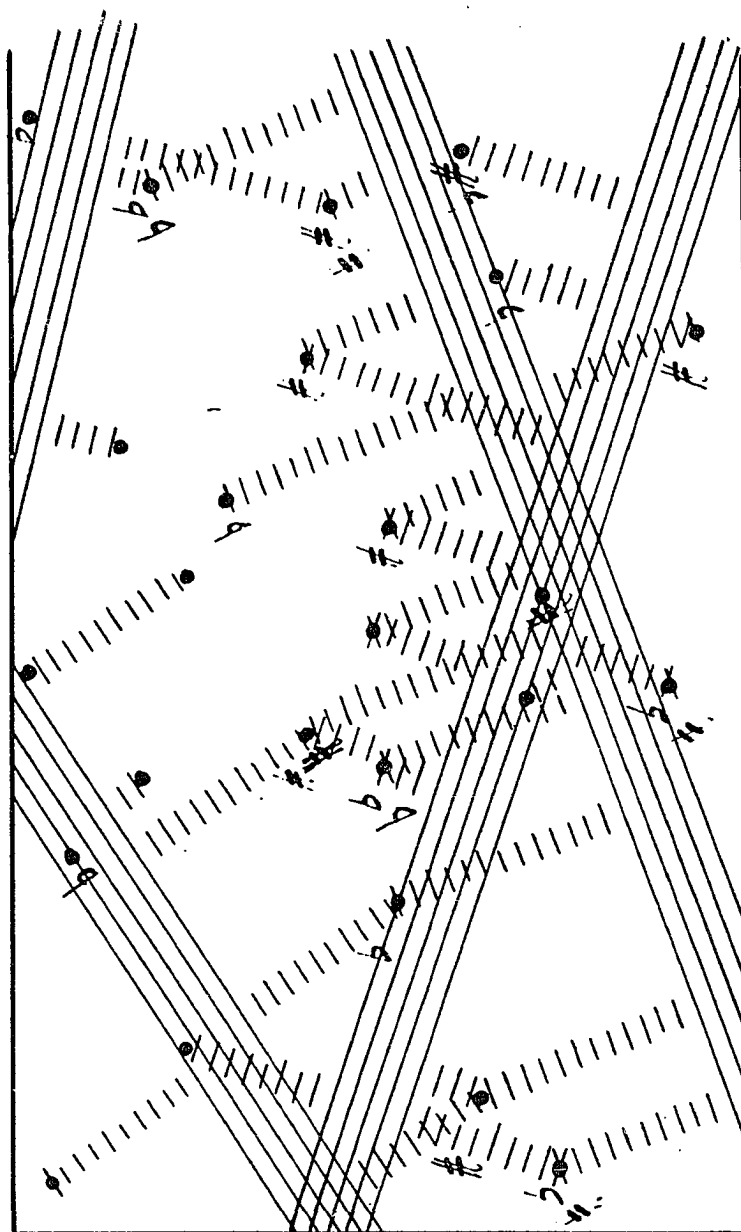
The Key to the graph reads "Numbers of tones within ranges given for each hand." In his note to this graph in the Town Hall album, Cage clarified "ranges" to mean "the notes limiting the choice" of tone to be played, that is, restricting the available pitch space within which specific pitch content is to be selected. The dyad D5-E5, for example -- the source of Tudor's first reading of BP 51 -- severely restricts pitch determination: D#5 is the only pitch inside this boundary. The realization reflects Tudor's reading enharmonically as Eb5 (Fig. 6-15).

Fig. 6-15. Tudor, Text 2/Solo for Piano, p. 28: first reading of graph BP 51 (system 1, Eb5)

The image shows a page of musical notation for piano. It is oriented vertically but contains two systems of music. The first system is in the upper right quadrant and consists of a single treble clef staff with a key signature of one flat (Bb) and a common time signature. It contains a single melodic line with a fermata. The second system is in the lower left quadrant and consists of a single bass clef staff with a key signature of one flat (Bb) and a common time signature. It also contains a single melodic line with a fermata. There are some markings on the page, including 'P' and 'Klarsch' in a box, and a page number '28' in the top right corner.

Cage moves farther away from standard notation in graph CE 59 (Fig. 6-16), a rectangle in which are distributed twenty-eight noteheads, four staff segments without clefs, and additional ledger lines. The Key to the graph reads: "Clefs ambiguous. Ledger lines above bass clef = 15, below treble clef = 13. Make intervals and aggregates where suggested by notation." The first notation in Tudor's content sketch for graph CE 59 (Fig. 6-17) is G6. The first notehead in graph CE 59, in the upper left corner of the graph, is on the 10th ledger line above the nearest staff. Therefore, Tudor has assigned a bass clef to this staff, the notehead thereby signifying G6. As usual, Tudor facilitates reading Cage's notation, placing it above a treble staff in his content sketch. The letter *m* signifies performance by muting the appropriate piano strings. Tudor's realization (Fig. 6-18) shows a simple transcription of the entry in the content sketch at *ap* 223.45.

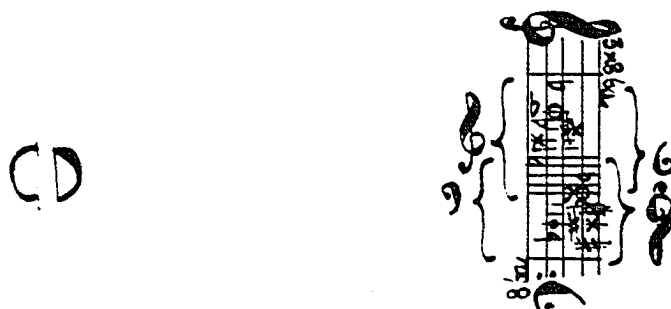
Fig. 6-16. Cage, Concert for Piano and Orchestra/Solo for Piano:
graph CE 59



CE

Graph CD 57 (Fig. 6-19) superimposes a number of standard notational signs on 2 staff segments (also superimposed), of different sizes.

Fig. 6-19. *Concert for Piano and Orchestra/Solo for Piano: graph CD 57*



The superimpositions allow both horizontal and vertical reading of the segments. Treble and bass clef signs are placed outside both segments to allow reading from L to R and by inversion. Following the treble clef sign for the large staff segment is the direction $3x\ 8\ ba$, i.e. "three octaves lower"; following the bass clef sign for the same segment is the direction $8\ ba$.

According to the Key to this graph, an intermediate stage is needed in order to read the signs: "For \bullet use 1 of 4 readings. For O use 2 of 4 readings. For x use 3 of 4 readings. Horizontal readings = keyboard. Vertical readings = harp."

Tudor's content sketch (Fig. 6-20) contains 6 sets of 4 noteheads each, i. e. one reading for each of the steps outlined in Cage's Key. Notes to be played on the harp of the piano (i.e. its strings) are marked *h*. In the first set of readings, notes 1 and 3 reflect a horizontal reading of the first 2 icti of the graph, an *x* on the line denoting C6 (when a treble clef is applied to the staff) and a solid notehead on the line denoting C2 (bass clef applied). A specifications list (Fig. 6-21) made from the content sketch is headed "57 CD . = 1 x = 2 0 = 3," referring to the requisite number of readings to be selected from each of the 6 sets taken. The first column shows Tudor's check-list of the resulting 14 readings. The 12th reading, in the final set marked *x*, shows the content of ap 675 to be A#2, transcribed as a solid notehead on p. 12 (not shown here) of Tudor's realization.

Fig. 6-21. Tudor, realization of Cage, *Concert for Piano and Orchestra/Solo for Piano*: list of specifications for realization of graph CD 57

		$x = 1$	
		$x = 3$	
		$o = 2$	
57			
CD			
✓	$x c^2$	$.6/4 \times w/15 = 2.25$	
✓	$a^3 h$	$5.65/13 \times w/15 = 6.52$	
	c^1	$3.4/4 \times w/15 = 12.75$	
✓	$F^{\#1} h$	$7.5/13 \times w/15 = 8.65$	
o	b^3	$1.5/4 \times w/15 = 5.625$	
	$f^{\#3} h$	$4.25/13 \times w/15 = 4.9$	
✓	D^2	$2.5/4 \times w/15 = 9.375$	
	$E^1 h$	$9/13 \times w/15 = 10.38$	
	A^1	$1.4/4 \times w/15 = 5.25$	
	$a^4 h$	$10.25/13 \times w/15 = 11.83$	
	a^2	$2.6/4 \times w/15 = 9.75$	
✓	$E^{\#1} h$	$2.95/13 \times w/15 = 3.4$	
•	$x f^2$	$2.75/4 \times w/15 = 10.3125$	
✓	$c^4 h$	$5/13 \times w/15 = 5.77$	
	A^1	$1.25/4 \times w/15 = 4.6875$	
✓	$C^1 h$	$8/13 \times w/15 = 9.23$	
o	$G^{\#1} a^{\#1}$	$3/4 \times w/15 = 11.25$	
	$[b^{\#4}] h$	$8.5/13 \times w/15 = 9.81$	
✓	$a^{\#1} f^1$	$1/4 \times w/15 = 3.75$	
	$B^{\#1} h$	$4.65/13 \times w/15 = 5.365$	
•	$x A^{\#1}$	$.5/4 \times w/15 = 1.875$	
	$[f^{\#4}] h$	$10.1/13 \times w/15 = 11.65$	
✓	a^2	$3.5/4 \times w/15 = 13.125$	
✓	$A^{\#1} h$	$3.05/13 \times w/15 = 3.52$	

At the other remove from the superimposed conventional notations in graph CD is the minimalism of graph AS (Fig. 6-22).

Fig. 6-22. *Concert for Piano and Orchestra/Solo for Piano: graph AS 31*



This graph is unique in Cage's score; it appears only once, on p. 31. Both its notation and the Key to reading it are minimal: an F#4 in a solid notehead on a grand staff whose lines are drawn in pairs, the Key telling the reader no more than what is plainly visible in the notation: "A single sound." But AS 31 is a "single-ictus" graph and thus meets Tudor's criterion for his realization. There was little need to determine anything about performance of this sound except its location. Perhaps because of its minimal character, Tudor placed it at the exact midpoint of his realization, at ap 2700 (at least I have found no other information pertaining to graph AS in Tudor's work notes).

Some graphs appear at first glance to be more abstract than in fact they are. An example of this are the K graphs, beginning with graph K 8 (Fig. 6-23) one of the most famous of Cage's notations (it adorns the cover of the Peters Catalogue). K 8 consists of 8 geometric shapes with pitch names entered in the corners of each. The shapes themselves are placed within an enormous grand staff, some of the shapes overlapping others. The Key to graph K 8 reads: "Disregard time. Play only odd or even number of tones in a performance, using others of a given 3, 4, 5, or 6 sided figure as graces or punctuations." Tudor saw that the notation itself reveals not merely pitch-class but specific pitch content within each geometric shape, since the letter-names are aligned with the corresponding line or space on the grand staff.

Tudor numbered the 8 geometric shapes and wrote down the pitch names in each. The resulting 8 sonorities in his content sketch (Fig. 6-24) merely transcribe this pitch content to standard notation. For example, the first sonority in the sketch -- the hexachord G1/Ab1/C2/E2/F#2/G#2 -- shows the pitch content of the hexagon at the bottom of Cage's graph. Reading graph K 8 from the left, however, the first shape is the square inside the bass clef and containing the pitch names A3/B3/E3/F#3. Consequently, the first reading of graph K 8 in Tudor's realization (Fig. 6-25) corresponds to the fourth notation in the content sketch;

Fig. 6-23. Cage, *Concert for Piano and Orchestra/Solo for Piano*: graph K 8

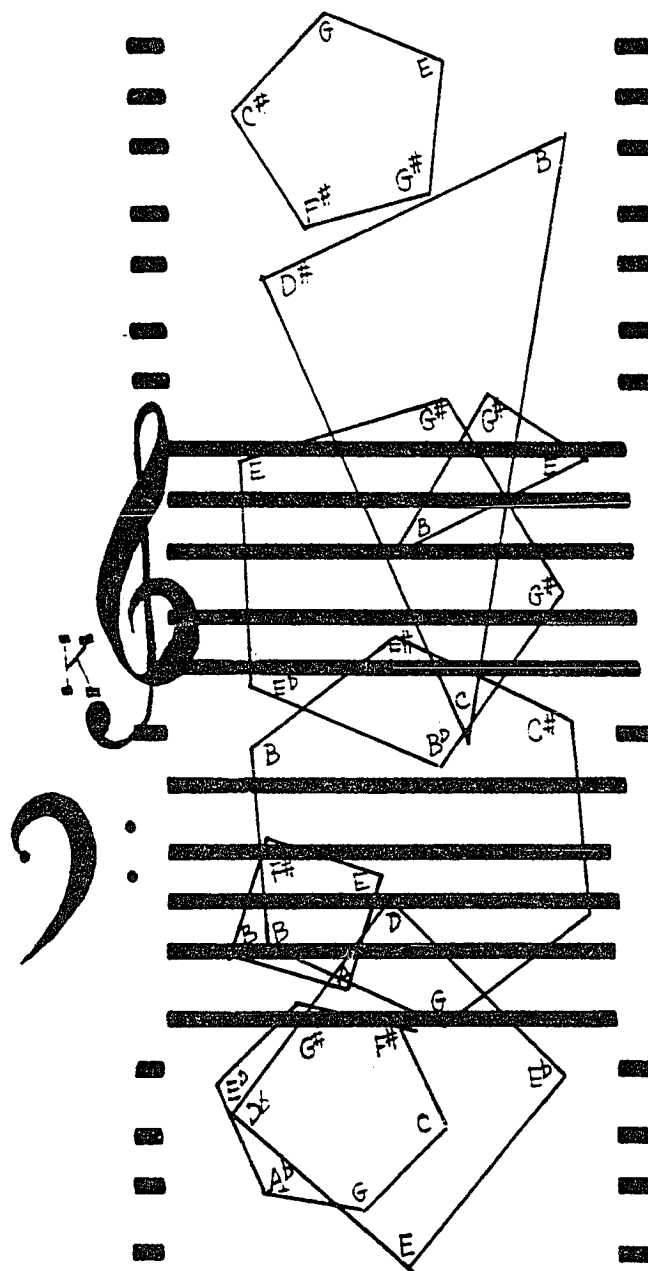
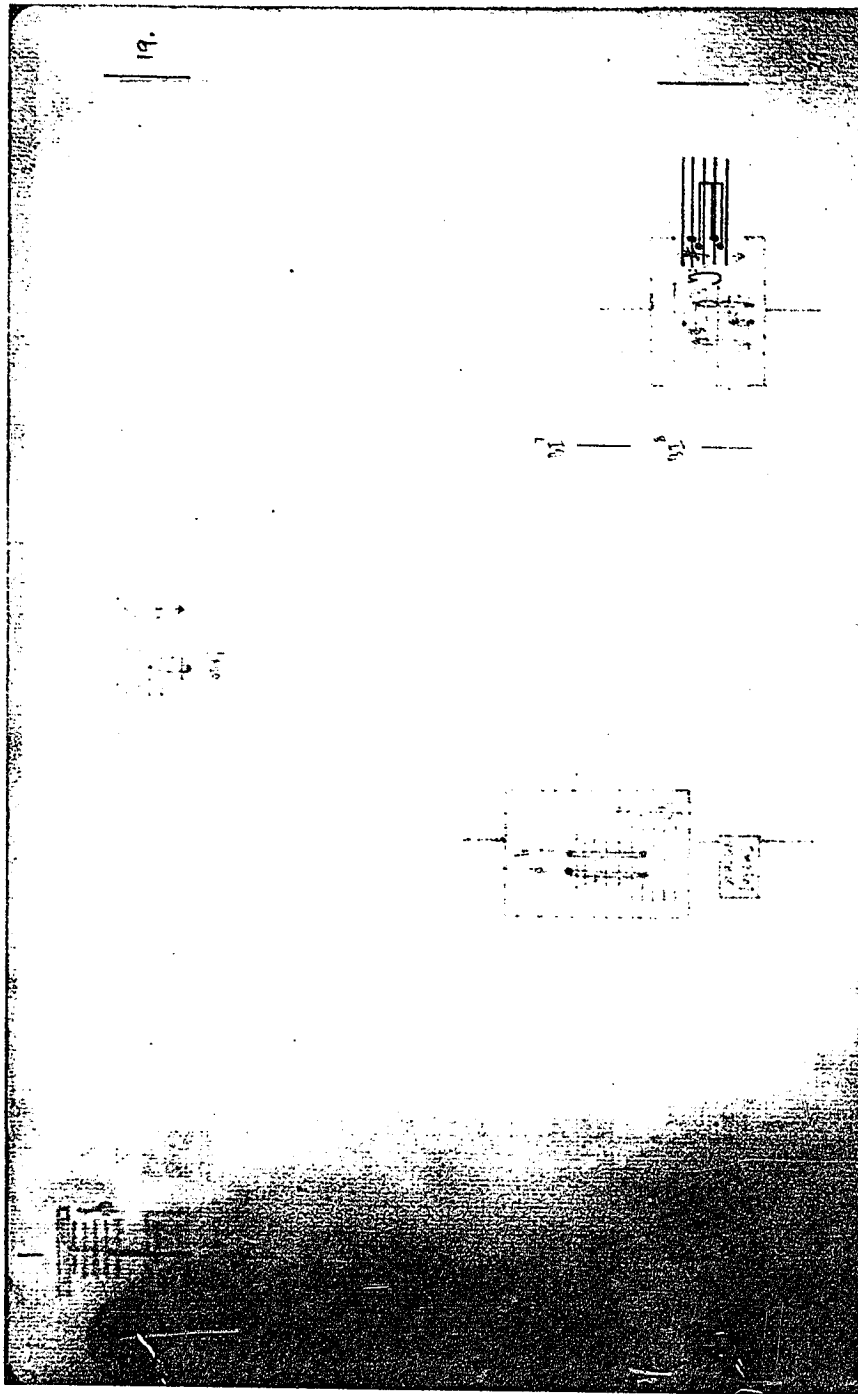


Fig. 6-24. Tudor, realization of Cage, Concert for Piano and Orchestra/Solo for Piano: content sketch for graph K 8. The sketch for the graph appears in system 2.

The image displays a musical score for Piano and Orchestra/Solo for Piano, consisting of three systems of staves. The notation is complex, featuring various rhythmic values, accidentals, and dynamic markings. The first system is labeled '9' and contains two staves. The second system is labeled '8' and contains two staves. The third system is labeled 'K' and contains two staves. The score is written in a sketchy, handwritten style, with some notes and markings appearing as small crosses or dots. The overall layout is dense and technical, typical of a content sketch for a graph in a musical score.

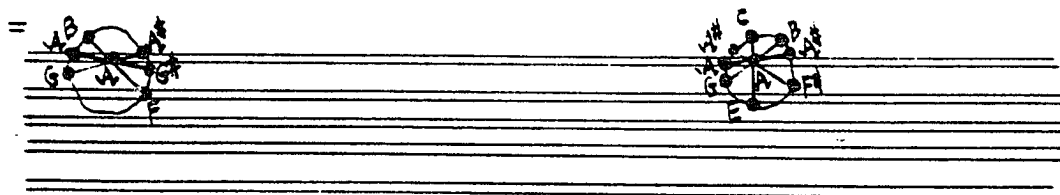
Fig. 6-25. Tudor, Text 2/Solo for Piano, p. 29: first reading of graph K 8



both show the tetrachord A3/B3/E3/F#3 in solid noteheads. In the realization, 3 of the 4 noteheads -- all but the F#3 -- are extended by a brace.

A similar case is the family of AI graphs. Graph AI 36 is shown in Fig. 6-26.

Fig. 6-26. Cage, *Concert for Piano and Orchestra/Solo for Piano*: graph AI 36. The graph actually begins on p. 35, with the identifying letters AI and a segment of empty bass staff. The first notes appear on p. 36, reproduced above, and the graph continues on p. 37.



Instead of geometric shapes, the notation of AI is placed around circles or wheels, with an axis pitch at the center. The AI graphs even provide noteheads in addition to letter names; both are placed in the corresponding line or space of a grand staff.

At first glance, Cage's Key to reading the graph seems to call for a "cursive" reading of each wheel ("play from

left to right"). But Tudor interprets this direction as simply meaning a normal reading of each wheel as a unit, i.e. a single ictus, each ictus read in sequence from left to right.

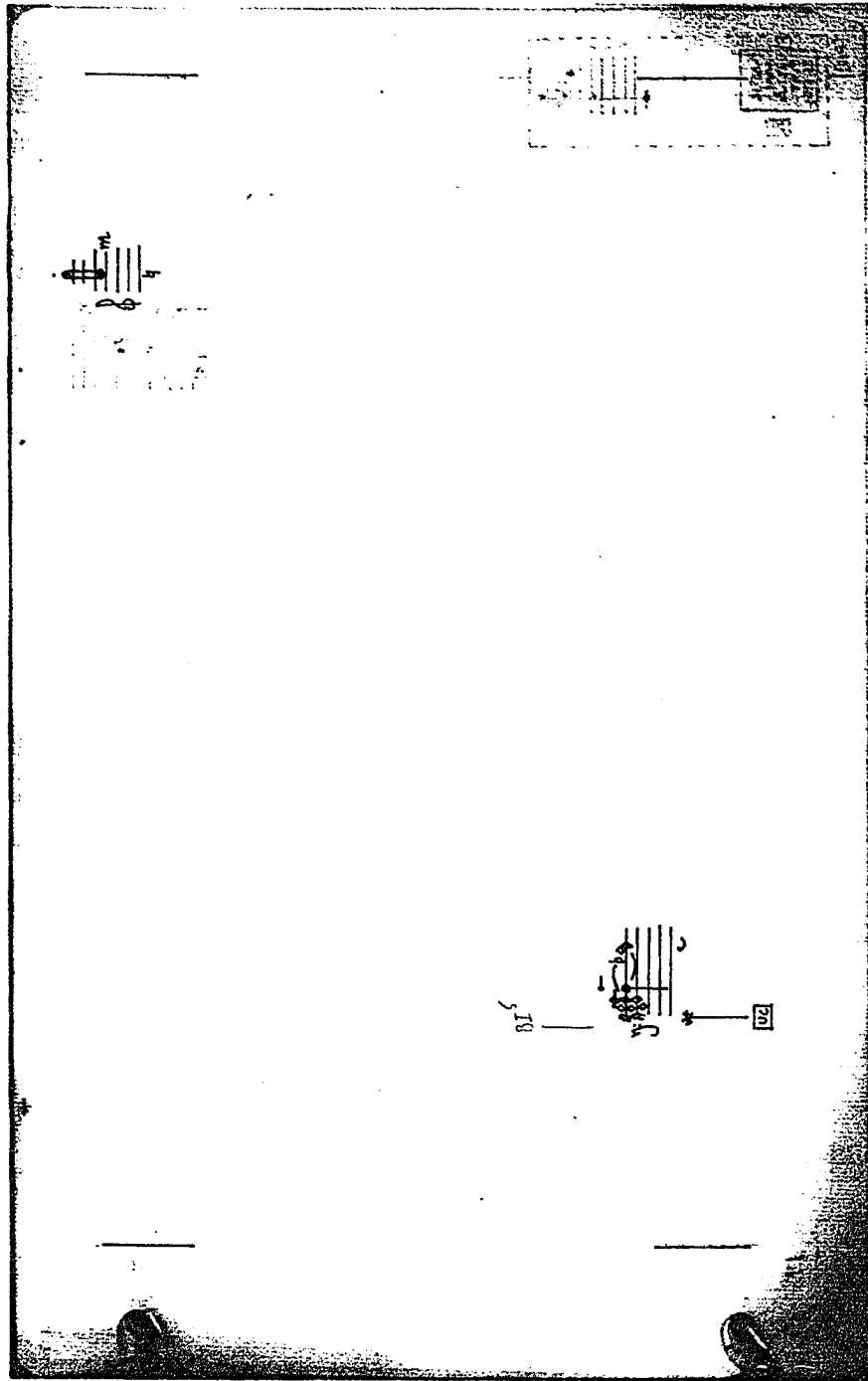
In Text 2, Tudor's notation of the first sonority is almost identical to that in his content sketch (Fig. 6-27a), except that the trichord F3/Ab3/Cb4 is written in diamond-shaped noteheads to signify harmonics (Fig. 6-27b).

Fig. 6-27a. Tudor, realization of Cage, *Concert for Piano and Orchestra/Solo for Piano*: content sketch for graph AI 36

The image shows a handwritten musical score with four main staves, each with a label on the left:

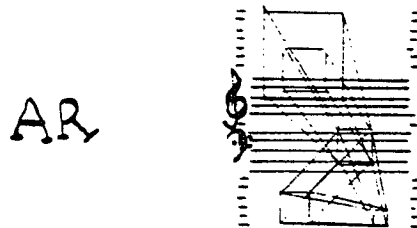
- CB:** The top staff contains musical notation with various accidentals and dynamics. Above the staff are handwritten numbers: 1, 3, 5, 8, 16, 8, 8. Below the staff are more numbers: 8, 3, 1, 8, 4, 1, 2, 6, 1, 3, 1, 2, 1, 5.
- AI:** The second staff contains musical notation with notes and rests. Above the staff are handwritten numbers: 36-39.
- J7:** The third staff contains musical notation. Above the staff are handwritten numbers: 10, 5, 3.5, 10.5, 11, 40, 7.63, 17.09, 20.72, 32, 34.54. Below the staff are more numbers: 5, 11, 62, 11.41, 25.63, 31.09, 48.51, 87.
- AV:** The bottom staff contains musical notation. Above the staff are handwritten numbers: 2.1, 4.7, 5.7, 9.8, (9.5).

Fig. 6-27b. Tudor, Text 2/Solo for Piano, p. 13: first reading of graph AI 36 (system 2, hexachord F3/G3/Ab3/A4/Bb4/Cb4)



Some graphs call for considerable invention from the performer. Graph AR 31, for instance, consists of a group of concentric boxes placed in a grand staff (Fig. 6-28).

Fig. 6-28. *Concert for Piano and Orchestra/Solo for Piano: graph AR 31*



As with other similar graphs (such as AV 37), Tudor interpreted the vertical dimension of each shape in AR 31 as denoting pitch space.⁵⁶ Furthermore, he apparently interpreted the horizontal space of AR 31 as denoting texture, specifically, clusters. The fourth entry in his list of measurements of the boxes in AR 31 covers the pitch space B1-B2 (Fig. 6-29). In the realization, this space is filled by a chromatic cluster played with pedal, corresponding to the first vertical line in the square in graph AR 31 (Fig. 6-30).

⁵⁶ Graph AV 37 was also used in the second version of *Text 2/Solo for Piano*.

Fig. 6-29. Tudor, realization of Cage, Concert for Piano and Orchestra/Solo for Piano: list of measurements for graph AR 31. The list appears at the top of the page.

31 AR

$$\begin{array}{ll}
 A = 10 \times 12 = 120 & (D) \\
 L \ 1.5-6 & W \ 7-12 = 4.5 \times 5 = 22.5 \\
 2.5-5 & 7-10 = 2.5 \times 3 = 7.5 \\
 6.-7.5 & 3.5-5.5 = 1.5 \times 2 = 3 \\
 2.5-4 & 0-2 = 1.5 \times 2 = 3 \\
 7.5-8.5 & 0-1 = 1 \times 1 = 2
 \end{array}$$

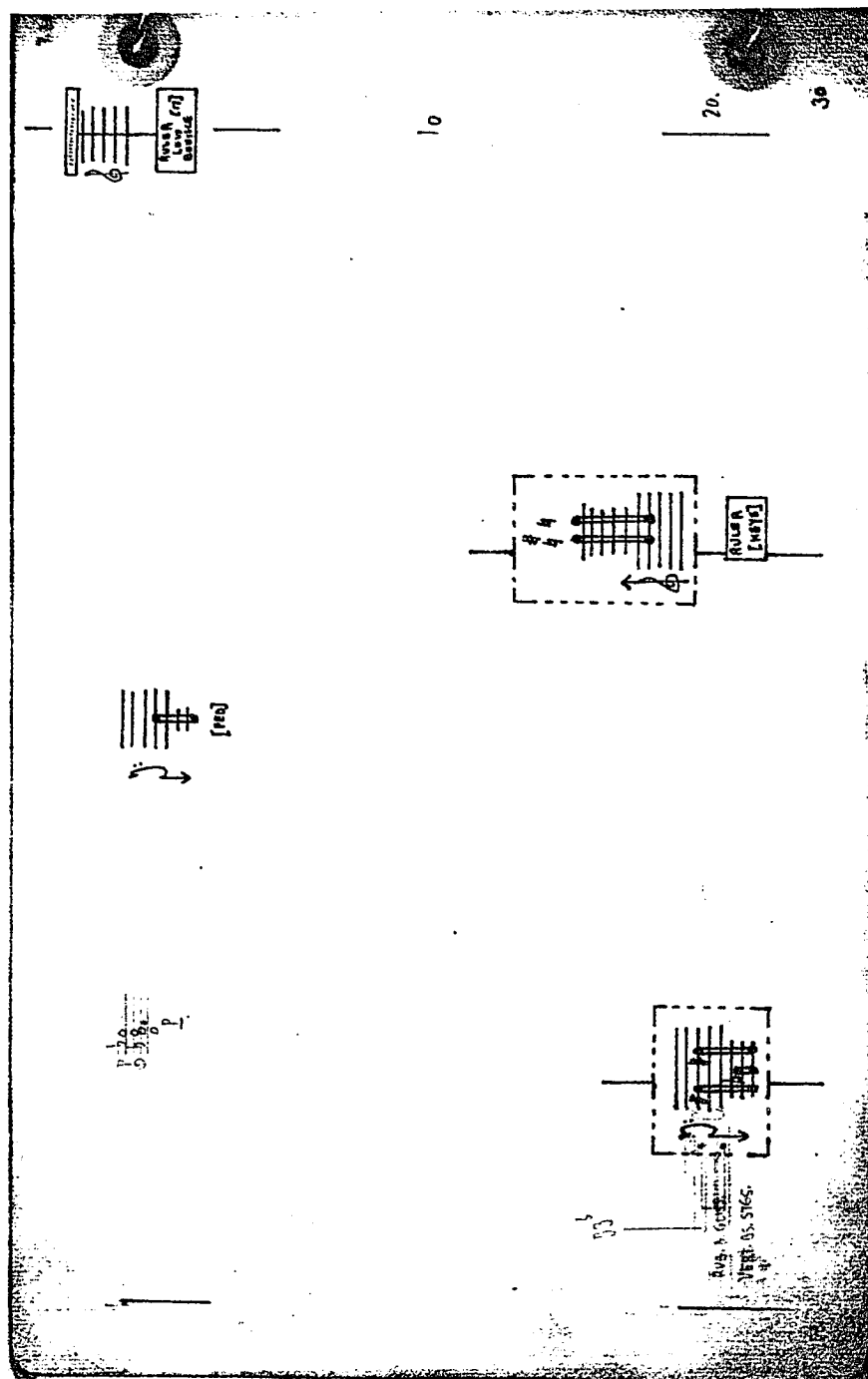
(0[A=10])

$$\begin{array}{l}
 3.75 \ (9.5) \ 6' - f^3 \\
 3.75 \ (8.5) \ 2^2 - 6 \ (\downarrow >) \ a \ \frac{1}{2} \ 1 - F^2 \ \downarrow > \\
 6.75 \ (4.5) \ 6' - B \ \downarrow = \\
 3.25 \ (1) \ B^2 - B' \\
 8 \ (.5) \ B - B^2 \ \downarrow < (0)
 \end{array}$$

9 B A = 40

.3
 1.3
 2.5
 4
 6
 6.5
 8
 10
 11.5
 13.5
 15
 17
 19
 20
 21
 22
 23
 24
 25
 26.2
 29
 30
 31
 33
 34
 37
 39.2

Fig. 6-30. Tudor, Text 2/Solo for Piano, p. 30:
fourth reading of graph AR 31 (system 1, first notation)



The AK graphs are the most complex of those in the group AI/AT/AK. AK 49 (Fig. 6-31) is another graph that has become known outside the immediate context of the "Solo for Piano," having been reproduced as the endpapers of *Silence*. The notation shows a dispersion of noteheads from a center. Cage's Key says only "Play any 1 note in each 'universe' according to time and amplitude given." What is meant by "universe" is not clear. Notation is on a grand staff with 3 groups of solid noteheads, 3 series of standard dynamic markings (1 across the top of the graph, 2 below the graph). Temporal division shown above the staff by brackets (marked 0, 2, and 4, respectively) and the intervening space.

Using the scale at the top of the graph, Tudor read "universe" to mean those noteheads connected by stem(s). There are three such groups in graph AK 49. The first begins with the B7 and F1 at the bottom of p. 49 and includes the B6 on p. 50; the second group consists of the numerous noteheads connected on p. 50; the third consists of just two noteheads, Eb3 and F7, on p. 50.

Tudor selected the B6 from group 1 (p. 50), which is governed by the *fff* dynamic marking below the staff (the *f* above the group governs the B8 which it immediately precedes). In his realization (Fig. 6-32), readings of this graph are written as stemmed and staccato eighth-notes rather than solid noteheads.

Fig. 6-31. Cage, *Concert for Piano and Orchestra/Solo for Piano*: graph AK 49. The example shows the continuation of the graph on p. 50.

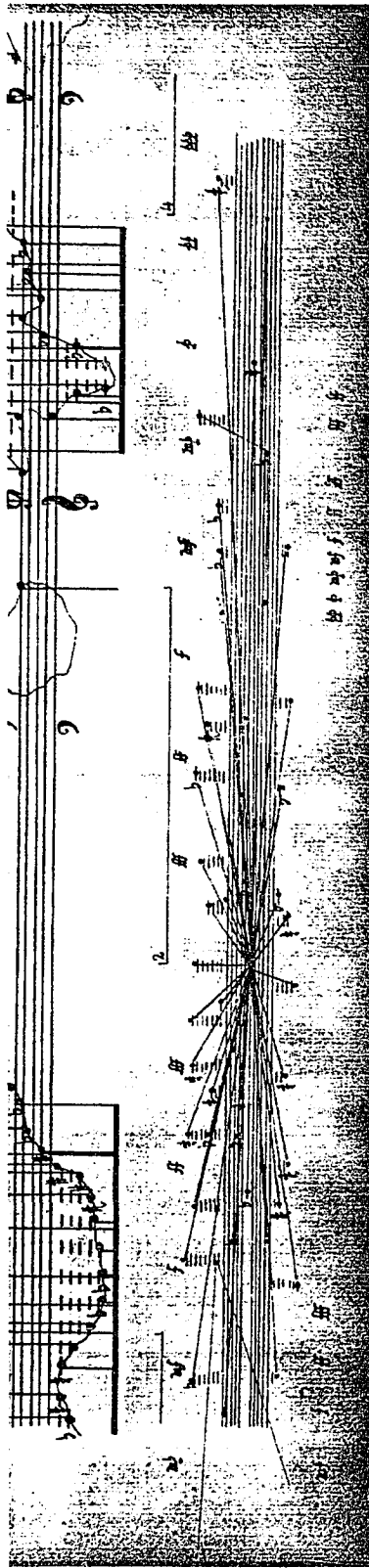
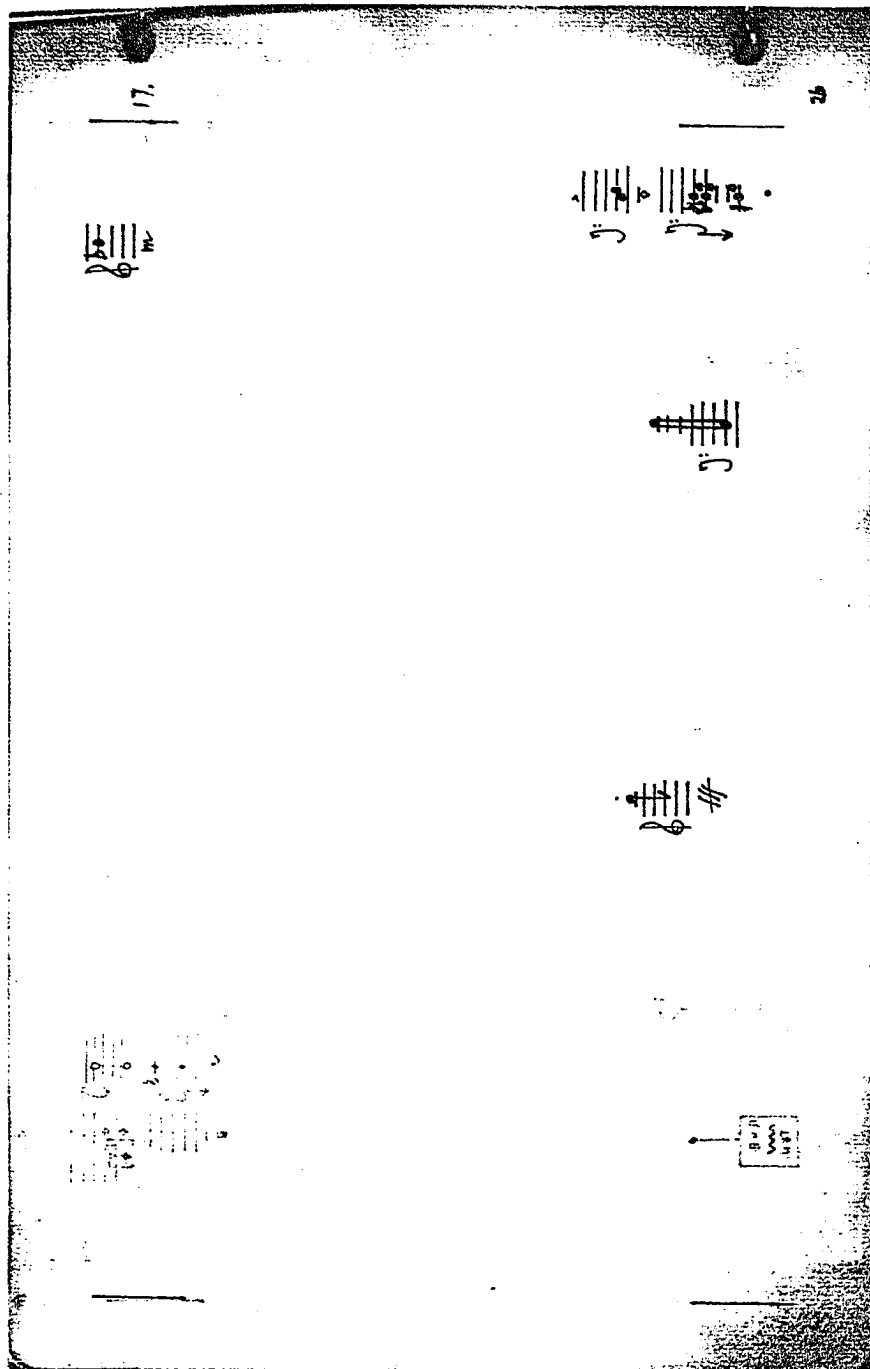


Fig. 6-32. Tudor, Text 2/Solo for Piano, p. 26: first reading of graph AK 49. The reading is the first notation in system 2.



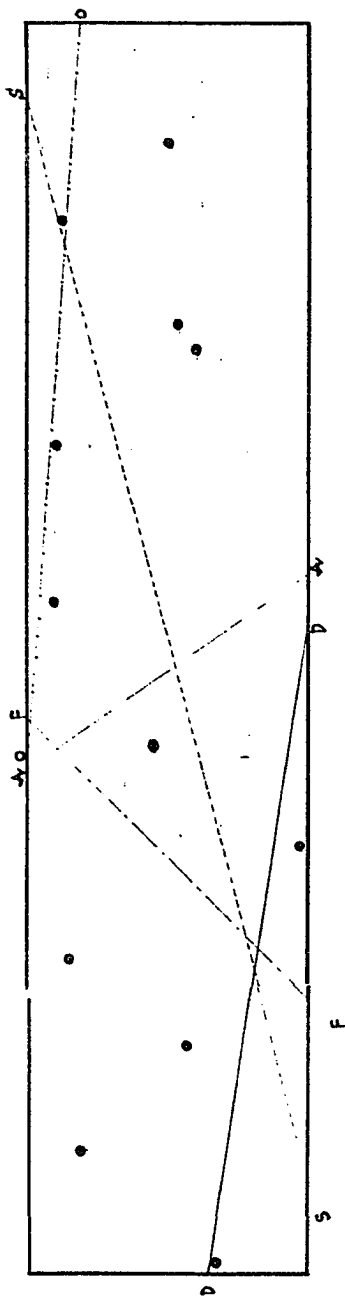
The most abstract notation in the *Concert for Piano and Orchestra* is the series of graphs in line-and-point-drawings, beginning with graph BB 45 (Fig. 6-33). The line-and-point drawing was Cage's most efficient early technique of indeterminate notation.⁵⁷ That is, while many of the other graphs in the "Solo for Piano" essentially confound the order of occurrence of an otherwise determinate or prescribed content, the line-and-point drawing places the musical material itself beyond the composer's control. The performer is left to determine a content that embodies the character of the sound. To do this, the performer must first obtain the parametric specifications of the sound by measuring the graph according to Cage's Key. The Key to reading graph BB 45 is as follows:

⁵⁷ Cage first used the line-and-point drawing to compose two miniatures, a *Haiku* written for Tudor's birthday in January 1958 but discovered only in 1986, and *For Paul Taylor and Anita Dencks* (1957). In "Composition as Process," Cage explained the suitability of the technique:

Sounds, as we know, have frequency, amplitude, duration, timbre, and in a composition, an order of succession. Five lines representing these five characteristics may be drawn in India ink upon transparent plastic squares. Upon another such square a point may be inscribed. Placing the square with the lines over the square with the point, a determination may be made as to the physical nature of a sound and its place within a determined program simply by dropping a perpendicular from the point to the line and measuring according to any method of measurement. (*Silence*, 28)

I have analyzed Tudor's realization of *For Paul Taylor and Anita Dencks* in "The Tudor Factor," trans. W. Zimmermann and U. Stiebler, in *John Cage Anarchic Harmony*, ed. Stefan Schädler and Walter Zimmermann (Mainz: Schott, 1992), 43-53.

Fig. 6-33. Cage, Concert for Piano and Orchestra/Solo for Piano:
graph BB 45



BB

Notes are single sounds. Lines are duration (D), frequency (F), overtone structure (S), amplitude (A), and occurrence [sic] (succession) (O). Proximity to these, measured by dropping perpendiculars for notes to lines[,] gives, respectively, longest, lowest, simplest, loudest, and earliest.

Tudor measured the 5 lines representing parameters *D*, *S*, *F*, *O*, and *A*, then compiled the results in a list of specifications for graph BB 45 (Fig. 6-34). Tudor's Master Table tells us that his first two readings of graph BB 45 are numbers 8 and 11 on the list. Looking at the corresponding entries in the list of specifications, we find, in the column showing order of succession *O*, that entries 8 and 11 both show the position measurement .1. I do not know Tudor's scale of measurement for reading graph BB 45. It was not inches in tenths, since noteheads 8 and 11 lie much closer than .1 inch to line *O*: in fact, they touch the line. I have found that, whatever the scale used, the area number *A* for graph BB 45 is 6, since this number works in determining the attack points of the entries in the column *O*. For readings 8 and 11, then, position measurement $p .1 \times$ duration $D 5400 \div$ area $A 6 =$ attack point $ap 90$.

Tudor later revised his list of specifications for graph BB 45, replacing measurements pertaining to overtone structure *S* with the initials *H*, *C*, *N*, and *A*, converting

Fig. 6-34. Tudor, realization of Cage, Concert for Piano and Orchestra/Solo for Piano: list of specifications for realization of graph BB 45

	1 H	2 C	3 N	4 A	
45-46	35.				9.2=10.5
BB			-4	x6	
	D.1	S.2.1	F.4.6	O.4.2	A. 9.2
	D.2.7	S.3.9	F.4.9	O.1.6	A. 6.2
	D.1.1	S.1.6	F.2.2	O.3.3	A. 5.7
	D.3.4	S.3.3	F.2.6	O.1.1	A. 3.3
	D.5	S.1.4	F.1.9	O.5.1	A. 4.
	D.2.5	S.1.8	F.1.3	O.2.3	A. 1.
	D.4.6	S.1.9	F.1.9	O.1.3	A. 2.2
	D.5.1	S.1.1	F.4.	O.1.	A. 4.5
	D.2.8	S.1.9	F.6.9	O.2.5	A. 4.5
	D.3.2	S.1.6	F.7.	O.2.2	A. 5.
	D.5.5	S.1.	F.6.9	O.1.	A. 7.8
	D.3.8	S.2.3	F.9.2	O.1.8	A. 7.8

frequencies F to piano-key numbers, and converting amplitudes A to his scale of 0-10.5 (Fig. 6-35).⁵⁸ The revised list enables us to distinguish the 2 readings in the realization (Fig. 6-36) by noticing that the dynamic level 9 in the upper notation is that of reading number 11 in the list of specifications and that dynamic level 5 in the lower notation is that of reading 8. Instead of the frequency, i.e. piano-key number, 36 shown in the entry for reading 8 on the list, Text 2 itself shows the cue FB , indicating a sound to be made on -- or by lowering -- the fallboard of the instrument at dynamic level 5. Above this notation is an entry whose amplitude level 9 identifies it as representing notehead 11 on Tudor's list. The high (H) overtone structure shown on the list can be simply reflected though the frequency itself, piano key 65 (C#6).

Graph BY 54 (Fig. 6-37) is another point drawing but without lines. It is a series of 21 noteheads distributed at various elevations within an extended rectangle on pp. 54-55. The vertical position of a notehead signifies its relative pitch; these Tudor determined in similar fashion to his reading of graph BB 45, notating the relative pitch area by initials, e.g. L = low, VH = very high.

⁵⁸ I have been unable to determine the meaning of the initials H , C , N , and A . H and N may mean "high" and "no" overtone structure, respectively, but this is only a speculation.

Fig. 6-35. Tudor, realization of Cage, Concert for Piano and Orchestra/Solo for Piano: second list of specifications for graph BB 45, showing revisions of overtone structure *S*, frequency *F*, and amplitude *A*

53 BV		19 5				
	0	S	F	D	A	
1.3	197.3	7 3	45	VL	10	
9	712.6	5 3	19	VL	4	
2.4	206.6	4 2	72	MS	7	
23	1847.4	8 4	59	VL	6.5	
51	4403	1 1	30	ML	3.5	
3.5	283.1	5 2	64	M	7.5	
20	1527	7 4	48	VL	5.5	
46	3905	1 1	25	ML	5	
4.6	441	7 4	60	ML	10.5	
7	600.4	7 3	42	VL	3	
5.10	929	2 1	79	S	5	
34	2896	9 4	69	VL	9	
6.11	1005	9 4	65	M	10.5	
2	160.15	7 4	51	VL	2	
7.12	1016	4 2	45	VL	7.5	
21	1633.3	5 2	15	VL	6	
8.18	1370	5 2	30	VL	8	
16	1344	3 2	8	L	6	
9.28	1691	1 1	58	ML	5	
35	2928	7 3	34	L	10.5	
10.25	2114	1 1	39	VL	5.5	
33	2768	4 2	7	ML	10.5	
29	2368	4 2	45	VL	10.5	
11.27	2292	1 1	14	ML	8.5	
14	1088	2 1	33	ML	10.5	
12.30	2498	1 1	51	L	4	
44	3613	6 3	22	ML	10	
36	3114	5 2	59	VL	8	
17	1350	7 3	11	M	6	
13.32	2526	2 1	21	L	6	
31	2512	2 1	21	ML	9	
15	1278	5 2	41	VL	8	
14.37	3174	2 1	36	0	3.5	
45	3791	4 2	0	M	8.5	
26	2202	6 3	61	VL	10.5(0)	
1	.0	7 4	17	ML	4.5	
15.38	3194	1 1	5	MS	6	
28	2307	2 1	62	M	9	
16.39	3332	1 1	8	ML	5.5	
17.40	3334	1 1	23	VL	4	
42	3507	3 1	18	M	10.5	
19	1412.5	6 3	56	VL	8.5	
18.41	3481	1 1	1	M	5.5	
19.47	3966	2 1	6	M	4	
43	3517	1 1	47	MS	9	
8	685.2	7 4	57	VL	5	
20.48	4035	3 1	18	ML	3	
49	4165	2 1	32	MS	7.5	
13	1060	7 4	67	L	7	
24	1957.5	8 4	26	VL	3	
21.50	4224	4 2	25	L	2	
22.52	4423	3 2	4	M	3	
23.54	4990	6 3	12	ML	1.5	
53	4968	1 1	41	S	5	

12 T.
R,LR,R,L,O,L,R,LR,LR

53 BB		10 5				
	0	F	D	S	A	
1.	128.3	47	M	1 1	7	
2.	167	34	M	1 1	8.5	
3.	938.7	42	ML	4 2	5.5	
4.	1143	28	S	2 1	8.5	
5.	1484	16	ML	3 1	9	
6.	1772	37	L	5 3	4.5	
7.	1911	24	M	6 3	6	
8.	2725	2	L	4 2	8.5	
9.	3022	21	L	3 2	8.5	
10.	3471	10	VL	5 3	10.5	
11.	4027	54	VL	3 2	7.5	
12.	4776	2	VL	9 4	5	

45-46 BB		(35)				
	0	S	F	D	A	
1.	3780	N	42	.1	10.5	
2.	1440	A	45	2.7	7	
3.	2970	C	18	1.1	6.5	
4.	990	A	22	3.4	4	
5.	4590	C	15	.5	4.5	
6.	2070	H	9	2.5	1	
7.	270	C	15	4.6	2.5	
8.	90	C	36	5.1	5	
9.	2250	C	65	2.8	5	
10.	1980	C	66	3.2	5.5	
11.	90	H	65	5.5	9	
12.	1620	N	88	3.8	9	

50 BJ
02025 SC F61 D3.75 A6

50-51 BI
1345795910371164144853933121823532
364101324159610362835124

50 Ha 56-57 AS
1. 1437.5 C¹ P 3118 G¹
2. 4385 F¹ M
3. 4880 G² M 15,32,41,61: silence

54 BT (30') 30':
1.035 C 24.175 C 1-4 59
1.12 P 27.45 C 8-11 61
3.27 P 29.16 C 14 73-76
4.30 P 17-18 83-84
5.42 P 21
10.57 P 25
11.425 P 31-35
16.39 P 37-38
17.15 C 42
21 P 52

Fig. 6-36. Tudor, Text 2/Solo for Piano, p. 2: readings 8 and 11 of graph BB 45. The readings are the first 2 notations in system 2.

The image shows two systems of musical notation, labeled 1 and 2. System 1 (top) features a treble clef with notes, a vertical line with a box labeled 'FB', and another vertical line with a box labeled 'FB'. System 2 (bottom) features a treble clef with notes, a vertical line with a box labeled 'FB', a vertical line with a box labeled 'FB', and a vertical line with a box labeled 'FB'. A large stylized symbol is also present between the systems.

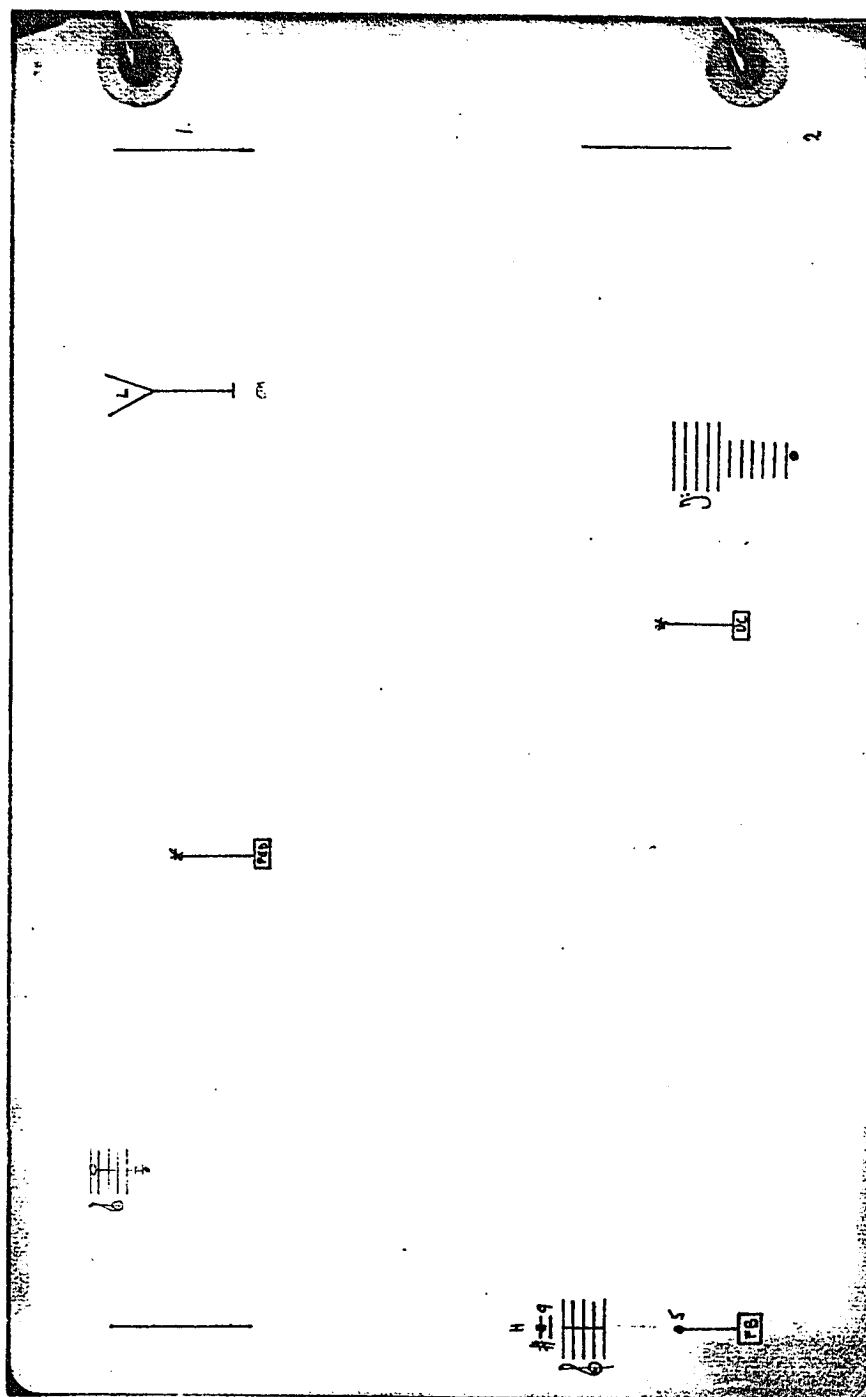
Fig. 6-37. Cage, *Concert for Piano and Orchestra/Solo for Piano*: graph BY 54



3Y

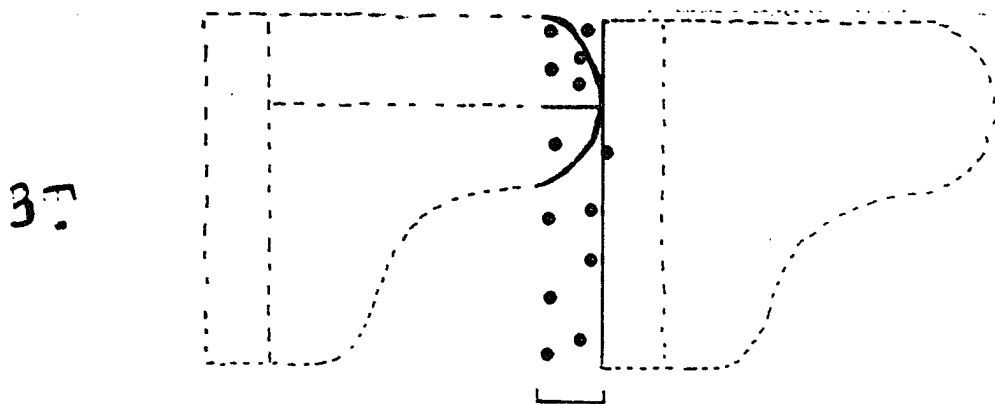
In his realization, Tudor notated each of his readings of graph BY in the form of a Y-shaped figure in which he placed the appropriate abbreviation designating relative pitch area; the bottom of the figure, marked by a short dash, shows the location of the attack point along the time line. The first reading of graph BY 54 is shown in Fig. 6-38. The lower part of the figure shows the placement of the notation at *ap* 83.85 seconds; the *L* in the crest of the figure indicates the pitch material as relatively low. Below the figure is the cue "on," which seems to be a later addition, referring to the activation of an electronic sound source.

Fig. 6-38. Tudor, Text 2/Solo for Piano, 2: first reading of graph BY 54. The reading is the second notation in system 1.



A further variant of the line-and-point technique is graph BT 54 (Fig. 6-39).

Fig. 6-39. Cage, *Concert for Piano and Orchestra/Solo for Piano*: graph BT 54



The graph shows the outlines of 2 grand pianos as seen from above. At the point where the outlines meet is a series of 13 dots (or solid noteheads) in 2 columns. There are 6 noteheads in the vertical col. 1, 7 in the more irregular col. 2. A bracket below the 2 columns connects them as a single "system." Cage's Key reads "Notes give place of performance with respect to piano." The notation of graph BT, therefore, specifies only general location of actions to be carried out. There are no further directions for reading it.

Tudor made a list of modes of attack for use in performing the 13 noteheads in graph BT 54. And in his list of the 13 attack points, 5 entries are labelled C for "inside curve of piano" and 8 are labelled P, presumably for "exterior of Piano." (The list of modes of attack is not shown here; the list of attack points may be seen at the bottom of Fig. 6-35, above.) Tudor's notation (Fig. 6-40) shows an arrow ← enclosed in a stemmed rectangle to show the location of the reading at ap 189. In Tudor's list of attack points, ap 189 is one of entries labelled C. The reading, therefore, refers to action performed at the curve of the piano, probably -- on the basis of Tudor's list of modes of attack -- to a leftward sweep of the bass strings.

Fig. 6-40. Tudor, Text 2/Solo for Piano, p. 4: first reading of graph BT 54. The reading appears in system 1.

The image shows a page from a music manuscript. On the left side, there is a diagram consisting of a box with an arrow pointing to the left, connected to a vertical line. Below this, there is another box containing the letter 'R'. To the right of the 'R' box, there is a box containing the word 'MUTE' and the number '55'. Below these boxes, there are two musical staves with notes and rests. On the right side of the page, there is a diagram consisting of a vertical line with a triangle at the top, connected to a horizontal line. Below this, there is a box containing the number '4'. The page is numbered '4' in the bottom right corner.

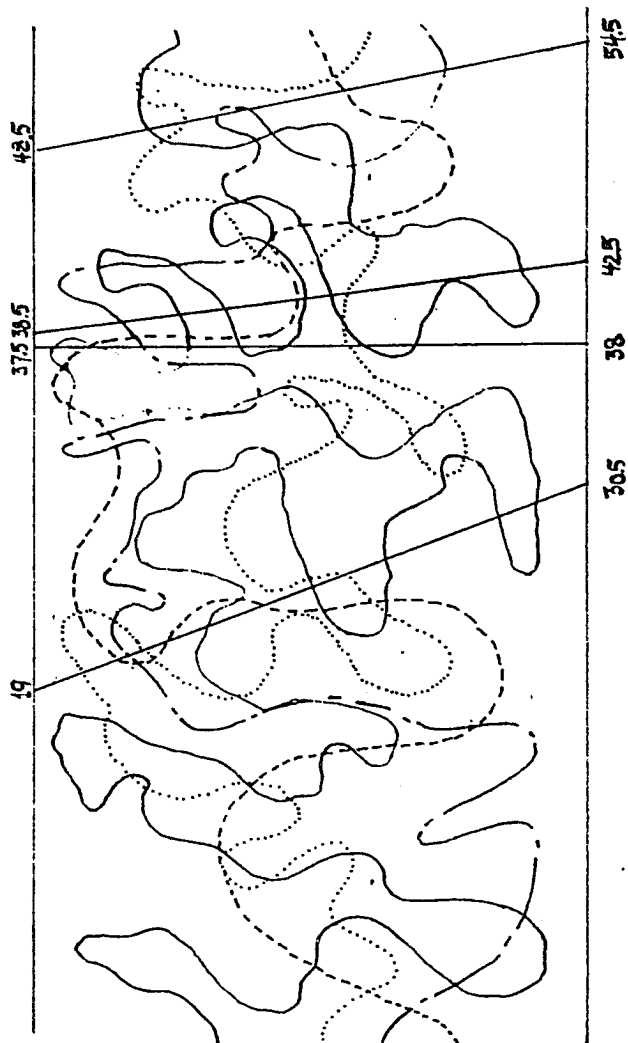
Graph CC 57, a prototype of Cage's *Variations* series (1958-66) and *Cartridge Music* (1960), is the most abstract of the line-and-point drawings in the "Solo for Piano." In fact, it consists only of lines (Fig. 6-41). Two horizontal lines at the top and bottom of the graph demarcate a notational field within which 4 kinds of curved lines and 4 diagonal lines are employed. The curved lines are continuous (either straight or curved), dotted (. . . .), dashed (_ _ _), and broken (_ . _ .). Each diagonal is accompanied by a pair of numbers: 19-30.5, 37.5-38, 38.5-42.5, and 48.5-54.5. Each pair of numbers is cumulative, both in relation to itself and to the series of 4 pairs. Cage's Key to the graph is as follows:

The four differently drawn lines = frequency, duration, amplitude, overtone structure, in any correspondance [sic]. Measurements defining these are to be made perpendicularly, from straight lines above or below to their points of intersection with slanting lines. Numbers at ends of these give by their difference time available for sounds.

Tudor labelled the four kinds of curved lines a-d, then connected each kind to a specific parameter: line a will be used to obtain measurements for determining frequency F, line b for duration D, line c for amplitude A, and line d for overtone structure S. These are shown in the upper right of Tudor's first work sheet for his realization of graph CC 57 (Fig. 6-42).⁵⁹ Tudor then measured, by inches

⁵⁹ The four pair of numbers to the right of the heading "57 CC" on the work sheet show the dimensions of the four diagonals in Text 1, though why they are aligned with

Fig. 6-41. Cage, Concert for Piano and Orchestra/Solo for Piano:
graph CC 57



CC

Fig. 6-42. Tudor, realization of Cage, Concert for Piano and Orchestra/Solo for Piano: first work sheet for graph CC 57

		F 19-30.5	D 37.5-38	A 38.5-42.5	S 48.5-54.5
T=60	b	32.5 2.24	100.5 20.		b 1.10 40.8
L=3.	d	2.17	20.7		a .11 42.
	c	2.16	21.		a 2.13 49.6
	bc	2.13	21.3		b 2.6 50.1
	d	2.9	21.8		c 2. 50.5
	a	2.2	22.6		c 1.28 50.7
	d	1.24	23.7		d 1.10 51.8
	a	1.16	24.7		c .25 53.
	b	1.10	25.5		
	a	1.3	26.2	50	
	a	.16	28.5	BJ F = 61/88	
	a	.9	29.3	D = 3/8	
	a	2.79	37.6	A = 3.35/11.	
	d	2.23	37.7	S = 5/8	
	a	2.70	37.7		
	c	2.13	37.75	54 [37.5] area = 119° 13.5	
	a	2.5	37.8	BW3 0.1.23 F.1.21 A.20 D.2 S.9	40.57 4-123
	a	1.28	37.85	1. 0.7.2 F.21 A.15 D.10 S.12	
	a	1.20	37.9	2. 0 1.24 F.25 A 1.8 D 1.3 S 1.18	
	b	1.10	37.9	4-31=27 70-74=4 123-107=16	
	a	1.7	37.95		[49, 123, 166.5/180]
	a	30.	37.95		
	c	2.17	39.		
	a	2.6	39.5		
	a	1.31	39.8		
	d	1.19	40.4		
	a	1.47	40.6		
	a	1.13	40.6		

in thirty-seconds, the intersection of each of the four kinds of curved lines with each of the four diagonals in terms of their distance from the lower, rather than the upper, horizontal line in the graph. Each of the curved lines intersects with the four diagonals a number of times (see Fig. 6-41, above). Tudor's work sheet shows four sets of these measurements, one set for each of the diagonals in Cage's score. Each set reflects the number of times a given diagonal is intersected by each of the curved lines. There are 12 measurements in set 1: five of them, labelled *a*, refer to the five intersections of the curved line (representing frequency *F*) with the first diagonal in the graph; likewise, there are three measurements labelled *b* (= duration *D*), 1 labelled *c* (amplitude *A*), and three labelled *d* (overtone structure *S*).⁶⁰ The first entry in the column headed "32's" shows that the first intersection of line *b* (the dotted line Tudor has selected to use in determining duration *D*) intersects with the first diagonal line at $2\frac{24}{32}$ inches from the lower horizontal. Tudor enters this group of measurements as decimals rather than fractions, thus the first entry is written as "2.24." The second entry

the four letters signifying parameters is not clear, since Tudor did not use the diagonals to refer to parameters.

⁶⁰ The 10 entries in set 2, representing intersections with diagonal 2, show 7 intersections of line *a*, and 1 intersection each of lines *b-d*. In set 3, there are 5 intersections of *a*, and 1 each of *b-d*; in set 4, 1 intersection of *a*, 1 of *b*, 3 of *c*, and 1 of *d*.

shows that line d (the broken line used in determining overtone structure S) first intersects with diagonal 1 at 2.17 ($= 2-17/32$) inches from the bottom horizontal, and so forth.

The column headed "100's" shows a series of numbers in ascending order; these numbers, therefore, do not correspond to those under the column headed "32's." This is because Tudor measured the intersections a second time, from the left side, i.e. the commencement, of the graph rather than from the horizontal lines above or below it. Furthermore, the new series of measurements is not by inches in thirty-seconds but by inches in tenths. Tudor's reason for taking a second series of intersection measurements has to do with the implicit scale of measurement in the graph itself, where the numbers above and below each diagonal represent degrees on a scale of 0-60 which, Cage says in his Key to the graph, signifies the amount of "time available for sounds." The scale is incremental of inches in tenths; that is, degree 60 ($= 60$ tenths of an inch $= 6$ inches) would come at .5 inch after the termination of the graph, understood as the end of the pair of horizontal lines. This hypothesis is confirmed by comparing the distances between the numbers above and below the diagonals; e.g., along the lower diagonal, between 30.5 and 38, 38 and 42.5, 42.5 and 54.5. The "T = 60" on Tudor's work sheet, then, would refer both to 60 seconds (Time) and to the length 6 inches of the graph. This be-

comes apparent in Tudor's second work sheet, a synthesis of the measurements from the first work sheet and their conversions to parametric specifications (Fig. 6-43). Again, the measurements are grouped into four sets corresponding to the four diagonal lines in graph CC 57. Tudor has also sorted the information in each of the sets by grouping the measurements of each curved line into subsets, identified by letters *a-d*, and listing them in descending order and under their parametric referents *F, D, A, and S*. He has also converted the measurements, though I have been unable to identify his scale of conversion.⁶¹ Since there are three intersections of line *b* with the first diagonal line in graph CC 57, there are three measurements labelled *b* under the heading "D & A" and, therefore, three opportunities to use material from set 1 as discrete sonorities. (The fourth measurement under "D & A," labelled *c*, refers to the curved line used in determining amplitude *A*.) Measurements of the intersection of line *b* from the bottom horizontal refer to duration *D*, but Tudor's second series of measurements, entered in the "100's" column on the first work sheet, are here grouped under the heading [*O*], meaning order of Occur-

⁶¹ The first of the five measurements of the intersections of line *a* with diagonal 1, for example, under the heading *F*, shows Tudor's second measurement of line *a* as 2.2 (2-2/10) inches from the lower horizontal line in graph CC 57 converted to "66-5 = 61," followed by the letter *H* for High frequency. The two sets of figures labelled *A* or *a* at the top of the work sheet do not, unfortunately, clarify the conversion process.

Fig. 6-43. Tudor, realization of Cage, Concert for Piano and Orchestra/Solo for Piano: second work sheet for graph CC 57

57 CC	$A^2 = 1$ $A^1 = 13$ $A = 25$ $a = 37$	$a^1 = 49$ $a^2 = 61$ $a^3 = 73$ $a^4 = 85$	$F = a$ $D = b$ $A = c$ $S = d$	$b^1 = 11.5$ $b^2 = .5$ $b^3 = 4.5$ $b^4 = 6.$	60"
			D & A	[0] S	
	$a = 2.2 = 65 - 5 = 61$	H	$b = 2.24 = 88 = 10.54$	[20.]	$d = 2.17 = 81 = N$
	$a = 1.16 = 48 - 5 = 43$	M	$b = 2.13 = 77 = 9.22$	[21.3]	$d = 2.9 = 73 = A$
	$a = 1.3 = 35 - 5 = 30$	ML	$b = 1.16 = 42 = 5.03$	[25.5]	$d = 1.24 = 56 = C$
	$a = .16 = 5 - 5 = 11$	VL	$c = 2.16 = 80 = 16.6 = 17 = 9$		
	$a = .9 = 9 - 5 = 4$	VL			
	$a = 2.29 = 93 - 5 = 88$	VH	$b = 1.10 = 42 = .22$	[37.9]	$d = 2.23 = 87 = N$
	$a = 2.20 = 84 - 5 = 79$	VH	$c = 2.13 = 77 = 16 = 8.5$		
	$a = 2.5 = 69 - 5 = 64$	U			
	$a = 1.28 = 60 - 5 = 55$	MH			
	$a = 1.20 = 52 - 5 = 47$	M			
	$a = 1.7 = 39 - 5 = 34$	ML			
	$a = .30 = 30 - 5 = 25$	ML			
	$a = 2.6 = 70 - 5 = 65$	H	$b = 1.10 = 42 = 1.75$	[40.8]	$d = 1.9 = 51 = C$
	$a = 1.31 = 63 - 5 = 58$	MH	$c = 2.17 = 81 = 17 = 9$		
	$a = 1.17 = 49 - 5 = 44$	M			
	$a = 1.13 = 45 - 5 = 40$	M			
	$a = .11 = 11 - 5 = 6$	VL			
	$a = 2.13 = 77 - 5 = 72$	H	$b = 2.6 = 70 = 4.375$	[50.1]	$d = 1.10 = 42 = C$
			$c = 2. = 64 = 13.3 = 7$		
			$c = 1.28 = 50 = 12.5 = 13 = 7 (or 6.5)$		
			$c = .25 = 25 = 5 = 2.5$		

line *b* with the first diagonal line in graph CC 57, there are three measurements labelled *b* under the heading "D & A" and, therefore, three opportunities to use material from set 1 as discrete sonorities. (The fourth measurement under "D & A," labelled *c*, refers to the curved line used in determining amplitude A.) Measurements of the intersection of line *b* from the bottom horizontal refer to duration *D*, but Tudor's second series of measurements, entered in the "100's" column on the first work sheet, are here grouped under the heading [*O*], meaning order of Occurrence -- what I have referred to as attack point or *ap*. Each of the six bracketed numbers under [*O*] shows the distance, in inches in tenths, of the total six intersections of line *b* with the four diagonals in graph CC 57. In turn, each of these distances comprises a position measurement used in determining the *ap*'s of the graph in Tudor's realization. Using the first measurement of line *b*, 20 (i.e. inches, or 20 tenths of an inch), as an example, we find that $(p) 20 \times \text{total duration } (D) 5400 \div \text{graph area or length } (A) 60 = ap 1800$, the first entry in Tudor's list of the six *ap*'s for graph CC 57 and, of course, in both the Typescript and Packet B.⁶²

⁶² The formula yields all six *ap*'s (there are six intersections of line *b* with the four diagonals in Text 1) in graph CC 57 (footnote continued on following page):

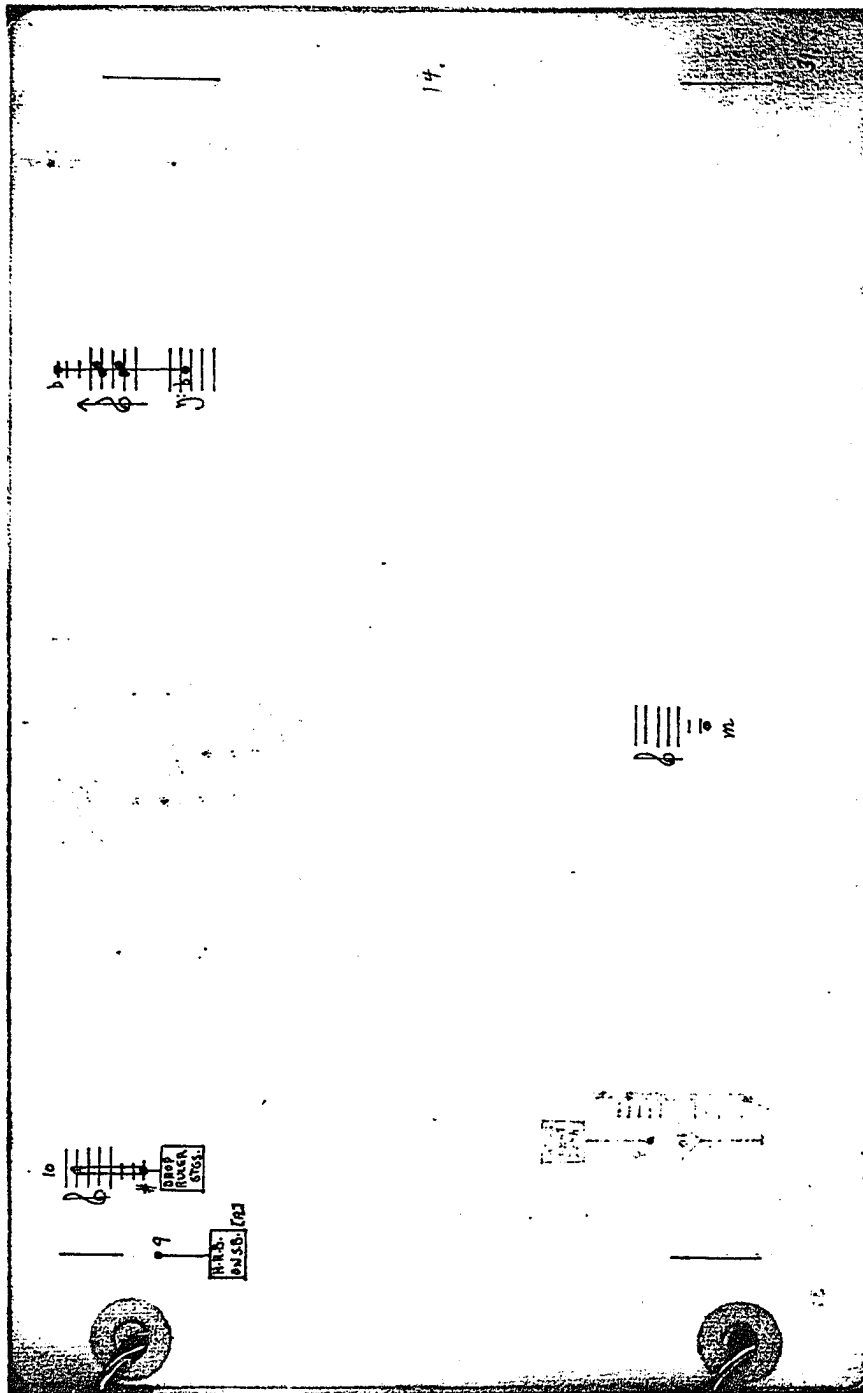
The set headed *S* shows three measurements of the intersection of line *d* with diagonal 1. This, of course, results in a separate overtone identity for each of the three *ap*'s derived from set 1. However, there is only one intersection of line *c* with diagonal 1, and therefore only one measurement of amplitude *A*. Consequently, Tudor applies the result of this measurement, converted to amplitude level 9, to each of the three *ap*'s derived from set 1 (*ap* 1800, *ap* 1917, and *ap* 2295).⁶³

The first measurement of line *d*, 2-17/32 inches, has been converted to 81, then to the letter *N*, presumably signifying "Noise," since the notation of this sonority at *ap* 1800 reads "H. R. B. on S. B.," i.e. a hard rubber beater played on the sound board, and at dynamic level 9 (Fig. 6-44).

position <i>p</i> x duration <i>D</i> (5400) ÷ area <i>A</i> (60) =	<i>ap</i>
(set 1)	
20	1800
21.3	1917
25.5	2295
(set 2)	
37.9	3411
(set 3)	
40.8	3672
(set 4)	
50.1	4509

⁶³ There is no dynamic marking at the third *ap* from set 1 in Tudor's realization -- the notation of this *ap* is on p. 39 of Text 2 -- but I am assuming this to be an unintentional omission.

Fig. 6-44. Tudor, Text 2/Solo for Piano, p. 31. The first notation in system 1 reflects Tudor's first reading of graph CC 57.



A similar restriction arises from the intersections of the curved lines with the second diagonal line in Cage's score. Set 2 of the measurements in Tudor's second work sheet shows that there are seven intersections of line a (Frequency) with diagonal 2, but only one intersection of line b. Therefore, Tudor incorporates all seven readings of line a into the single ap (3411) derived from line b: his notation (Fig. 6-45) calls for a stick to be tapped or dropped seven times (shown by seven dots) on a penny placed on the sound board.⁶⁴

General Problems of Performance

The most original problem Tudor set for himself in performing his second realization was the particular kind of indeterminacy resulting from his method of devising the realization's internal temporal structure. Determinations of content were made according to the requirements of the Key to each graph in Cage's score, but these were limited to the preparatory stage of Tudor's content sketches and lists of specifications. Tudor placed a new restriction on his knowledge of his own actions: in determining the content of his realization, he knew what actions would be performed

⁶⁴ There is also but a single measurement of line b in sets 3 and 4 (representing intersections with diagonals 3 and 4 in Cage's score). In set 3, therefore, Tudor uses all five measurements derived from line a at ap 3672. Set 4, containing but one measurement of line a, presents no such problem.

Fig. 6-45. Tudor, Text 2/Solo for Piano, p. 57. The final notation in system 2 reflects Tudor's reading of the intersections of the curved lines with diagonal line 4 in graph CC 57.

57

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but, at first, not when he would have to perform them. And to keep this aspect beyond his control, he methodically brought about a temporal structure both unpredictable and determinate.

Mobility

The temporal structure of *Text 2/Solo for Piano* made new demands on the sheer mobility required to get from one performance location to another: at, inside, and around the piano, manipulating the various auxiliary sound sources. Although modifications of the piano itself go as far back as the music of Henry Cowell or even earlier, use of the piano as the center of a performance situation has its roots in Cage's *Water Music* of 1952. The distinction is important, and it is clarified by Frank Hilberg's suggestion of the term *instrumentarium* to denote the piano -- or any other instrument -- as part of a performance complex.

In his study of Cage's *Variations II* (1961) and Tudor's 1967 recording of it, Hilberg defines an *instrument* as "a single tool or implement which makes possible particular playing techniques determined by its construction. Its construction may be modified, and it is continually subject to extensions of playing techniques; both are parts of a process which is probably limitless."⁶⁵ An *instrumentar-*

⁶⁵ "Instrument: Die Einheit eines Gerätes, Werkzeuges, das durch seine Bauweise bestimmte, avisierte Spieltechniken ermöglicht, das Modifikationen und

ium, on the other hand, is "the totality of all components, instruments, apparatus, objects, etc., employed for a specific purpose or activity: as a system for sound production, it forms a total configuration. In contrast to the unity of an instrument, an instrumentarium can consist of a multitude of variable and heterogeneous elements or chains of components."⁶⁶ In later performances of *Text 2/Solo for Piano*, Tudor's increasing use of electronic equipment -- an instrumentarium -- somewhat alleviated this problem, since more of his work could be done at the piano bench where he could manipulate the controls, both acoustic and electronic.

On a local level, *Text 2/Solo for Piano* required alternating between markedly different performance techniques, whether conventional (tone production at the keyboard), modified (harmonics, muted and pizzicato strings, pedals

erweiterten Spieltechniken zugänglich ist und fortwährend unterliegt - ein Prozeß, der wahrscheinlich nie abgeschlossen sein wird." *Das Geräusch als kompositorisches Material am Beispiel von David Tudors "elektrifiziertem Klavier"* (Master's thesis, Technical University Berlin, 1991), 52.

⁶⁶ "Instrumentarium: Die Gesamtheit aller zu einem bestimmten Zweck oder Tätigkeit benutzten Komponenten, Instrumente, Apparaturen, Dinge, etc. Die [sic] ein (Klangerzeugungs-) System bildende totale Konfiguration. Im Unterschied zur Einheit des Instrumentes kann das Instrumentarium aus einer Vielzahl von variablen und heterogenen Elementen oder Kettern von Komponenten bestehen." Ibid.

used as sound sources in themselves), or invented by Tudor himself.⁶⁷

Simultaneities

Another consequence of Tudor's method of determining the attack points in his realization was the coincidence of as many as five graph readings -- whose individual natures may be mutually exclusive -- at a single attack point, as happens at ap 2025.⁶⁸ (We have seen an example of this in the two readings of graph BB 45 at ap 90). All piano music, of course, requires doing more than one thing at a time. But the various techniques required simultaneously are, as a rule, intentionally interrelated. In *Text 2/Solo for Piano*, they are intentionally disconnected, then reassembled in new and unpredictable combinations.

⁶⁷ In the latter category are the clusters in *Text 2/Solo for Piano*. While often of considerable difficulty, they are derived from Tudor's own earlier innovations in cluster techniques. And they could hardly have posed greater difficulties than those found in Tudor's reading of graph J 5 in his first realization of *Cage's Concert*. On the corresponding page of the realization I have found no fewer than thirteen distinct cluster techniques which Tudor both notated and described verbally. This was an unprecedented codification of the techniques Tudor had developed for his performances of *Feldman's Intersection 3*, extending the techniques to include a number of new ones. For a reproduction of this page from Tudor's *Text 2*, together with a tabulation of the cluster techniques found there, see Appendix C.

⁶⁸ Attack point 2025 is the locus of graph readings BJ 50, AR-1 31, AR-2 31, B-11 9, and B-2 23.

Sometimes, Tudor's notation subsumes the simultaneities into a single moment, or ictus, as at ap 1350 (Fig. 6-46). The attack point reflects three graph readings: B-8 9 (realized as the pentachord C5/A6/E6/Bb7/F#7), CD-11 (57) the stemmed F4), and BA-1 42 (the grace-note Bb7).

In actual performance, however, simultaneous occurrences of graph readings were interpreted with considerable flexibility, even freedom. That is, on the recording *Indeterminacy*, Tudor sometimes spreads the contents of coincident readings over one or two full seconds. In fact, at times the effect is not that of a discrete sonority but something very like a phrase.

All of these problems -- the demands on mobility within the instrumentarium, the alternation of performance techniques, and the coincidence of multiple graph readings at one attack point -- are then "scrambled" in presentation.

Use of Electronic Sound Sources

Cage claimed that for those graphs whose Key calls for some component of noise Tudor used radios in the performance at Columbia Teachers College and tracks from Cage's *Fontana Mix* (1958) for the recording of *Indeterminacy*, though Tudor disputes this.⁶⁹ A number of the notations in Tudor's realization, to be sure, specify sounds which require no electronic activation to produce them. In such cases, Tudor

⁶⁹ Cage, notes to *Indeterminacy*.

Fig. 6-46. Tudor, Text 2/Solo for Piano, p. 23: attack point *ap* 1350
(beginning of system 2)

The image shows a page of musical notation for piano. The page is oriented vertically. At the top, there is a vertical line with the number '15.' next to it. Below this, the musical score begins with a treble clef, a key signature of one sharp (F#), and a 2/4 time signature. The first measure contains a series of notes, with a dynamic marking of 'f' (forte) below the first note. The notation continues with several measures of music, including notes and rests. Some notes are marked with 'x' below them. The score is presented in a high-contrast, black-and-white format.

generally drew on his experience in performing Cage's earlier works calling for extra-pianistic instruments such as a rubber beater or hammer (34'46.776"), a stick or ruler bounced on the sound-board (*Music of Changes*), a duck whistle (*Water Music*). Other sources, such as the "Slinky" toy and the klaxon, were employed specifically for the two realizations of the *Concert for Piano and Orchestra*.

But electronic sounds are clearly part of the recording *Indeterminacy*. Whatever their source -- some of them could not have come from radios -- they seem to have been an elaboration of the music Tudor performed from his written score, for most of them are not notated in his realization, even at those attack points where the notations represent readings of graphs whose interpretations require noises. Furthermore, although Text 2/*Solo for Piano* is notated to show discrete attack points, some of the electronic sounds on the recording *Indeterminacy* continue for some time. This means that Tudor interpreted the single ictus in Cage's score to mean the inauguration of a sound whose duration could be subject to other aspects of his reading of the source graph. That is, an attack point could be equivalent to the cue "on" in electronics; duration in such cases could be determined by measuring the relevant point and line in such graphs as BB 45.⁷⁰

⁷⁰ Or the sound could simply be allowed to "play itself out", as is the case with those produced by stroking the amplified "Slinky" toy at, for example, ap 189. Not

Summary

With his second realization of the *Concert for Piano and Orchestra*, Tudor was already beginning to move beyond piano-playing as he had redefined it in the 1950s. In fact, if we compare his two realizations of the *Concert*, as I have done here in only the broadest of terms, we are in a position to make the following statement: Tudor's first realization, *Text 2/Concert for Piano and Orchestra*, offered him the opportunity to summarize both his pianistic achievements and his innovations. In his second realization, Tudor entered a new phase. Although *Text 2/Solo for Piano* shows clear connections, in both its content and preparation of performance material, to Tudor's earlier performances, it also marks the beginning of an evolution from pianist to what Larry Austin has called sonic artist.⁷¹ It was an evolution which would lead Tudor away from piano-playing almost entirely and into the world of live electronic music. Typically, Tudor would substantially create this new world himself.

until I recently saw, for the first time, Tudor performing *Text 2/Solo for Piano* (at Alice Tully Hall in New York on Saturday 4 December 1993) did I realize that one of the most "abstract" electronic sounds on Tudor's two recordings of this realization is produced simply by hanging a "Slinky" toy from a microphone stand, attaching a contact microphone to it, manipulating it by hand, and amplifying the resulting sounds.

⁷¹ Larry Austin, telephone interview with author, 19 March 1989.

Epilogue

Give it to David Tudor and see what happens.

Robert Clarida on the
indeterminacy attitude

try trill with jacks

David Tudor, work note for Cage,
Theatre Piece, part 3 (1960)

Ellsworth Snyder, who in 1970 completed the first doctoral dissertation on Cage, once lamented the fact that the music world never came to terms with David Tudor, adding that a study of Tudor's work would "put him in history."¹ This was my aim in the preceding chapters. I have offered the means toward a new understanding of American experimental music of the 1950s by examining a body of work which, in Austin Clarkson's discerning phrase, "looks at the music from the inside out."² But having reconstructed Tudor's processes of preparing indeterminate notations for performance, I am aware that I have raised more questions than I have answered (excusable, perhaps, only given the previous neglect of the subject).

¹ *John Cage and Music Since World War II: A Study in Applied Aesthetics*, Ph. D. diss., University of Wisconsin, 1970.

² Personal communication to author.

Not least among these questions there may seem to be lurking a paradox. For in spite of the composers' numerous pronouncements about spontaneity, unpredictability, and freedom, here was the music's first and most important performer working it out in advance with a rigor that is little short of astonishing. We have even seen that Cage himself made his own realization when he and Tudor performed Wolff's *Duo for Pianists I*. Do the aesthetics of indeterminacy stand at odds with Tudor's systematic means of ensuring it in performance?

We would do well to remember here that performance is, after all, not the same as composition. Cage even went so far as to claim that they are essentially unrelated; "composition, performance, and audition or observation are really separate things. They have next to nothing to do with one another."³ In this sense, Tudor's independence from the composers whose music he played exemplified Cage's dictum. But more importantly, Tudor's working methods were congruent to, even paralleled, the exactitude of Cage's own.⁴ And they were congruent to Cage's repeated insis-

³ *Silence*, 6, and story 69 in the recording *Indeterminacy*.

⁴ See especially Pritchett's discussion of the genesis of *Music of Changes* in *The Development of Chance Techniques in the Music of John Cage, 1950-56*, 107-56.

tence on *disciplined* anarchy, on "purposeful purposelessness."⁵

In fact, the paradox dissolves when we recognize that it is of our own making, a result of our highly selective (one is tempted to say indiscriminate) reading of the composers' statements on this point, and of Cage's texts in particular.⁶ The most comprehensive of these is probably "Indeterminacy," the second of the three lectures comprising "Composition as Process" (1958).⁷ Answering his own question, "How is the performer to perform [Feldman's] Intersection 3?," Cage begins a long series of replies with, "He may do this in an organized way which may be subjected successfully to analysis."⁸

⁵ "Experimental Music," *Silence*, 12.

This brings us full circle to the crucial aspect of Artaud's influence on Tudor, discussed in Chapter 2, pp. 35-38, above. Richard Kostelanetz has noted the important distinction between "ordered disorder" and "disordered disorder" in "John Cage: The Anarchic Art of the Polyartist," paper read at the festival-symposium "John Cage at Wesleyan," Wesleyan University, Middletown, Conn., 22-27 February 1988. It would take considerable effort to find more appropriate descriptives than "purposeful" and "ordered" in characterizing Tudor's realizations.

⁶ Cage was the most prolific and articulate writer of the four composers discussed in this dissertation, and he is the most frequently quoted on this and other matters relating to the music.

⁷ The lectures are briefly discussed in Chapter 6, pp. 223-24, above.

⁸ "Composition as Process: II. Indeterminacy," *Silence*, 36-37.

I have long suspected that, in and of itself, indeterminate notation yields little of analytic interest, a suspicion that has been strengthened in the course of writing this dissertation. But the study of Tudor's realizations can lead us, rather directly, to a solution to the perpetual problem of a proper subject for the analysis of experimental music of the 1950s. Discussions of the music have frequently been restricted to the composers' notation and to recordings treated as self-sufficient texts. The dilemma is that addressing the notation alone describes what may happen without saying what does. And analysis centered on recordings describes what does happen without showing why.⁹ I have shown instead that the performer's role in preparing, and not just executing, an indeterminate score is an essen-

⁹ For examples of the first kind of analysis, see Thomas De Lio's discussions of music by Cage, Feldman, Wolff, and Lucier, in *Circumscribing the Open Universe* (Lanham: University Press of America, 1984), passim, and Pritchett, *The Development of Change Techniques in the Music of John Cage, 1950-56*, passim. Judith Lochhead discusses recordings by Tudor and other performers in "Performance Practice in the Indeterminate Works of John Cage," unpublished paper read at the Fifty-Ninth Annual Meeting of the American Musicological Society, Montreal, 3-7 November 1993. Lochhead's paper is an application of the phenomenologically-oriented analytic methods developed in her Ph. D. dissertation, *The Temporal Structure of Recent Music* (State University of New York at Stony Brook, 1982). David Behrman's, "What Indeterminate Notation Determines," in *Perspectives of Notation and Performance*, ed. Benjamin Boretz and Edward T. Cone (New York: W. W. Norton, 1976), 74-89, is a somewhat middle case, linking the notation of works by Wolff (*Duet II for Horn and Piano*) and Feldman (*Projection 4* and *Durations III*) to the Time/Mainstream recordings of them by Tudor and various colleagues. Behrman gives no indication, however, that in the recording of *Duet II* Tudor was performing from his realization.

tial component of a process, and that we therefore have a seriously defective understanding of this music when we approach it on the basis of its notation or performance alone. I have suggested, in other words, that Tudor's realizations are part of a chain -- its missing link, to press the metaphor -- consisting of notation, realization, and performance.

Guiding this dissertation from the beginning has been the conviction that Tudor's career has amounted to a drastic reformulation of the concepts of and the capacities for musical performance. It is one thing to size up a musical work, then apply one's technical equipment to mastering it; this is, after all, what we usually think of as "learning a piece." And it is but a slight extension of this to acquire or brush up on a particular technique when undertaking the study of a work for which it is required (it is better, of course, to do this prior to the undertaking). It is quite another thing, however, to derive the work first -- to determine what it in fact will be, what its content is -- and only *then* devise or invent any new techniques needed to play it. This is the key to Tudor's achievement and to his legacy as a pianist.

Tudor did not merely interpret the notations of Cage, Feldman, Brown, and Wolff -- what I have called Text 1; he created the style of the music encoded in them by inventing

Text 2.¹⁰ But the correspondences between Tudor's performances and musical composition during the 1950s and 1960s were oblique rather than direct. In other words, it was not a case of composer hearing some unprecedented sound in a Tudor performance which found its way into a subsequent composition. Instead, by virtue of his imaginative solutions to the sometimes deliberately difficult problems of notation and performance, Tudor was in a very real sense a necessary and effective cause of its composition. By giving composers the "permissions" of which Feldman often spoke, Tudor *challenged* composers to go even further in the direction of radical innovations in the next work.¹¹

In fact, composers often thought of Tudor not as their interpreter but as an instrument.¹² Sometimes they meant this more than figuratively. In the preface to his *Five Piano Pieces for David Tudor* of 1959 (several of which are often reproduced as examples of musical graphics which are not implicative), Sylvano Bussotti wrote that the name in the title does not refer to the dedicatee but to the instru-

¹⁰ I am indebted to Ellsworth Snyder for this insight.

¹¹ See the remarks by Earle Brown at the end of Chapter 2, p. 45, above.

Larry Austin said of Tudor's unique qualities as a performer, "He makes more of the piece than you ever imagined could be made." Telephone interview with author, 19 March 1989.

¹² See the remarks by Christian Wolff on this, quoted in Chapter 2, p. 75, above.

ment for which the music was composed.¹³ Stanley Lunetta was even more direct; in his *Music for Bandoneon and Strings* (1967), he provides instructions, complete with illustrations, explaining how to play "the David Tudor."¹⁴ Hearing Tudor perform, a composer could assume that there were no limits to what could be asked of a performer, or to the ways in which one could ask it.

In similar manner, this type of indirect influence extended to performers. Alvin Lucier compared Tudor to the first runner to break the "four-minute mile"; once it had been done, he said, others followed.¹⁵ I have found no evidence that Tudor transmitted specific techniques of preparing realizations in his teaching.¹⁶ Instead, like

¹³ "L'espression 'For David Tudor,' usata nel titolo, non vuole essere una dedica ma, per così dire, quasi un'indicazione di strumento." *Five Piano Pieces for David Tudor (extraits de pièces de chair II)* (Universal Edition 13079 a-e [1959]).

¹⁴ In this work, Tudor's bandoneon-playing was controlled by ten strings operated by three other performers positioned above and behind a curtain as in a puppet show. Throughout the performance instructions, Lunetta refers to "the David Tudor." See Will Johnson, "First Festival of Live-Electronic Music, 1967," *Source 2*, 1 (January 1968), 50-54; the discussion of *Music for Bandoneon and Strings* is on pp. 53-54.

¹⁵ Alvin Lucier, interview with author, Middletown, Conn., 14 June 1989.

¹⁶ Tudor gave courses in the performance of new music as early as 1956, when he began an association with IFNM Darmstadt that continued through 1961. But the archive of the Musikinstitut Darmstadt, while it contains complete information about (and recordings of) Tudor's performances during his tenure there, has no documentation of his classes.

the composers who knew little of Tudor's preparatory work but only heard the results, other performers heard (and later saw, a distinction one should not minimize as experimental music increasingly resembled experimental theater) things previously unimagined which they incorporated into their own performances of new music.¹⁷ And it should go without saying that a working knowledge of how new music's pioneer performer approached his task can teach performers of it today new ways in which they might approach theirs.¹⁸

To some extent, Tudor's innovations were modifications of the instrument itself, a practice that began on a large scale in the late 1930s with Cage's prepared piano but goes back at least as far as the techniques invented by Henry Cowell ca. 1914. However, beginning with the amplifications devised for Cage's *Concert for Piano and Orchestra* and, later, the *Variations* series (1958-66), Tudor's interest in the piano began to shift from the piano as an instrument susceptible to modification to the piano as a sonic base to be transformed.

Wolff claimed that with few exceptions, Tudor's "technical knowledge was in advance of the composers who asked

¹⁷ As early as 1957, Cage wrote "Where do we go from here? Towards theatre. That art more than music resembles nature. We have eyes as well as ears, and it is our business while we are alive to use them." "Experimental Music," *ibid.*

¹⁸ Tudor would like to see some of his realizations published and made available to other performers.

him to use that knowledge." Eventually, Tudor himself must have become aware of this, aware that the greatest challenges were those he was setting for himself. "More and more," he said, "I felt I was playing my own sound imagination." As composers continued to offer him more technically and conceptually difficult works, he "felt like an actor playing the same role. I would look at a new piece and think, 'I've done this before.'"¹⁹ The implications of these factors are clear enough, even without benefit of hindsight. That is, it may have been inevitable that the freedoms entrusted him by composers, combined with his own extensions of the use of sonic materials in his realizations, and his sense of a decrease in the challenge he saw as essential to the composer-performer relationship, gradually led Tudor to create works to which he now signed his own name.

¹⁹ For Cage's view of this facet of Tudor's outlook, see note 26 in Chapter 1, p. 14, above.

Appendix A

Cage, draft of letter (addressee unknown) or program note on the *Concert for Piano and Orchestra*, 29 Jan 1958. The draft is probably reference to the first European performance of the *Concert*, which took place in Cologne on Friday 19 Sept 1958. Document in the David Tudor Collection.

Since my work in progress, a Concerto [sic] for Piano and Orchestra, will not have a score, the conductor, like the players, will have a part. There will exist a "book" of material, that is to say, a part, for each player involved. He will be required to make a program within an agreed upon time, using any amount of the material provided. This time will change as a result of the conductor's part, e.g. a minute will diminish to a fraction of itself or be augmented to a multiple.

At the present moment Jan 29, '58 I have nearly completed the part for the soloist, David Tudor. Having been composed in pencil, it requires being done in ink. The other parts much simpler in character will be done directly in ink. I contemplate composing parts for strings, percussion, brass & woodwinds, any of which may be used or eliminated in a performance. The work is [figure of three points in shape of a triangle] practical in character having any observed time-length and employing any number & kind of instruments. I will assuredly have material ready for a performance in the Fall of this year. Since the conductor's action will not be conventional, I would undertake it myself or provide one trained by me.

Appendix B

Concert for Piano and Orchestra: Tudor's tabulation of the 84 graphs in the "Solo for Piano" according to the pages on which they occur in Cage's score.

A	1, 5-6, 45-47, 49, 49-51, 53	T	12, 16-17, 41-42
B	1-2, 9, 23-25, 34-36, 53, 55-57	U	16
C	1, 1	V	18
D	2-3, 4, 37	W	18, 26-28, 36-39
E	2-4, 20, 49-51	X	19-21
F	2-3	Y	19-21, 38-39
G	4, 9, 11-12, 21-22	Z	19, 37
H	4, 36, 50		
I	5-8, 12, 29, 46-47		[col. 2]:
J	5-7, 25-26	AA	21-23, 29-31, 43-44
K	8, 9, 43-44	AB	20-21
L	10	AC	21-23, 31
M	9, 19-20, 22-23, 30, 43-44	AD	20-21, 33, 37-40
N	9-10	AE	21-22, 56-57
O	10-12, 27, 42-43, 58	AF	20-21
P	9-10	AG	20-21
Q	10-11, 27-28	AH	23
R	9-10	AI	24-25, 36-39
S	12-14, 34, 42-44	AJ	26-27

AK	25-26, 49-50	BJ	50
AL	26-27, 45	BK	49-50, 52, 53
AM	26-28	BL	51-52
AN	27, 47-48	BM	50, 60
AO	30-31, 47-49	BN	50-51
AP	28-29	BO	52-53
AQ	30-31	BP	51
AR	31	BQ	55
AS	31, 56-57	BR	51-52
AT	39, 43-44	BS	52
AU	38	BT	54
AV	37-38	BV	55-56
AW	38	BV	53
AX	38-40	BW	53-54
AY	40	BX	56, 56-57
AZ	42-43	BY	54-55
		BZ	55-56
	[fol. 1v, col. 1]:		
BA	42, 56		[col. 2]:
BB	45-46, 53	CA	55-56
BC	47	CB	55-56
BD	47	CC	57
BE	47	CD	57
BF	47	CE	59-60
BG	47-48, 63	CF	62
BH	50		
BI	50-51		

Appendix C

Cluster techniques used and/or invented by Tudor for his first realization of Cage, *Concert for Piano and Orchestra*, graph J 5. Source: manuscript of realization, David Tudor Collection.

System 1:

1. Bounce 3 fingers of l. h. on white-key trichords [cue: "Bounce 3 fing. lh"]
2. Flat of l. h. on black-key hexachord [cue: "lh (flat)] downward glissando, C8-D6 [cue: wavy ↓]
3. Arm (l. h. and r. h.) cluster on white-key decachords [cue: "arm"]
4. Left-hand fist roll on chromatic trichords [cue: "l. fist" under wavy line]
5. Alternating edge [of ?] l. h. and r. h. on white-key clusters, various sizes [cue: "l & r edge (alt.)"]
6. Left hand and right hand clasped and rolled on chromatic tetrachords [cue: "l & r clasped" under wavy line]
7. Pinch r. h. on chromatic and diatonic dyads B6-C6, F#4-G#4 [cue: "pinch rh"]

System 2:

8. Right-hand palm roll with figure of a wavy line on chromatic decachords [cue: "r. palm" under wavy line]
9. Tremolo on chromatic dyad D#2-E2 [cue: "6 x 2 l & r" with tremolo stems on quarter-notes]
10. Roll open r. fist on chromatic tetrachords [cue: "r. fist open" under wavy line]

11. Flat of r. h. and l. h. on chromatic decachords and dodecachord in downward glissandos [cue: "rh" and "lh (flat" under wavy ↓]
12. Knead l. h. in upward roll on chromatic octachords [cue: "knead l. h." under wavy arrow in upward diagonal]
13. Palm glissando with l. h., ascending D#2-G#7 [cue: "l. palm gliss." and ascending arrow drawn as part of the notational stem]
14. Grasped bunches with r. h., chromatic decachords spanning a tritone/0-6; chromatic pentachord spanning a 4th/0-5 [cue: "grasped bunches r.h."]

Tudor, first realization of Concert for Piano and Orchestra:
realization of graph J 5

The image shows a handwritten musical score on a five-line staff. The notation includes various rhythmic and melodic figures, with several annotations and diagrams. Key annotations include:

- PINCH RH** at the top right.
- LSR EDGE (ALT.)** on the left side.
- ARM** in the middle left.
- BOUNCE 3 FING. LH** in the middle left.
- NU L.FIST** in the middle left.
- NU R.FIST OPEN** in the middle right.
- GRASPED BUNNIES R.H.** in the middle right.
- NUFAD C.H.** in the middle right.
- L.FIRST** at the bottom right.
- NUFAD** at the bottom right.
- NUFAD** at the bottom right.
- NUFAD** at the bottom right.

There are also several diagrams showing hand positions and fingerings, often enclosed in boxes or rectangles. Some diagrams include numbers like 7, 8, 9, 10, and 11. The score is written in black ink on a white background. At the bottom of the page, there is a stamp that reads "PASSANTINO BRANDS 'MIDGET' FILLER" and a date "11-30-57".

PASSANTINO BRANDS "MIDGET" FILLER 11-30-57

Appendix D

First Performances by David Tudor through 1960

The following index is primarily based on Tudor's collection of programs, which is virtually complete for his entire career but has been catalogued only through the year 1960. A number of the programs make no reference to the premiere status of a performance. In such cases, and after comparing the additional evidence in the other Principal Sources shown below, I have assumed the earliest program to be that of the work's first performance, and have identified these parenthetically, e.g. (Prem).

Principal Sources

Programs in the David Tudor Collection

David Vaughan, "A Chronology." *Dance Perspectives* 34 (Summer 1968), 54-65, special number devoted to Merce Cunningham, who is the subject of Vaughan's chronology.

Dunn, Robert, *John Cage*. New York: Henmar Press of C. F. Peters Corp., 1962 (Peters Cat.).

David Tudor in Darmstadt[:] *Verzeichnis der von David Tudor während der "Internationalen Ferienkurse für Neue Musik" 1956-1961 interpretierten Kompositionen (einschliesslich Ensemblespiel)*. Internationales Musikinstitut Darmstadt, unpubl. typescript, n.d.

"Neue Musik in Darmstadt 1946-1958." *Darmstädter Beiträge zur Neuen Musik*, vol. 2, ed. Wolfgang Steinecke (Mainz: B Schott's Söhne, 1959), 75-94.

_____. "Kranichsteiner Chronik 1958." *Ibid.*, 69-74.

_____. "Kranichsteiner Chronik 1959." *Ibid.*, vol. 3 (1960), 107-11.

_____. "Kranichsteiner Chronik "1960-1961." *Ibid.*, 112-28.

Abbreviations

DT = David Tudor; JC = John Cage; MC = Merce Cunningham;
IFNM = International Ferienkurse für Neue Musik Darmstadt;
(N)WDR = West German Radio Cologne

Prem = first performance; Am prem = first performance in the United States; NY prem = first performance in New York; Eur prem = first performance in Europe; D prem = first performance with dance

Amey, Frank (b. 1925)

Piece for 2

Wed 11 Nov 1959, Riddotto Teatro Eliseo; w Frank Amey,
pn
•Prem

Antheil, George (1900-1959)

Ballet mécanique (1923-24/rev. 1953)

Sat 20 Feb 1954, Columbia Univ., NYC; w Robert Starer,
Jean Middleton, Harriet Seer, pn; George Gabor, Al
Howard, Bradley Spinney, Bob Christian, Sperie Karas,
Milton Schlesinger, Elayne Jones, Joe Castka, Leonard
Shulman, perc.; Carlos Surinach, cond.
•Prem of revised version.

Behrman, David (b. 1937)

Canons (1959/60)

Wed 2 Dec 1959, Maison du Peuple de Brussels; w
Christoph Caskel, perc
•(Prem)

Duo for Piano and Percussion

Sun 20 Nov 1960, Statene Museum for Kunst, ?Stockholm;
w Christoph Caskel, perc

Remarks. This is probably the same work as above.

Boulez, Pierre (b. 1925)

Première Sonate, pn (1946).

Tu 12 Aug 1952, Black Mountain College.
•Am prem

W 28 Apr 1954, Carl Fischer Concert Hall, NYC.

•NY prem

Deuxième Sonate, pn (1946-48).

Sun 17 Dec 1950, Carnegie Recital Hall, NYC.
•Am prem

Sonatine, fl & pn (1946).

Sun 15 Jul 1956, IFNM Darmstadt; w Severino Gazzelloni,
fl.

•(Prem)

Remarks. According to Jameux, this work may have
been given a private performance in Brussels in
1947 by Jan van Boterdael, fl, and Marcelle

Mercenier, pn. See Boulez, 22. The above entry would then reflect the second performance.

Th 7 Jan 1958, 316 East 63rd Street, NYC; w Samuel Baron, fl.

•Am prem

Remarks. Concert given under the auspices of the B. de Rothschild Foundation for the Arts and Sciences.

Structures, premier livre, Ia, Ic, 2 pn (1951-52).
Mon 22 Dec 1952, Columbia Univ., NYC; w Pierre Boulez, pn

•Am prem

Remarks. This unannounced performance took place following a concert devoted to *musique concrète*, given under the auspices of the Composers Forum during Boulez's first visit to the United States in December 1952. The concert was moderated by Cage; Boulez introduced each part of the program and answered questions from the audience after the concert. The program lists only electronic music by Schaeffer, Henry, Hodeir, Messiaen, and Boulez. At the bottom of Tudor's copy of the program is memo, in pencil and in Tudor's later handwriting, "STRUCTURES 1A, 1C (WITH BOULEZ)." Cowell, who assisted Boulez in the discussion which followed the concert (Boulez spoke little English at the time), wrote a brief review of the concert, in which he did not mention any instrumental music on the program. "Current Chronicle," *Musical Quarterly*, 39, 2 (April 1953), 254-55.

30 May 1956, Carl Fischer Concert Hall, NYC; w Maro Ajemian, pn

•Am prem

Remarks. This was the first "official," i.e. announced, performance of *Structures Ia* in the United States.

Brown, Earle (b. 1926)

Folio: December 1952 (1952)

Sat 24 Sept 1960, Teatro la Fenice, Venice; w JC, pn; w dance "Hands Birds" by MC (poem by M. C. Richards)

•prem, D prem

Four More (1956)

W 30 May 1956, Carl Fischer Concert Hall, NYC.

•Prem

W 12 Dec 1956, Kunstgewerbemuseum, Zurich.
 •Eur prem

Four Systems (1954)

W 28 Apr 1954, Carl Fischer Concert Hall, NYC.
 •Prem

W 3 Nov 1954, Kunstgewerbemuseum, Zurich.
 •Eur prem

Fri 18 May 1956, Washington Hall, Univ. of Notre Dame,
 South Bend, Ind.; w dance "Galaxy" by MC.
 •D prem

Th 7 Feb 1957, Hobart and William Smith Colleges, Gene-
 va, NY; w JC, pn

•Prem of version for 2 pn

Note. In the program for this concert, the work
 is entitled "Galaxy."

Tu 30 Apr 1957, Carl Fischer Concert Hall, NYC; w
 Grete Sultan, William Masselos, JC, pn
 •Prem of version for 4 pn, arr. Brown.

W 3 Sep 1958, IFNM Darmstadt; w JC, pn
 •Eur prem of version for 2 pn

Hodograph I (1959)

Tu 1 Sep 1959, IFNM, Darmstadt; w Severino Gazzelloni,
 fl; Christoph Caskel, perc

•Prem

Indices (1954) (music for the dance "Springweather and
 People" by MC).

Tu 24 May 1955, Bard College, NYC.

•Prem

Note. Orig. for orch, arr. ?by DT for pn.

Music for Cello and Piano (1955)

Sun 26 Apr 1959, Village Gate, NYC; w David Soyer, vc
 •(Am prem)

Pentathis (1957-58)

Th 11 Sept 1958, IFNM Darmstadt; w Domaine Musical ens
 cond. by Bruno Maderna

•Prem

Perspectives (1952)

Sun 22 Mar 1953, University of Illinois, Urbana.

•Prem

W 28 Apr 1954, Carl Fischer Concert Hall, NYC.
•NY prem

Tu 19 Oct 1954, NWDR Musik der Zeit, Cologne.
•Eur prem

Three Pieces for Piano (1951)
Sun 10 Feb 1952, Cherry Lane Theatre, NYC.
•Prem

Twenty-five Pages (1953)
W 14 Apr 1954, Carl Fischer Concert Hall, NYC.
•Prem

Tu 30 Apr 1957, Carl Fischer Concert Hall, NYC; w JC,
William Masselos, Grete Sultan, pn
•Prem version by composer for 4 pianos

Bussotti, Sylvano (b. 1931)

Pieces de Chair II: Five Piano Pieces for David Tudor
(1959)
Sat 29 1959, IFNM, Darmstadt (nos. 2, 3, 5)
•Prem

Wed 28 Oct 1959, Staatliche Hochschule für Musik,
Cologne (nos. 2, 3, 4)
•Prem no. 4

Mon 28 Mar 1960, Living Theatre, NYC
•Prem no. 1
•Am prem nos. 1-5

Cage, John (1912-92)

Cartridge Music (1960)
Th 6 Oct 1960, Atelier Mary Baumeister, Cologne; w JC,
Cornelius Cardew, Hans Georg Helms, Christian Wolff,
Mauricio Kagel, Benjamin Patterson, Kurt Schwertsik
•Prem

Remarks. Performed simultaneously with *Solo for
Voice 2*; the latter work was performed by JC.

Mon 10 Oct 1960, Moderna Museet, Stockholm; w JC
Remarks. First performance by JC and DT alone.
The American prem was given by JC and DT on Th 20
Apr 1961, at the Museum of Modern Art, NYC.

Concert for Piano and Orchestra: Solo for Piano (1957-
58)

Th 15 May 1958, Town Hall, NYC; w ens cond. by MC.
 •Prem of first realization by DT

Sun 25 May 1958, Village Vanguard, NYC.
 •Prem of version w vc (*Solo for Voice 1*), w Arline
 Carmen, contralto

Th 14 Aug 1958, Connecticut College, New London; w
 dance "Antic Meet" by MC.
 •D prem

F 19 Sep 1958, NWDR Musik der Zeit, Cologne.
 •Eur prem

Concert for Piano and Orchestra: Solo for Piano
 April 1959, Columbia Teachers College, NYC; w JC,
 reader.

•Prem of second realization by DT
Remarks. Performed simultaneously with Cage:
Indeterminacy.

Mon 4 Apr 1960, Living Theatre, NYC; w JC, asst
 •Prem

Remarks. Performed simultaneously with Cage:
Fontana Mix.

Concerto for Prepared Piano and Chamber Orchestra
 (1951)

Sun 12 Oct 1952, Cooper Union Music in the Making
 Series, NYC; w ens cond. by David Broekman.

•Prem
Remarks. Peters Cat., 33, erroneously gives the
 date of the first performance as "Jan. 1952." The
 program of the concert is undated. But in her
 March 1953 summary article on the six concerts of
 the 1952-53 "Music in the Making" series, of which
 this concert was a part, Peggy Glanville-Hicks
 identifies several of the works performed during
 the series. She does not mention Cage's Concerto
 but does refer to its two companion pieces on the
 program -- which pieces are, of course, listed on
 the undated program of the concert itself -- Otto
 Luening's *Pilgrim's Hymn for Chorus and Orchestra*,
 and Roger Goeb's *Concertant No. IV for Clarinet,*
Strings, Piano, and Percussion, noting that both
 were performed on the concert of 12 October. See
 P. Glanville-Hicks, "Music in the Making at Cooper
 Union," *International Musician* (March 1953), 13.

For M. C. and D. T. (1952)
 Aug 1952, Norwalk, Conn.
 •(Prem)

For Paul Taylor and Anita Dencks (1957)

Sun 20 Oct 1957, Kaufmann Concert Hall, YM-YWHA, NYC; w dance "Duet" by Paul Taylor.

•Prem

Seven Haiku (1952)

M 26 Nov 1956, home of Ernst Brücher, Cologne

•Prem

Remarks. DT performed 4 otherwise unidentified *Haiku*.

Sun 17 Nov 1957, The Nonagon, NYC.

• Am prem

Remarks. DT performed 4 otherwise unidentified *Haiku*. His work notes and performance score of the work show that he prepared all seven of the *Haiku*.

Imaginary Landscape No. 4 for Twelve Radios (24 Performers) (1951)

Th 10 May 1951, Columbia University, NYC, ens cond. by JC

•Prem

Music for Amplified Toy Pianos (1960)

Th 25 Feb 1960, Wesleyan University, Middletown, Conn.

•Prem

Mon 4 Apr 1960, Living Theatre, NYC

•NY prem

Music for Carillon No. 1 (1952)

Th 15 May 1958, Town Hall, NYC.

•Prem

Remarks. Peters Cat., 25, states that this was *Music for Carillon No. 1* (1952); the program for this, the Twenty-Five Year Retrospective Concert of the Music of John Cage, states that it was the (unnumbered) *Music for Carillon* (1954).

Music for Piano 2 (1953)

Sun 10 Jan 1954, Educational Alliance, NYC; w dance "Dark Thoughts," by Louise Lippold

•Prem, D prem

Music for Piano 4-19 (1953)

July 1953, Black Mountain College

•Prem

W 28 Apr 1954, Carl Fischer Concert Hall, NYC

•NY prem

- Music for Piano 69-84 (1952-56)*
 July 1953, Black Mountain College, Black Mountain,
 North Carolina (nos. 4-19 [1953])
 •Prem
- Wed 30 Dec 1953, Theatre de Lys, NYC (nos. 4-84); w
 dance "Solo Suite in Space and Time" by MC
 •NY d prem (1-20)
- Sun 10 Jan 1954, Educational Alliance, NYC (no. 2
 [1953]); w dance "Dark Thoughts" by Louise Lippold.
 •(D) prem (no. 2)
- Wed 28 Apr 1954, Carl Fischer Concert Hall, NYC
 •NY Prem (4-19)
- Fri 29 Oct 1954, Institute of Contemporary Arts, London
 •Eur prem (4-19)
- Wed 8 Dec 1954, Brooklyn Academy of Music, NYC; w dance
 "Minutiae" by MC
 •D prem (1-20)
- Fri 18 May 1956, University of Notre Dame, South Bend,
 Ind. (nos. 4-84); w dance "Suite for Five" by MC
 •D prem
- Sun 23 Oct 1955, New School for Social Research, NYC
 (title given as "Music for 2 Pianos"); w JC, pn
Remarks. specific pcc unidentified in source
 (Peters Cat, 12). There is no program for this
 performance in the Tudor Collection.
- Wed 30 May 1956, Carl Fischer Concert Hall, NYC (title
 given as "Music for 4 Pianos"); w Maro Ajemian, Grete
 Sultan, JC, pn
 •Prem of version for 4 pn
- Sat 12 Jan 1957, Brooklyn Academy of Music, NYC nos. 4-
 84); w dance "Suite for Five" by MC
 •NY d prem
- Wed 21 May 1958, University of Pittsburgh, Pittsburgh,
 Penn. (nos. 4-84); w dance "Suite for Two" by MC
 •D prem
- Wed 8 Oct 1958, International World's Fair, Brussels
 (title given as "Music for 3 Pianos"); w Marcelle
 Mercenier and JC, pn
Remarks. Specific pcc unidentified in source
 (Peters Cat, 12).

Music of Changes (1951)

Th 5 Jul 1951, Boulder, Col. (Part I)

•Prem

Tu 1 Jan 1952, Cherry Lane Theatre, NYC

•Prem

Th 4 Nov 1954, Studio Zurich (Part IV)

•Eur prem

Fri 23 Nov 1956, Staatliche Hochschule für Musik,
Cologne (Parts III, IV)

•Eur prem, III

Sat 24 Nov 1956, Galerie der Spiegel, Cologne (?compl)

•Eur prem

Remarks. The program for this concert does not specify whether DT performed all four parts of *Music of Changes* on this concert. However, DT recorded the complete work for WDR Cologne on Sun 25 1956; it is therefore probable, though not certain, that he performed it in its entirety work on this concert, given the day before he made the recording.

During the summer of 1956, DT gave six seminars in the performance of new music as part of his first year at Darmstadt. Kurtz says that DT performed and discussed *Music of Changes*, but the program book for the 1956 Darmstadt season shows no record of this. DT probably played the work in one of his seminars, rather than in public performance. *Stockhausen*, 87.

Fri Nov 30 1956, Akademie für Musik und darstellende
Kunst, Vienna (Parts I, III, IV)

•(Eur prem)

Music Walk (1958)Tu 14 Oct 1958, Galerie 22, Düsseldorf; w Cornelius
Cardew and JC, pn

•Prem

Mon 4 Apr 1960, Living Theatre, NYC; w JC, asst

•NY prem

Remarks. The Am prem of this work was given by La Monte Young on Sun 17 Jan 1960 at the Opus 1 Composers' Workshop, San Francisco.

Wed 5 Oct 1960, Friedrich-Wilhelm-Gymnasium, Cologne; w
dance "Music Walk with Dancers" by MC
•D prem

Two Pastorales (1951)

Sun 9 Dec 1951, Kaufmann Concert Hall, YM-YWHA, NYC
(no. 1); w dance "Idyll" by Merle Marsicano
•D prem

Sun 10 Feb 1952, Cherry Lane Theatre, NYC (no. 2)
•Prem

Tu 27 Nov 1956, Arbeitskreis für neue Kunst, Bonn
University (no. 2)
•Eur prem

Theatre Piece (1960)

Mon 7 Mar 1960, Circle in the Square Theatre, NYC; w
MC, Carolyn Brown, Arline Carmen, Frank Rehak, Don
Butterfield; JC, coordinator
•Prem

Variations I (1958)

Sat 15 Mar 1958, Women's College of the University of
North Carolina, Greensboro, North Car. (3 versions); w
JC, pn
•Prem

Tu 18 Mar 1958, Little Theater, Rutgers University, New
Brunswick, N. J.; w dance "Resemblance," by Paul Taylor
•D prem

Wed 3 Sep 1958, IFNM Darmstadt; w JC, pn
•Eur prem

Sun 20 Oct 1958, Kaufmann Concert Hall, YM-YWHA, NYC; w
dance "Resemblance" by Paul Taylor
•NY D prem

Water Music (1952)

Fri 2 May 1952, New School for Social Research, NYC
(title given as "66 W. 12," the address of the New
School)
•Prem

Fri 29 Oct 1954, Institute of Contemporary Arts, London
•Eur prem

Remarks. First performance under present title.

Winter Music (1957)

Sat 12 Jan 1957, Brooklyn Academy of Music, NYC; w JC,
pn

•Prem

Tu 30 Apr 1957, Carl Fischer Concert Hall, NYC; w Grete
Sultan, William Masselos, JC, pn

•Prem of version for 4 pn

Fri 3 Sep 1958, IFNM Darmstadt; w JC, pn

•Eur prem

Wed 8 Oct 1958, International World's Fair, Brussels; w
Marcelle Mercenier, JC, pn

•Prem of version for 3 pn

Sun 26 Apr 1959, Village Gate, NYC

•Prem of version for 1 pn

Wed 28 Oct 1959, Staatliche Hochschule für Musik,
Cologne

•Eur prem of version for 1 pn

M 4 Apr 1960, Living Theatre, NYC; w JC, pn

•NY prem

Remarks. Program states that this was a "first
New York performance," but see entry for 26 Apr
1959, above.

4'33" (1952)

Fri 29 Aug 1952, Maverick Concert Hall, Woodstock, NY

•Prem

Wed 14 Apr 1954, Carl Fischer Concert Hall, NYC

•NY prem

M 26 Nov 1956, home of Ernst Brücher, Cologne

•Eur prem

34'46.776" (1954)

Sun 17 Oct 1954, Resthall, Donaueschingen; w JC, pn

•Prem

Wed 15 Dec 1954, Carl Fischer Concert Hall, NYC

•Am prem

Remarks. Performed twice.

Sat 15 Oct 1955, Clarkstown High School, NYC; w Harold
Coletta, vla and jc, pn

•Prem of version for 2 pn and va

Cardew, Cornelius (1936-81)

Piano Sonata No. 3 (1958)
 Mon 21 Sep 1959, WDR Cologne
 •Prem

Mon 28 Apr 1960, Living Theatre, NYC
 •Am prem

Two Books of Study for Pianists (1958)
 Mon 11 Apr 1960, Living Theatre, NYC; w Toshi
 Ichihyanagi, pn
 •Am prem

Cowell, Henry (1897-1965)

Four Declamations with Return (1949)
 Fri 25 Mar 1960, New School for Social Research, NYC; w
 Seymour Barab, vlc
 •Prem

Remarks. This was the first public performance of
 the work, which had been recorded in 1949 by
 Seymour Barab and William Masselos, for whom it
 was written.

Hymn and Fuguing Tune No. 9 (1950)
 Mon 16 Nov 1953, New School for Social Research, NYC; w
 Sidney Edwards, vlc.
 •Prem

Evangelisti, Franco (b. 1926)

Proiezione sonore (Strutture per piano solo) (1955-56)
 Fri 12 Sep 1958, IFNM Darmstadt
 •Prem

Feldman, Morton (1926-1987)

Atlantis, version for 10 instr (1959)
 Sat 6 Feb 1960, Kaufmann Concert Hall, YM-YWHA, NYC; w
 Seymour Barab, vlc; Robert Jaspar, fl; Charles Russo, b
 cl; Ralph Froelich, hn; Andrew Baron, tr; Raymond
 Orcutt, trb; Sonya Kuhn, hp; Morris Goldenberg, xyl;
 Joseph Adato, vibr
 •(Prem)

Three Dances

Sun 17 Dec 1952, Kaufmann Concert Hall, YM-YWHA, NYC; w dance "Three Dances" by Merle Marsicano

•(D) prem

Decisive Moment

Sun 15 Apr 1951, (?Kaufmann Concert Hall, YM-YWHA), NYC; w dance "Decisive Moment" by Merle Marsicano

•(D) prem

Remarks. Work otherwise unidentified in source.

Extensions (1951)

Wed 22 July 1951, Black Mountain College, North Carolina; w Abraham Mishkind, vln

•Prem

Extensions III (1952)

Fri 2 May 1952, New School for Social Research, NYC

•Prem

Fri 29 Oct 1954, Institute of Contemporary Arts, London

•Eur prem

Sat 20 Dec 1958, Kaufmann Concert Hall, YM-YWHA, NYC; w dance "Images and Reflections" by Paul Taylor

•D prem

Remarks. Taylor's dance used this work and MF's *Intermissions 1-5*, q.v., and *Illusions 1-4*, q.v.

Extensions IV, 3 pn (1952-53)

Tu 30 Apr 1957, Carl Fischer Concert Hall, NYC; w Grete Sultan, William Masselos, JC, pn

•Prem

Figure of Memory

Sun 3 Apr 1955, (?Kaufmann Concert Hall, YM-YWHA), NYC; w dance "Figure of Memory" by Merle Marsicano

•(D) prem

Illusions, pn (1949)

1950, Preview Concert of the Composers' Workshop, NYC

•Prem

Remarks. Source is an undated program in the 1950 file of the David Tudor Collection.

Sat 20 Dec 1958, Kaufmann Concert Hall, YM-YWHA, NYC; w dance "Images and Reflections" by Paul Taylor

•D prem

Remarks. Taylor's dance used this work, listed as *Illusions 1-4*, i.e. the 4 movements of the piece, and MF's *Extensions III*, q.v., and *Intermissions 1-5*, q.v.

Intermissions I-V, pn (January 1951 [I-III, 1952 [V]), VI, 2 pn (1953)

Remarks. AG works-list shows only the entries *Two Intermissions*, dated 1950, *Intermission V*, dated 1952, and *Intermission VI*, dated 1953. The date for *Intermissions I-III* is that shown in the program of DT's recital of 5 July 1951. *Intermissions III* and *IV* are unpublished; the autographs are in the David Tudor Collection.

Th 5 July 1951, University of Colorado, Boulder
•Prem (I-III)

Sun 10 Feb 1952, Cherry Lane Theatre, NYC
•Prem, NY prem (III-V)

Tu 26 Oct 1954, Belgian National Radio, Brussels
•Eur prem (IV)

Sat 15 Mar 1958, Woman's College of the University of North Carolina, Greensboro, N. C. (*Vib*, performed 3 times); w JC, pn
•(Prem VI)

Remarks. "*Vib*" apparently refers to a second version or realization of this work. It is therefore possible that the first performance of *Intermission VI* was given, in a different form, at an earlier time.

Sat 20 Dec 1958, Kaufmann Concert Hall, YM-YWHA, NYC; w dance "Images and Reflections" by Paul Taylor
•D prem

Remarks. Taylor's dance used this work and MF's *Extensions III*, q.v., and *Illusions*, q.v.

Intersection 2, pn (1951)

Tu 1 Jan 1952, Cherry Lane Theatre, NYC
•Prem

Intersection 3, pn (1953)

Wed 28 Apr 1954, Carl Fischer Concert Hall, NYC
•Prem

Tu 19 Oct 1954, NWDR Musik der Zeit, Cologne
•Eur prem

Ixion, 10 instr (1958)

Sun 17 Aug 1958, Connecticut College, New London, Conn;
w dance "Summerspace" by MC
•(D) prem

Tu 16 Feb 1960, Phoenix Theatre, NYC
 •NY d prem

Last Pieces, pn (1959)
 Sun 26 Apr 1959, Village Gate, NYC
 •(Prem)

Marginal Intersection No. 1, orch (1951)
 (1952), Cooper Union Music in the Making Series, NYC; w
 orch (cond by Morton Feldman?)
 •Prem

Remarks. Date otherwise unspecified in source
 (program in the David Tudor Collection).
 Glanville-Hicks refers to this work, without men-
 tioning its title or the date of its performance,
 in her summary review of the 1952-53 "Music in the
 Making" series, "Music in the Making at Cooper
 Union," pp. 13, 35 (see under Cage, *Concerto for
 Prepared Piano and Chamber Orchestra*, above).

Nature Pieces, pn (1951)
 Fri 18 Jan 1952, Hunter College Playhouse, NYC; w dance
 "Changing Woman" by Jean Erdman
 •(D) prem

Remarks. This work is unpublished; a reproduction
 of the composer's holograph score, signed and
 dated "Morton Feldman 1951," is in the David
 Tudor Collection.

Piano (3 Hands) (1957)
 Sun 15 Dec 1957, Paine Hall, Harvard University, Cam-
 bridge, Mass.; w JC, pn
 •Prem

Piano Four Hands (1958)
 Mon 2 Mar 1959, Circle in the Square Theatre, NYC; w
 MF, pn
 •Prem

Piano Piece (1952)
 Mon 2 Mar 1959, Circle in the Square Theatre, NYC
 •(Prem)

Piano Piece (1956)
 Fri 30 Nov 1956, Akademie für Musik und darstellende
 Kunst, Vienna
 •(Prem)

Piece for Four Pianos (1957)
 Tu 30 Apr 1957, Carl Fischer Concert Hall, NYC; w Grete
 Sultan, William Masselos, JC, pn
 •Prem

Projection 4 (1951)

Mon 2 Mar 1959, Circle in the Square Theatre, NYC; w
Matthew Raimondi, vln
•(Prem)

Thoughts Out of Season

Th 29 Nov 1951, University of Georgia, Athens, Ga.; w
dance "Thoughts Out of Season" by Katherine Litz
•(Prem), d prem

Sun 23 Dec 1951

(Kaufmann Concert Hall, YM-YWHA, NYC)

•(NY d prem)

Remarks. Location unspecified, but the technical staff of the YM-YWHA is mentioned in the program.

Three Pieces, pn

Mon 2 Mar 1959, Circle in the Square Theatre, NYC

•(Prem)

Remarks. There is no work by this title in the David Tudor Collection. The performance may have been of three of the otherwise unidentified Piano Pieces composed between 1952-56.

Two Pianos (1957)

Sun 15 Dec 1957, Paine Hall, Harvard University, Cambridge, Mass.; w JC, pn

•Prem

Wed 3 Sep 1958, IFNM Darmstadt; w JC, pn

•Eur prem

Two Pieces, 2 pn (1954)

Fri 18 Nov 1955, Portland State Teachers College, Portland, Ore.; w JC, pn

•(Prem)

Wed 30 May 1956, Carl Fischer Concert Hall, NYC; w Maro Ajemian, pn

•NY prem

Variation

Fri 1 Jan 1954, Theatre de Lys, NYC; w dance "Variation" by MC

•NY d prem

Remarks. This is an unpublished work for solo piano; the autograph is in the Archive of the Cunningham Dance Foundation. The first performance, on Th 12 April 1951 at the University of Washington, Seattle, was evidently by Cage, who made a tour of the western states with Cunningham but without Tudor. See *Correspondance*, 155.

Gottschalk, Louis Moreau (1829-1869)

Banjo

Fri 21 Aug 1953, Black Mountain College; w dance

"Banjo" by MC

•D prem

Tu 29 Dec 1953, Theatre de Lys, NYC

•NY d prem

Ses Yeux

Sat 30 Nov 1957, Brooklyn Academy of Music, NYC; w

dance "Picnic Polka" by MC

•D prem

Remarks. This was a companion piece to "Banjo," above.

Greenberg, Florence

Unidentified music for the dances "The Room", "Scherzo", and "The Unsleping City" (the last of these with poem by Lorca) by Mary Anthony and Joseph Gifford

Fri 5 Nov 1949, Wheaton College, Norton, Mass.

•(D prem)

Sun 6 Mar 1949, Kaufmann Concert Hall, YM-YWHA, NYC

•(NY D prem)

Hambraeus, Bengt (b. 1928)

Cercles I (I: Spirales II: Rondes) (1955)

Mon 22 Apr 1957, Carl Fischer Concert Hall, NYC

•Am prem

Hansen, Alfred (b. 1927)

Alice Denham in 48 Seconds (1958)

Tu 7 Apr 1959, Kaufmann Concert Hall, YM-YWHA, NYC; w

The Audio-Visual Group

•(Prem)

Remarks. Hansen wrote this work while a student in Cage's course in experimental music at the New School for Social Research in New York during the summer of 1958, when it was informally performed, at least twice, by members of the class. The above performance was the public premiere. See Hansen, *A Primer of Happenings and Time/Space Art* (New York: Something Else Press, Inc., 1965), 95-102.

Harrison, Lou (b. 1917)

Adjustable Chorales (1951)

Th 29 Nov 1951, University of Georgia, Athens, Ga.; w
dance "Chorales for Spring" by Katherine Litz
•(D prem)

Sun 23 Dec 1951, YM-YWHA, NYC

• NY d prem

Remarks. Harrison composed this work for Litz at
Black Mountain College in the summer of 1951, when
Litz and Tudor may have first performed it there.

Changing Moment

Fri 18 Jan 1952, Hunter College Playhouse, NYC; w dance
"Changing Moment" by Jean Erdman

•(D prem)

Creature on a Journey

Sat 22 Oct 1949, Central High School of Needle Trades,
NYC; w dance " Creature on a Journey" by Jean Erdman

•(D prem)

Fugue (1947-52)

Sun 10 Feb 1952, Cherry Lane Theatre, NYC

•Prem

Remarks. This work is unpublished. The auto-
graph, signed and dated "Lou Harrison N. Y. C.
1947-52," is in the David Tudor Collection.

The Glyph

Fri 24 Aug 1951, ?Black Mountain College, North Car.; w
dance "The Glyph" by Katherine Litz

•(D prem)

Sun 23 Dec 1951, Kaufmann Concert Hall, YM-YWHA, NYC

•NY d prem

Io and Prometheus (1951)

9 July 1951, University of Colorado, Boulder, Col.; w
dance "Io and Prometheus" by Jean Erdman

•D prem

Fri 18 Jan 1952, Hunter College Playhouse, NYC

•(NY d prem)

The Perilous Chapel (1948)

Sat 22 Oct 1949, Central High School of Needle Trades,
NYC; w dance "The Perilous Chapel" by Jean Erdman

•(D prem)

Hauer, Josef (1883-1959)

Atonale Musik Nr. 5 (1922)

Sun 10 Feb 1952, Cherry Lane Theatre, NYC

•NY prem

Praeludium für Celesta

Sun 10 Feb 1952, Cherry Lane Theatre, NYC

•NY prem

Remarks. There is no entry for this work in the NG works lists, although there are a number of works for harmonium, all dating from 1919 or earlier; Tudor's source is an undated pencil copy in his own hand, headed "Praeludium für Celesta Josef Matthias Hauer."

Zwölftonspiel Mai 55, Juli 52, Juli 56, Labyrinthischer Tanz (1953)

Sat 30 Nov 1957, Brooklyn Academy of Music, NYC; w dance "Labyrinthian Dances" by MC; w JC, pn 4 hands.

•D prem

Hidalgo, Juan (b. 1927)

Aulaga (No. 1, 1959)

Tu 8 Nov 1960, Sala de Audiciones del Ilustrisimo Colegio de Abogados, Spain

•(Prem)

Higgins, Dick (b. 1938)

Six Episodes for The Antiquarian Theatre

Tu 7 Apr 1959, Kaufmann Concert Hall, YM-YWHA, NYC

•(Prem)

Hopkins, Kenyon

Song and Rondo

Sat 21 May 1949, Dalcroze Auditorium, NYC?; w David Oppenheim, cl

•(Prem)

Hovhaness, Alan (b. 1911)

Song

Sun 10 Jan 1954, Contemporary Arts Dance Concert,
Educational Alliance, NYC; w dance "Song" by Louise
Lippold
•(D prem)

Sprite

Sun 10 Jan 1954, Contemporary Arts Dance Concert,
Educational Alliance, NYC; w dance "Song" by Louise
Lippold
•(D prem)

Ichiyanagi, Toshi (b. 1933)

Music for Piano No. 2 (1959)

Mon 11 Apr 1960, Living Theatre, NYC
•Prem

Wed 5 Oct 1960, Friedrich-Wilhelm-Gymnasium, Cologne; w
dance "Waka" by MC
•D prem

Tu 8 Nov 1960, Sala de Audiciones del Ilustrisimo
Colegio de Abogados, ?Spain
•(Prem of version for 1 performer)

Kagel, Mauricio (b. 1932)

Transición I (1958-60)

Wed 22 June 1960, Akademie der Künste, Berlin; w
Christoph Caskel, perc
•Prem

Kahn, Erich Itor (1905-56)

Nenia (Judieas qui hac aetate Perierunt) (1940-43)

Th 1 Jun 1950, ISCM, Dalcroze Auditorium, NYC; w
Seymour Barab, vlc
•(Prem)

Koenig, Gottfried Michael (b. 1926)

Klavierstücke I, II (1957)

Mon 28 Mar 1960, Living Theatre, NYC
•Prem

Leibowitz, René (1913-1972)

Duo for Cello and Piano, Op. 23

Sun 28 Mar 1954, Columbia University, NYC; w Seymour Barab, vlc

•Prem

Maderna, Bruno (1920-1973)

Concerto for Piano and Orchestra (1959)

Wed 2 Sep 1959, IFNM, Darmstadt; w Hessian Radio Sym Orch, Bruno Maderna, cond

•Prem

Marchetti, Walter

Per una Ceremonia (1960)

Tu 8 Nov 1960, Sala de Audiciones del Ilustrisimo Colegio de Abogados, ?Spain

•(Prem)

Maxfield, Richard (1927-1969)

Peripateia, vln, sax, pn, tape (1960)

Sat 17 Dec 1960, Fashion Institute of Technology, NYC; w Terry Jennings, sax; La Monte Young, vln; w dance "Peripateia" by James Waring

•(Prem)

Remarks. Program lists this work as *Electronic Music with Piano, Saxophone and Violin*

Music w dance "Options" by Paul Taylor

Sat 13 Feb 1960, Hunter College Playhouse, NYC

•(Prem)

Stacked Deck, (opera, w Dick Higgins), vv, tape (1959)

Sun 26 Apr 1959, Village Gate, NYC

•(Prem)

Messiaen, Olivier (1908-1992)

Mode de valeurs et d'intensités (1949)

Sun 26 Oct 1952, Proctor Hall, Princeton University, Princeton, N. J.

•(Am prem)

Wed 28 Apr 1954, Carl Fischer Concert Hall, NYC

•NY prem

Quatuor pour la fin du temps (1941)
 Th 15 Jan 1959, Carl Fischer Concert Hall, NYC (New Music Concerts, Fourth Season, 1958-59); w Gerald Tarack, vln, Eric Simon, cl, Seymour Barab, vlc
 •Am prem

Nemiroff, Isaac (1912-77)

Concerto for Oboe and String Orchestra (1955)
 Sat 18 1956, Greenwich House Music School, NYC; w Josef Marx, ob
 •(Prem)

Sonata [No. 1] for Violin and Piano (1946)
 Tu 25 May 1948, Kaufmann Concert Hall, YM-YWHA, NYC; w Bernice Stochek, von
 •(Prem)

Nicolait, Eugene

Blood of the Lamb (Part I: The Beginning; Part II: The Becoming); w dance "Blood of the Lamb" by Katherine Litz
 Fri 24 Aug 1951, ?Brooklyn Academy of Music, NYC
 •(D prem)

Nilsson, Bo (b. 1937)

Bewegungen (1956)
 Mon 22 Apr 1957, Carl Fischer Concert Hall, NYC
 •Prem

Wed 5 Oct 1960, Friedrich-Wilhelm-Gymnasium, Cologne; w dance "Nightwandering" by MC
 •D prem

Remarks. This dance also used Nilsson's *Quantitäten*, q.v., and *Schlagfiguren*, q.v.

Quantitäten (1958)
 Th 9 Sep 1958, IFNM, Darmstadt
 •Prem

Remarks. Date of prem from Darmstadt index of DT performances. No recital by DT on this date is mentioned in the Darmstadt program book for 1958.

Mon 28 Mar 1960, Living Theatre, NYC
 •Am prem

Wed 5 Oct 1960, Friedrich-Wilhelm-Gymnasium, Cologne; w
dance "Nightwandering" by MC

•D prem

Remarks. This dance also used Nilsson's
Bewegungen, q.v., and *Schlagfiguren*, q.v.

VIII. *Schlagfiguren* (1956)

Sun 25 Nov 1956, WDR Cologne

•(Prem)

Remarks. This was a studio recording made for
broadcast by West German Radio Cologne.

Fri 30 Nov 1956, Vortragssaal der Akademie für Musik
und darstellende Kunst, Vienna

•(Prem)

Remarks. This was a public performance of
Schlagfiguren (see preceding entry).

Th 7 Feb 1957, Hobart and William Smith Colleges,
Geneva, N. Y.

•(Am prem)

Mon 22 Apr 1957, Carl Fischer Concert Hall, NYC

•NY prem

Wed 5 Oct 1960, Friedrich-Wilhelm-Gymnasium, Cologne; w
dance "Nightwandering" by MC

•D prem

Remarks. This dance also used Nilsson's
Bewegungen, q.v., and *Quantitäten*, q.v.

Three Pieces for Piano

Sun 7 July 1959, Village Gate, NYC

•Am prem

Remarks. These were probably the 3 pieces listed
by title above.

Nordenstrom, Gladys (b. 1924)

Rondo for Flute & Piano (1955)

Fri 20 July 1956, IFNM, Darmstadt; w Severino
Gazzelloni, fl

•Prem

Petersen, Jerry

Green Song

Sun 3 Apr 1955, Henry Street Playhouse, NYC; w dance
"Green Song" by Merle Marsicano

•(D prem)

Images

Sun 3 Apr 1955, Henry Street Playhouse, NYC; w dance
 "Green Song" by Merle Marsicano
 •(D prem)

Maenad

Sun 17 Feb 1952, Kaufmann Concert Hall, YM-YWHA, NYC; w
 dance "Maenad" by Merle Marsicano
 •(D prem)

Pew, Alfred

Lady Macbeth

Fri 5 Nov 1948, Gymnasium, Wheaton College, Norton,
 Mass.; w dance "Lady Macbeth" by Mary Anthony
 •(D prem)

Sun 6 Mar 1949, Kaufmann Concert Hall, YM-YWHA, NYC
 •(NY D prem)

Pousseur, Henri (b. 1929)

Exercises: Impromptu (1956)

Th 6 Dec 1956, Sala piccola del conservatorio, Milan
 •Prem

Th 7 Feb 1957, Hobart and William Smith Colleges,
 Geneva, N. Y.
 •Am prem

Mon 22 Apr 1957, Carl Fischer Concert Hall, NYC
 •NY prem

Exercises: Variations IIe (1956)

Th 6 Dec 1956, Sala piccola del conservatorio, Milan
 •Prem

Th 7 Feb 1957, Hobarth and William Smith Colleges,
 Geneva, N. Y.
 •Am prem

Mon 22 Apr 1957, Carl Fischer Concert Hall, NYC
 •NY prem

Variations I

Fri 23 Nov 1956, Staatliche Hochschule für Musik,
 Cologne
 •Prem

Mon 22 Apr 1957, Carl Fischer Concert Hall, NYC
 •Am prem

Rochberg, George (b. 1918)

La Bocca della Verità, ob & pn (1959)
 Th 21 Jan 1960, Philadelphia Ethical Society; w Josef
 Marx, ob
 •Prem

Satie, Erik (1866-1925)

Trois Morceaux en Forme de Poire (1890-1903)
 Sat 22 Aug 1953, Black Mountain College, N. C.; w dance
 "Septet" by MC; w JC, pn
 •D prem

Tu 29 Dec 1953, Theatre de Lys, NYC
 •NY d prem

Parade: Ragtime
 W 30 Dec 1953, Theatre de Lys, NYC; w dance "Ragtime-
 Parade" by MC
 •D prem

Schwertsik, Kurt (b. 1935)

Klavierstück
 Th 19 Nov 1959, Mozartsaal, Vienna
 •Prem

Mon 28 Mar 1960, Living Theatre, NYC
 •Am prem

Shapey, Ralph (b. 1921)

Form, pn (1959)
 Fri 22 May 1959, Carl Fischer Concert Hall, NYC
 •Prem

Simons, Netty (b. 1913)

Piano Work (1952)
 Tu 5 May 1953, Carnegie Recital Hall, NYC
 •(Prem)

Sonata for Piano

Tu 14 Feb 1956, broadcast by WNYC, NY

•(Prem)

Songs: Early Ballad, Sleep Song, Aubade (words by Hilda Morley) (1950)

Tu 5 May 1953, Carnegie Recital Hall, NYC; w Charlotte Bloecher, v

•(Prem)

Spinner, Leopold (1906-80)

Sonata, pn (1943)

Mon 13 Apr 1953, Kaufmann Concert Hall, YM-YWHA, NYC
(ISCM Second Forum)

•(Prem)

Stockhausen, Karlheinz (b. 1928)

Klavierstücke

The history of the early performances (and not only Tudor's) of *Klavierstücke I-VIII* is rather tangled. Pieces I through IV were composed in the years 1952-53 and first performed, by Marcelle Mercenier, on 21 August 1954 at Darmstadt. Mercenier also played Pieces V through VIII at Darmstadt the next year, on 1 June 1955, in a performance usually considered the premiere.¹

The program for the recital by Tudor and Cage on Wednesday 15 December 1954, their first after meeting Stockhausen on the European tour of the fall, states that Tudor performed "Nr. 2 Klavierstücke I-VIII." But in Stockhausen's system of cataloguing his works by groups and subgroups, "Nr. 2" refers to *Klavierstücke I-IV*; Pieces V through VIII, as well as Pieces IX and X, comprise group "Nr. 4". Nevertheless, the program is unequivocal in enumerating the premiere status of the later pieces: "First Performances Anywhere of Klavierstücke VI-VIII."²

¹ See, for example, "Neue Musik in Darmstadt 1946-1958", *Darmstädter Beiträge zur Neuen Musik* 2 (Mainz: Schott, 1959), 92, and the works lists in G. W. Hopkins's article on Stockhausen in the *New Grove*, 18:157, and Kurtz, *Stockhausen*, 251.

² Program in the Collection of David Tudor. Following the Stockhausen, Tudor and Cage gave the first American performances of Cage's 34'46.776"; after an intermission,

In his first letter to Tudor, dated 5 December 1954 (before Tudor had even returned to America), Stockhausen wrote that he that he had only the day before completed *Klavierstück VI* and was sending it to Tudor, adding his doubt that it could be prepared in time for the concert of 15 December.³ Tudor, whose own recollection of the concert is vague, has suggested that he performed all the pieces except the Sixth. It is also possible that he followed Stockhausen's advice by playing but part of the sixth piece. The press reviews refer only to a "group" or "selection" of piano pieces by Stockhausen, but this is not of much help here, since it would have been easy to lose count of a series of works in such an unfamiliar idiom.⁴ It is my conclusion that Cage had the programs printed in the expectation that Tudor would perform all eight of the *Klavierstücke* and that Tudor very possibly did just that. If this is correct, the occasion also marked the first performance of *Klavierstück V*.⁵

Finally, two programs of recitals given in 1956 contain conflicting claims regarding the premiere status of Pieces V-VIII. The program of the recital by Tudor and Cage at Harvard on Friday 20 April 1956 includes the entry "Stockhausen: *Nr. 2 Klavierstücke VII-VIII* (VII - World Premier)." The next month, on a concert at Carl Fischer Concert Hall in New York, Tudor performed what is shown in the program as "Stockhausen: *Nr. 2, Klavierstücke V-VIII*," and Pieces VI and VII are listed among the first performances on the program.

the entire program was repeated.

³ "I worked very hard during the last three months, and the 6th piece was finished before yesterday. So you will receive it in three days, because I attend still the copies. It seems rather impossible to me that you can work it until the 16th [sic], because it is very long and difficult to play. So you'll play only six pieces, or, if you want, a part of the sixth." Stockhausen, letter to Tudor, 5 December 1954, David Tudor Collection.

⁴ "J. B.", "'Prepared Pianos' Loaded for Concert", *New York Times*, Thursday 16 December 1954, p. 50, and P[eggy] G[lanville]-H[icks], "John Cage, David Tudor", *New York Herald Tribune*, Thursday 16 December 1954, p. 22.

⁵ *Per contra* the Stockhausen works-lists in *New Grove*, and followed by Kurtz, in which the first performance of the Fifth Piece is attributed to Mercenier, also at Darmstadt on 21 August 1954.

In the following entries, I have included the relevant information from all of the programs discussed above.

Nr. 2. Klavierstücke I-VIII

Wed 15 Dec 1954, Carl Fischer Concert Hall, NYC

•Prem nos. VI-VIII

Remarks. Title thus in program; recte: *Nr. 2, I-IV, Nr. 4, V-VIII.*

Fri 23 Nov 1956, Hochschule für Musik, Cologne (in order of performance, nos. I, II, V, III, IV)

•(German prem)

Remarks. Tudor's program reads "Erstaufführung," but see entry re Klavierstücke I-VIII, above.

Fri 20 Apr 1956, Sanders Theatre, Harvard University, Cambridge, Mass. (VII-VIII)

•(Prem no. VII)

Remarks. dt prog reads "World Premier" of No. VII, but cf. entry re Klavierstücke I-VIII, above, *per contra.*

Nr. 4. [recte: Nr. 7] Klavierstück XI

Mon 22 Apr 1957, Carl Fischer Concert Hall, NYC

•Prem

Kontakte (1959-60)

Sat 11 Jun 1960, WDR Cologne; w Christoph Caskel, perc; Karlheinz Stockhausen, elec

•Prem

Refrain für drei Spieler, pn + woodblocks, cel + crotales, vib + cowbells + glock (1959)

Fri 2 Oct 1959, Hochschule für Musik, Berlin; w Cornelius Cardew, cel; Siegfried Rockstroh, perc

•Prem

Wed 28 Oct 1959, Staatliche Hochschule für Musik, Cologne; w Cornelius Cardew, cel; Siegfried Rockstroh, perc

Wolff, Christian (b. 1934)

Duo for Pianists I (1957)

Sun 15 Dec 1957, Paine Hall, Harvard University, Cambridge, Mass.; w JC, pn

•Prem

Duo for Pianists II (1958)

Wed 3 Sep 1958, IFNM, Darmstadt; w JC, pn
 •Prem

Mon 11 Apr 1960, Living Theatre, NYC; w Toshi
 Ichiyangi, pn
 •Am prem

For Pianist (1959)

Wed 28 Oct 1959, Staatliche Hochschule für Musik,
 Cologne
 •Prem

Mon 4 Apr 1960, Living Theatre, NYC
 •Am prem

For Piano with Preparations (1958)

Tu 9 Sep 1958, IFNM Darmstadt
 •(Eur Prem)

Remarks. Source (*Darmstädter Beiträge* 2, 94) says
 this was "Erstaufführung" (as distinct from an
 "Uraufführung").

Mon 4 Apr 1960, Living Theatre, NYC
 •NY (Am?) prem

For Piano I (1952)

Sun 10 Feb 1952, Cherry Lane Theatre, NYC
 •Prem

Sat 22 Aug 1953, Black Mountain College, N. C.; w dance
 "Untitled Solo" by MC
 •D prem

Th 31 Dec 1953, Theatre de Lys, NYC
 •NY d prem

Wed 26 Oct 1954, Belgian National Radio, Brussels
 •(Eur prem)

Remarks. There is no program for this concert in
 the DT Collection. The source for this entry is
 DT's program list for his 1954 European tour. It
 is uncertain whether this work or Wolff's *For Pre-
 pared Piano*, q.v., was given on the concert of 26
 Oct; if the work performed was *For Piano I*, the
 performance constituted the work's Eur prem.

Th 27 Oct 1954, Radio Netherlands, Hilversum
 •(Eur prem)

Remarks. See Remarks to *For Piano I*, above.

For Piano II (1953)

Sun 26 Apr 1953, Paine Hall, Harvard University, Cambridge, Mass.

•Prem

Wed 14 Apr 1954, Carl Fischer Concert Hall, NYC

•NY Prem

Sun 17 Oct 1954, Donaueschingen Musiktage

•Eur prem

Fri 18 May 1956, Washington Hall, University of Notre Dame, South Bend, Ind.; w dance "Lavish Escapade" by MC

•D prem

Sat 12 Jan 1957, Brooklyn Academy of Music, NYC

•NY d prem

For Prepared Piano: Four Pieces (Apr-June 1951)

Th 5 Jul 1951, Boulder, Col.

•(Prem)

Remarks. This work has also been titled *Four Pieces for Prepared Piano*

Tu 1 Jan 1952, Cherry Lane Theatre, NYC

•NY prem

Wed 26 Oct 1954, Belgian National Radio, Brussels

•(Eur prem)

Remarks. See remarks on entry for *For Piano I*, above.

Sat 29 Oct 1954, Institute of Contemporary Arts, London

•(Eur prem)

Remarks. See remarks on entry for *For Piano I*, above.

Sat 30 Nov 1957, Brooklyn Academy of Music, NYC; w dance "Changeling" by MC

•D prem

Music for Merce Cunningham (1959)

Fri 14 Aug 1959, New London, Conn.; w dance "Rune" by MC; ens cond by JC

•Prem, D prem

Sonata, 3 pn (1957)

Tu 30 Apr 1957, Carl Fischer Concert Hall, NYC; w Grete Sultan/William Masselos/JC, pn

•Prem

Remarks. On poster for this concert, the work is titled *Improvisation*; the above title appears on

the concert program. The individual pianists in this performance are not identified in the program.

Wed 8 Oct 1958, International World's Fair, Brussels; w Marcelle Mercenier, JC, pn
 •(Eur prem)

Wolpe, Stefan (1902-1972)

Battle-Piece (1943-47)

Sat 11 Mar 1950, Columbia University, NYC
 •Prem

Fri 29 Oct 1954, Institute of Contemporary Arts, London
 •Eur prem

Enactments, 3 pn (1950-53)

Fri 22 May 1959, Carl Fischer Concert Hall, NYC; w Russell Sherman and Toshi Ichiyangi, pn
 •Prem (i, iii-iv)

Remarks. The prem of the complete work was given on Fri 26 Apr 1963 at the New School for Social Research, NYC, by DT, Robert Miller, and Lawrence Smith.

Form for Piano (1959)

Fri 22 May 1959, Carl Fischer Concert Hall, NYC
 •Prem

(Music for a Dancer): prelude, adagio, appassionato
 Sun 28 May 1950, Hunter College Playhouse, NYC; w dance "Prelude, adagio, appassionato" by Shirley Broughton
 •(D prem)

Remarks. In the program for this concert, the title of the work reads only "Prelude, adagio, appassionato," and a program note adds "music composed especially for the dance." In a letter to the author dated 3 November 1993, Austin Clarkson wrote that, although the titles of the individual movements do not correspond to those in the final version of the work, Clarkson writes, "this music is almost certainly from what became Wolpe's 'Music for a dancer,' which he wrote in spring of 1950 for Shirley Broughton."

Piece in Two Parts for Flute and Piano (1960)

Sat 26 Mar 1960, Emilie Wagner Auditorium, Third Street Music School Settlement, NYC; w Marilyn Laughling, fl
 •(Prem)

Remarks. The title of this work is given in the program as *For Flute and Piano*.

Seven Pieces for Three Pianos (1951)

March 1951, Yale University, New Haven, Conn.; w Russell Sherman and Irma Wolpe, pn
(Prem)

Remarks. According to Clarkson's preface to the published edition of this work (New York: Southern Music Publishing Co., 1977), Wolpe composed it "during the last two weeks of February 1951, as a set of examples for a lecture he gave at the Yale School of Music in New Haven the following month." The title of Wolpe's lecture was "Spatial Relations, Harmonic Structures, and Shapes." On Wednesday 26 August 1953, Wolpe gave a lecture, perhaps a revised version of that delivered at Yale, entitled "Distances, Proportions and Space in Music," which also featured this work, performed by Tudor, Irma Wolpe, and Rudolph Benetsky.

Sonata, vln & pn (1949)

Th 3 Nov 1949, Musical Club of Hartford, Hartford, Conn.; w Frances Magnes, vln
•(Prem)

Remarks. The program states that this recital took place "Thursday morning," which suggests that the occasion was a private or semi-private one.

Th 10 Nov 1949, Adelphi College, Garden City, NY
•(Prem)

Remarks. The program for this recital states "first public performance."

Wed 16 Nov 1949, Carnegie Hall, NYC

Remarks. A program insert for this concert reads "Sonata 1949 by Stefan Wolpe Receives its World Premiere Tonight," but cf. preceding entry.

Two Studies, part II (1948)

Wed 28 Apr 1954, Carl Fischer Concert Hall, NYC
•NY prem

Remarks. Neither Clarkson nor I have found any record of an earlier performance of this work.

Four Studies on Basic Rows, no. 3: Presto furioso
(1934-36)

Th 12 Aug 1951, Black Mountain College, N. C.
•(Prem)

Wed 28 Apr 1954, Carl Fischer Concert Hall, NYC
•NY prem

Four Studies on Basic Rows, no. 4: Passacaglia
(1934/36)

Th 12 Jul 1956, IFNM, Darmstadt

•Eur prem

Toccata in Three Parts (1941)

(Mon 18 Feb 1946, Kaufmann Concert Hall, YM-YWHA, NYC
(NY prem)

Waltz for Merle (1952)

Sun 17 Feb 1952, Kaufmann Concert Hall, YM-YWHA, NYC; w
dance "Waltz" by Merle Marsicano

•prem, D prem

Zemach Suite (1939-41)

Mon 18 Feb 1946, Kaufmann Concert Hall, YM-YWHA, NYC

•Prem

Remarks. According to Clarkson, *ibid.*, this was
the first integral performance of the seven pieces
comprising the suite.

(Unknown)

Sun 6 Mar 1949, Kaufmann Concert Hall, YM-YWHA, NYC; w
dance "Genesis XIX" by ?Mary Anthony

•(D prem)

Remarks. There is no work by Wolpe with this
title. Although the choreographer is not identi-
fied in the program, the dance was performed by
Mary Anthony, hence the attribution above.

Woronoff, Wladimir (1903-80)

Sonnet pour Dallapiccola (1948)

Sun 19 Aug 1951, Black Mountain College, N. C.

•(Am Prem)

Sun 10 Feb 1952, Cherry Lane Theatre, NYC

•NY prem

Young, La Monte (b. 1935)

*Poems for Chairs, Tables, Benches, etc. (or other sound
sources)* (1960)

Mon 11 Apr 1960, Living Theatre, NYC; w Toshi
Ichiyanagi, JC, MC, and James Spicer, the latter 3
performers listed as assistants

•NY prem

Th 6 Oct 1960, Atelier Mary Baumeister, Cologne

•(Eur prem)

Music for "Dime a Dance" by MC
 Fri 21 Aug 1953, Black Mountain College, N. C.
 •D prem

Th 31 Dec 1953, Theatre de Lys, NYC
 •NY d prem

Remarks. In the summer of 1953 (the first season of the Cunningham Dance Company), Cunningham presented Tudor with the idea of a collection of brief dances, each structured within a metrical framework (though not oriented to metric beats), leaving it to Tudor to provide whatever music he wished. The result was "Dime a Dance", described in the program as "a grab-bag of dance" and requiring the entire company's availability on stage to perform whatever seven of thirteen possible dances came up on cards drawn by members of the audience, who would pay ten cents for the privilege. The music Tudor selected for "Dime a Dance" was by such a variety of composers that the collective credit on the program read "The Whole World". The individual works and their composers were as follows:

- "The Run"
The Juggleress, Phantasiestück, Op. 52, no. 4
 (Moszkowski)
- "The Fall"
Arabian National Hymn (Baptist)
- "The Glide"
Prelude (Lud Skabo)
- "The Waltz"
Radieuse, Grande Valse (Gottschalk)
- "The Tango"
Tango (Alois Hába)
- "The Five-Four"
Schüchterne Sehnsucht (György Kosa)
- "The Polka"
Kutschke-Polka, Op. 155 (Ludwig Stasny)
- "The Tarentella"
Tarentelle, Op. 4 (Génari Karganoff)
- "The Swing"
Réverie (Debussy)

- "The Lunge"
Souvenir de Porto Rico (Marche des Gibaros), Op. 31 (Gottschalk)
- "The Insect"
Gros Temps, from Les Mois, Op. 74 (Alkan)
- "The Jump-Turn"
Springtime of Youth, Gavotte (Charles Breton)
- "The Eclectic" ("Der Eklektiker")
Bagatelle in b minor, Op. 126, no. 4 (Beethoven)

Bibliography

I. Manuscript Sources in the David Tudor Collection

The David Tudor Collection will prove a major source for research far beyond the scope of the present study. The Collection is a scholar's dream, for Tudor has saved practically everything, and not only his own manuscript materials; the Collection also holds composers' autograph scores (many of them heretofore lost or unknown), a large body of correspondence (also previously unknown) from the American and especially the European avant garde, virtually all of the programs of Tudor's performances beginning in 1944, and an abundance of recordings. The Collection was assembled in preliminary form, under Tudor's supervision, by Gale Cohen in 1989, at the same time I began my substantive work on this project. At this writing, Tudor is seeking an appropriate repository for the Collection to make it available to other performers and scholars.

I have listed below only those materials in the Collection which were used in preparing this dissertation. They are classified according to the categories Text 1 and Text 2 as I have distinguished between these in Chapter 3.¹ Mediating them is a third category consisting of Tudor's work notes, sketches, and memoranda; this category I have la-

¹ See Chapter 3, pp. 62-64, above.

belled Preparatory Materials. The numbering of the folios is my own.

Brown, Earle

Folio: December 1952 (1952)

Text 1

1. Photostatic copy of composer's autograph. 1 folio, 43.3 x 30.4 cm. Inscription in black ink, v, "for David Tudor / Dec. 1952 / Earle Brown."
2. Photostatic copy of composer's autograph. 1 folio, 40.2 x 31 cm. Dated "(12/52)," lower r. corner; signature "Earle Brown" added in black ink above date.

Four Systems (1954)

Text 1

1. Composer's autograph score. 1 folio, blue ink and pencil on gray cardboard, 37 x 29.9 cm. No title; signed and dated "EB 1-20-54" twice, in opposite corners, and inscribed "Happy/Birthday/David;" the first word of the inscription is inverted.
2. Composer's autograph. 1 folio, black ink and pencil on white paper, 38 x 30.9 cm. Title "Four Systems," and inscription "For David Tudor/on a birthday/Jan. 20, 1954," top l.; signed "Earle Brown," top r.; dated "Jan. 20, 1954/Bklyn. Acad.," bottom r.; instructions "may be played in any sequence,/either side up, at any tempo(i)/pencil lines define outer limits/of keyboard. Thickness may indicate/ dynamics or clusters," bottom l.
3. Holograph reproduction of no. 2, above. 1 folio, white paper, 38.2 x 30.9 cm.

Preparatory Materials, 2 Envelopes

Envelope 1: 13 folios

Fol.

- 1-2 Blue-lined yellow tablet paper, 27.9 x 21.4 cm. Annotations r and v, pencil. Contents. Fol. 1. Anno-

tations for a reading Text 1 with title and signature at top. Fol. 2. Annotations for reading of Text 1 by inversion.

- 3 Yellowed tablet paper, 27.9 x 21.8 cm. Annotations *r* and *v*, pencil. Contents. Identification of systems in Text 1 by letters and arrows, calculations of distances converted to piano-key numbers.
- 4-5 Ivory linen, each folio folded to 29.8 x 21 cm. Annotations *r* and *v*, pencil. Contents. Calculations for reading Text 1, arrows indicating directional readings.
- 6-7 White typing paper, 20.3 x 12.5 cm. Annotations *r* and *v*, pencil. Contents. Calculations of distances in inches.
- 8 Onion-skin typing paper, folded and torn to 21.7 x 20 cm. Annotations *r* and *v*, pencil. Contents. *r*: charts for determining dynamics; calculations for correlating piano-key numbers with measurements. *v*: chart for converting distances (in inches) to time lengths (in seconds); calculations, conversions.
- 9-10 Ivory linen, 29.8 x 21 cm. Annotations *r* and *v*, pencil. Contents. Calculations and tabulations referring to directional readings of Text 1.
- 11 Blue-lined yellow tablet paper, cut to 12.6 x 19 cm. Annotations *r*, pencil. Contents. Performance instructions for second realization; list of general specifications.

Envelope 2: 5 folios

Fol.

- 1 White punched note paper, 15.3 x 8.9 cm. Annotations *r* and *v*, pencil. Contents. *r*: letters A-D and S, T, M, C, arrows ↑ and →. *v*: calculations.
- 2 Blue-lined yellow tablet paper, 22.1 x 19.9 cm. Annotations *r*, pencil. Contents. Letters A-D, T, C; arrows ↑ and →.
- 3 Blue-lined yellow tablet paper, 25.2 x 19.9 cm. Annotations *r*, pencil, numerous short pen strokes in black ink, 6 short pen strokes in red ink. Contents. Letters A-D; arrows ↑ and →. Torn to approx.
- 4 White onion-skin typing paper, folded, and/or cut to

25.2 x 15.1 cm. Annotations *r*, pencil. Contents. Letters A-D and a-d; arrows † and →; calculations.

- 5 White paper, 22.9 x 16.9 cm. Annotations *v*, pencil (*r* is a copy of an advertisement in *DownBeat*, 21 Oct 1953, p. 14-S). Contents. letters A-D; vertical and horizontal arrows.

Text 2

1. Presser brand ivory 12-stave music paper. 3 folios, 31.5 x 23.8 cm. Annotations *r*, pencil. Contents. First realization.
2. Heavy tracing paper. 6 folios, 43.4 x 27.8 cm., plus numerous cuttings from additional copies of same. Annotations *r*, pencil. Contents. Second realization, for two pianos.

Addendum. White receipt form. 1 folio, 16.5 x 10.9 cm. Annotations *r*, blue ink. Contents. Receipt from Circle Blue Print Co., Inc., 225 W. 57, NYC (100)19, dated 10 May 1957, for 24, charge: \$2.88 + .09 tax = \$2.97, to customer "Tudor."

Twenty-Five Pages (1953)

Text 1

1. Holograph reproduction of composer's autograph. 26 folios of buff paper. 31.7 x 24.2 cm. Annotations *r* and pagination by DT, pencil. Title page inscribed "25 Pages / for piano(s) / for David Tudor / Earle Brown."
2. Composer's instructions for performance. 1 folio, typescript on white typing paper, 27.4 x 18.3 cm. Signed "Earle Brown", blue ball-point ink, lower *r*.
3. Photostatic reproduction of first(?) of 4 parts of composer's version of Text 1 for 4 pianos. 10 leaves, bound, in black boards with black plastic spiral, by Independent Music Publishers, New York City, cut and taped to form 5 bifolios, approx. 36 x 28.4 cm. Annotations in pencil red ink, *r* and *v*, by DT and Brown. Title page inscribed "25 Pages / for Pianos(s) / Fall 1953 / N.Y.C. / for David Tudor / Earle Brown / 4 Piano version set / April '57 B." Label on front cover inscribed "25 Pages / Four Piano Version / Earle Brown." Contents. Part used by Tudor in first performance of composer's arrangement of Text 1 for 4 pianos, 30 April

1957.

4. Photostatic copy of second(?) of 4 parts of composer's version for 4 pianos. 10 leaves, cut and taped to form 5 bifolios, approximately 36 x 28.4 cm. Annotations, r and v, pencil, red and blue ink, by John Cage and Brown. Title page as in 3., above. Contents. Part used by Cage in first performance of composer's arrangement of Text 1 for 4 pianos, 30 April 1957.

Preparatory Materials

Yellow, blue-lined tablet paper. 1 folio, 27.9 x 21.5 cm. Annotations, pencil, r. Contents. Sequence and order of performance of the pages of Text 1.

Text 2

Ivory 12-stave Presser music paper. 25 folios (numbered 1-25, upper center), torn in half from original bifolios to form single leaves of varying sizes, approximately 31.6 x 24 cm. Annotations r and v, pencil.

Cage, John

Concert for Piano and Orchestra (1957-58)

Preparatory Materials, 7 envelopes

Envelope 1: 11 folios

Fol.

- 1 White typing paper. 1 folio, 27.9 x 21.5 cm. Annotations r and v, pencil. Contents. Letter or program note by Cage, unsigned, dated "1/29/58." For a transcription of this draft, see Appendix A.
- 2 Yellow ruled paper. 1 folio, 31.8 x 20.2 cm. Annotations r and v, pencil. Contents. r. ordering and timings for (dress) rehearsal and performance 15 May 1958. v ditto for performances 25 May 1958.
- 3 Yellow ruled paper. 1 folio, 31.8 x 20.2 cm. Annotations r and v., pencil. Contents Work sheet for fol. 2, above.

- 4 Yellow ruled tablet paper. 1 folio, cut to 25.1 x 19.9 cm. Annotations *r* and *v*, pencil. Contents. Ordering and timings for performance in Cologne 19 Sept 1958. Memo, *v*, bottom right, "Cologne."
- 5 Unlined white paper. 1 folio, 27 x 21.7 cm. Annotations *r*, pencil. Contents. Ordering for performance in Vienna, 15 November 1959. Heading "Vienna."
- 6-9 Yellow ruled legal tablet paper. 3 folios, 31.8 x 20.2 cm. (fol. 6-8), fol. 9 cut to 15.8 x 20.2 cm. Annotations *r* and *v*, pencil. Contents. Worksheets for preparation of recorded tape, a realization of graph P.
- 10 Yellow ruled paper. 1 folio, 31.8 x 20.2 cm. Annotations *r* and *v*, pencil. Contents. Tabulation of occurrences of all graphs A-CF, according to page number(s) in Text 1.
- 11 Yellow ruled paper. 1 folio, 31.8 x 20.2 cm. Annotations *r*, pencil. Contents. Table of graph and page numbers in Text 1, reordered and with timings added.

Envelope 2

Note. This envelope contains two smaller envelopes, labelled 2a and 2b, plus 6 loose folios.

- 2a. Packet made from folded blank paper. 45 folios, paginated *r* and *v* 1-90, 15.1 x 11.4 cm. Annotations *r* and *v*, pencil. Contents. Timings, graphs (identified by letter in Text 1), attack points, used in preparing Tudor's second realization (Text 2/*Solo for Piano*), version 1.
- 2b. Packet made from folded blank paper. 45 folios, paginated *r* and *v* 1-90, 15.1 x 11.4 cm. Annotations *r* and *v*, pencil. Contents. Timings, graphs (identified by letter in Text 1), attack points, used in preparing Tudor's second realization (Text 2/*Solo for Piano*), version 2.

Typescript on white typing paper. 6 folios, 27.7 x 21.4 cm. Contents. Fol. 1-5. Master Table of attack points and graph readings for Tudor's second realization Text 2/*Solo for Piano*, versions 1 and 2. Fol. 6. Lists of specifications for realization of graphs BV 53, T 12, BB 53, BB 45-46, BJ 50, BI 50-51, H 50, AS 56-57, BT 54.

Envelope 3: 14 folios

Fol.

- 1-2 Yellow ruled paper, 31.2 x 20.2 cm. Annotations r and v, pencil. Contents. Ordering and timings for version with Cunningham's dance "Antic Meet". Heading at top of both folios, "Antic Meet." Fol. 1v contains ordering and timings for Eur premiere of the Concert, Cologne 19 Sept 1958. Heading, top: Köln - 1958.

- 3 White unlined paper, 27.9 x 21.7 cm. Annotations r, pencil. Contents. Performance plan for dance "Antic Meet", Phoenix Theater, NYC, 16 Feb 1960.

- 4 Patch of white, small notebook paper, 7.6 x 8 cm. Contents. r. List of graphs, by corresponding page number(s) in Text 1. v. Miscellaneous pen strokes in blue and green ballpoint ink.

- 5 Patch of white unlined paper, 10.3 x 20.9 cm. Contents. r. List of five graphs and corresponding numbers in Text 1 used to prepare Text 2/Solo for Piano, first version (U 16, CD 57, CC 57, CE 59, K 8, J 5). v. Miscellaneous memos (names, addresses, probably 1 tel. no.) evidently regarding persons and places in Germany.

- 6 Patch of white (onionskin?) typing paper, 15.9 x 8.8 cm. Contents. r (v is blank). Check-list of 31 graphs and corresponding pages numbers in Text 1.

- 7 Light blue unlined writing paper, 20.3 x 14.8 cm. Annotations r, pencil. Contents. 3 columns of numbers.

- 8 Berkshire Bond typing paper, folded to form 1 bifolio, 21.6 x 14 cm. Annotations r and v, pencil. Contents. r. Check-list of graphs in Text 1 with cardinal number of readings in Text 2.

- 9 Patch of white unlined paper, 22.9 x 15.3 cm. Annotations r, pencil. Contents. Check-list of graphs and corresponding page numbers in Text 1. Some entries deleted or otherwise modified by check or question marks.

- 10 White typing paper, folded to form 1 bifolio, 27.9 x

- 10.8 cm. Annotations r, pencil. Contents. 3 columns of figures (col. 1: 1-30, col. 2: 200-5400 in increments of 200, col. 3: 180-5400 in increments of 180); 1 column of 5 graphs and corresponding page numbers in Text 1; row of figures 1, 9, 11, 12, 13.
- 11 White typing paper, 27.9 x 21.6 cm. Annotations r and v, pencil. Contents. r. 4 columns of numbers with their sums; assignation of graphs to attack points in Text 2. v. Timings; sketches of directional devices, i.e. 4 ←'s, 3 of which have short diagonal lines drawn through them.
- 12 White mimeograph paper, 27.9 x 21.7 cm. Annotations v, pencil (r is p. 10 of mimeograph reproduction headed "Dewey, My Pedagogic Creed," source unidentified). Contents. Lists of graphs and corresponding pages numbers in Text 1; column of 6 horizontal lines and arrows →.
- 13 White (typing?) paper, 28 x 21.7 cm. Annotations r & v, pencil. Contents. r. List of sound-producing materials, some preceded by numbers; column of figures, probably referring to graphs in Text 1 + silence S; 2 cues for performance actions. v. List of graphs and their page numbers in Text 1; lists of graphs with timings(?).
- 14 White (typing?) paper, 27.9 x 21.6 cm. Annotations r, pencil. Contents. [Check?-]list of graphs and their pages numbers in Text 1; cue "ruler" following first entry "4 H".

Envelope 4: 39 folios

Fol.

- 1 Patch of Passantino Midget staff paper, 12.7 x 5.1 cm. Contents. reading of Text 1, p. 4 graph H.
- 2 Patch, unlined yellow paper, 16.8 x 8.5 cm. Contents. r.: list of 12 sound sources, numbered (nonsequentially). v.: list of 7 sound sources (un-numbered).
- 3 Patch, unlined white paper, 15.2 x 14.1 cm. Contents. check-list re graphs AE, AB, BK.
- 4 Patch, staff paper, 15 x 23.7 cm. Contents. r.: determinations for ranges of clusters for graph T 12. v.: ditto for graph T 41-42.

- 5 White, unlined binder paper (2-hole), 15.2 x 24.2 cm. Contents. sketch for unidentified reading of Text 1.
- 6 Passantino Midget staff paper, 12.7 x 20.4 cm. Contents. Sketch for of graph 36 H, systems 2 and 6.
- 7 Passantino Midget staff paper, 12.7 x 20.5 cm. Contents. r.: Sketches for? reading of graphs B 23-25; CD 57. v.: sketch for unidentified reading of Text 1.
- 8 Patch of staff paper, 12.7 x 15.5 cm. Contents. Sketches for readings graphs G 4, BN 50-51.
- 9 Patch of staff paper, 14.1 x 17.8 cm. Contents. r.: sketch for reading graph B 1-2, B. v.: sketch for reading of graph B 55-57.
- 10 Patch of staff paper, 18.8 x 17.8 cm. Contents. Sketches for readings of CB 55-56, AI 36-39, 37 AI, 37 AV.
- 11 Patch of staff paper, 16.3 x 17.7 cm. Contents. r.: sketch for reading graph AG 20-21. v.: top staff (blank) divided into 30 units numbered sequentially.
- 12 Patch of staff paper, 15 x 23.8 cm. Contents. Sketch for unidentified reading of Text 1.
- 13 Patch of staff paper, 15 x 23.8 cm. Contents. Sketch for unidentified reading of Text 1.
- 14 Patch, staff paper, 15 x 14.8 cm. Contents. Sketch for reading of graph D 4.
- 15 6-staff music paper, detached from spiral notebook, 17.6 x approx. 20.2 cm. Contents. r.: sketches for readings of graphs AT 43-44, BE + BD 47, BP 51. v.: sketch for unidentified reading of Text 1.
- 16 Patch of staff paper, approx. 18.4 x 17.8 cm. Contents. r.: sketch for reading of graph R 9-10, deleted sketches for pitch sets of 11, 18, 24, and 25 pitches, respectively, entered at bottom. v.: unidentified sketch.
- 17 Passantino Midget staff paper, 12.7 x 20.4 cm. Contents. unidentified sketches, doodles in various inks, columns of figures.
- 18 Passantino Midget staff paper, 12.7 x 20.5 cm. Contents. unidentified ink sketch.

- 19 Passantino Midget staff paper, 12.7 x 20.5 cm. Contents. Sketch for reading of graph BN 50-51, BN.
- 20 Passantino Midget staff paper, 12.7 x 20.4 cm. Contents. unidentified Ink sketch.
- 21 Patch of staff paper, 15 x 23.7 cm. Contents. r.: sketch for readings of graph AJ + AL 26-27, AJ + AL. v.: continuation of same.
- 22 Bifolio. 6-staff music paper, 15 x 23.7 cm. Contents. Sketches for readings of graph E 2-4, E.
- 23 Patch of staff paper, approx. 18.6 x 17.8 cm. Contents. r.: Sketch for reading of graph AY 40. v.: unidentified sketch.
- 24 Belwin 12-staff music paper, 30.5 x 24.1 cm. Contents. r.: sketches for readings of graphs D + F 2-3, BN 50-51. v.: ditto for graphs AA, AR, AS, AC 29-31.
- 25 6-staff music paper, detached from spiral notebook, 17.6 x 21 cm. Contents. r.: unidentified sketch. v.: sketch for reading of graphs CE 59-60, A 1.
- 26 Passantino Midget staff paper, 12.8 x 20.5 cm. Contents. r.: unidentified sketches, blue and black ink. v.: unidentified sketches, pencil and red pencil.
- 27 12-staff music paper, 30.5 x 24.2 cm. Contents. r & v.: unidentified sketches, pencil.
- 28 Patch, staff paper, approx. 12 x 17.9 cm. Contents r.: sketch for reading of graph Q 10-11. v.: unidentified sketch, probably for reading same graph.
- 29 Parchment No. 3, 12-staff music paper, detached from bifolio, 32 x 24.3 cm. Contents. r.: sketch for reading of graphs Q + G 10-12 Q + G. v.: ditto for graph AY 40.
- 30 6-staff music paper, detached from spiral notebook, 17.6 x approx. 20.3 cm. Contents. r & v.: unidentified sketches.
- 31 White unlined paper, 28.1 x 21.7 cm. Contents. Sketch for reading of graph BZ 55-56.
- 32 6-staff music paper, detached from spiral notebook, 17.6 x approx. 20.2 cm. Contents. r. & v.: sketch for reading graph J 5-7.

- 33 Patch torn from Belwin No. 3, 12-staff music paper, approx. 16 x 24 cm. Contents. r.: sketch for reading of graph A. v.: sketch for reading graph O 58.
- 34 Bifolio. 6-staff music paper, 15 x 23.8 cm. Contents. p. 1: sketch for reading graphs, B 9, K 8. pp. 2-3: ditto for reading graph O 10-12.
- 35 12-staff music paper, torn from bifol, 31.8 x 24.1 cm. Contents. r.: sketch for reading graph T 16-17. v.: ditto for reading graph B 34-36 B; additional, unidentified sketch, bottom.
- 36 Patch, staff paper, approx. 26.3 x 24 cm. Contents. Sketch for reading graph AO 47-49.
- 37 6-staff music paper, detached from spiral notebook, 17.6 x 21 cm. Contents. r.: unidentified sketches. v.: sketches for readings of graphs O 58, BG 63.
- 38 Patch, staff paper, 15 x 23.8 cm. Contents. r.: sketch for reading of graphs AF + AB 20-21. v.: continuation of same.
- 39 Belwin No. 3, 12-staff music paper, 30.5 x 23.9 cm. Contents. r.: sketches for readings of graphs K 8, CD 57. v.: ditto for graphs BV + CB + CA 55-56.

Envelope 5: 52 folios

Fol.

- 1 White note paper, 12.6 x 7.6 cm. Annotations r and v, pencil. Contents. r. Two scales for dynamics, in increments of .5, from 0.5 through 10.v. List of 7 durational values, identified by abbreviations.
- 2-4 White typing paper, 28.1 x 21.7 cm. Annotations r and v, pencil. Contents. Specifications for realizations of graphs I 46-47 (fol. 2r); BI 50-51, H 50 (fol. 2v); C² 1, N 9-10, BD 47, AB 20-21, AG 20-21, H 50 (fol. 3r); B 34-36, T 16-17, AE 56-57, BC 47, (fol. 3v); T 12, B 55-57, T 41-42, B 1-2, BI 50-51 (fol. 4r); I 46-47, BS 52 (fol. 4v).
- 5 White typing paper, 28 x 21.7 cm. Annotations r and v, pencil. Contents. r. Specifications for realizations of graphs BK 51-52, K 8, B 9, He [sic] 50, BY 54-55, BA 42, P 9-10, AC + AE 21-22, H 4, AK 49-50. v. Specifications for realizations of graphs B 23-25, BT 54, AI

- 36-39, CE 59-60 CE.
- 6 White Corrasable Bond typing paper, 28 x 21.8 cm. Annotations r and v, pencil. Contents. r. Specifications for realizations of graphs BV 53, AS 56-57, AG 20-21, AB 20-21. v. Specifications for realizations of graphs BK 43-44, BB 53, CF 62, C² 1, N 9-10, AK 25-26.
 - 7 White typing paper, 28 x 21.7 cm. Annotations r, pencil. Contents. Specifications for realizations of graphs U 16, BP 51, BY 54-55.
 - 8 White Corrasable Bond typing paper, 28 21.7 cm. Annotations r and v, pencil. Contents. r. Specifications for realizations of graphs B 55-57, T 12, B 1-2, T 41-42. v. Specifications for realizations of graph BK 52.
 - 9 White typing paper, 28 x 21.7 cm, folded in half to form bifolio. Annotations r, pencil. Contents. Various memoranda for graphs H 50, K 43-44, BD 47, BI 50-51, BZ, P, BY, BT, BB, T 12, B 55-57, AE 56-57, CF 62, AK 25, B 1-2, BB 53, BJ 50.
 - 10 White typing paper, 28 x 21.7 cm. Annotations r and v, pencil. Contents. r. Specifications for realizations of graphs BB 53, K 43-44, AS 56-57. v. Specifications for realizations of graphs BV 53, F 62, AK 25-26.
 - 11 White typing paper, 28 x 21.7 cm. Annotations r and v, pencil. Contents. r. Specifications for realizations of graphs BB 45-46, U 16, BP 51, AT 39, CA 55-56. v. Specifications for realizations of graphs AX 38-40, AV 37-38, BJ 50, BW 53-54, BZ 55-56, CC 57, AC 31, AR 31, AS 31, CD 57.
 - 12 Patch of unlined white paper, 8 x 14 cm. Annotations r and v, pencil. Contents. r. Memoranda for performance of graphs BJ 50, BW 53-54. v. Memoranda for performance of graph BT 54.
 - 13 Yellow legal paper, 31.8 x 20.3 cm. Annotations, r and v, pencil. Contents. r. Specifications for realization of graph BS 52. v. Specifications for realization of graph BK 52.
 - 14 White typing paper, 27.9 x 21.7 cm. Annotations r and v, pencil. Contents. r. Specifications for realizations of graphs B 34-36, BD 47, BC 47, AE 56-57. v. Specifications for realization of graph T 16-17.

- 15 Yellow legal paper, 31.8 x 20.3 cm. Annotations r, pencil. Contents. Memoranda for graph N (9?), reading: N = 18"; Unidentified table of numbers, possibly for graph R or a conversion table.
- 16 Patch of unlined white paper, 10.1 x 7.5 cm. Annotations r, pencil. Contents. List of blank, i.e. silent, pages in Text 1.
- 17 Light blue unlined paper, 20.2 x 14.8 cm. Annotations r, pencil. Contents. Unidentified specifications.
- 18 Light blue unlined paper, 20.2 x 14.8 cm. Annotations r and v 18), pencil. Contents. Unidentified specifications.
- 19 White typing paper, 28.1 x 21.7 cm. Annotations r and v, pencil. Contents. r. Specifications for realization of graph BT 54; list of attack points for the 21 icti of BY 54. v. List of 30 numbers between 1 and 84, with memo "30.' (with talk)."
- 20 Patch of yellow legal paper, 13.6 x 20.3 cm. Annotations r and v, pencil. Contents. r. Calculations, list of figures, the latter possibly relating to piano-key numbers, since the second column of these figures consists of 22 groups: 1-4, 5-8, 9-12... to 85-88. v. Lists of figures, letters X, D, G, Y, top.
- 21 Yellow legal paper, 31.8 x 20.3 cm. Annotations r and v, pencil. Contents. r. Specifications for realizations of graphs AJ, AL, and J, respectively; miscellaneous calculations. v. Specifications for 2 realizations (?) of graph BZ (55?).
- 22 Patch of yellow legal paper, approximately 16 x 20.3 cm. Annotations r, pencil. Contents. Specifications for realizations of graphs BN, AL 45; miscellaneous calculations.
- 23 Yellow legal paper, 30.8 x 20.3 cm. Annotations r and v, pencil. Contents. r. Miscellaneous calculations; list, possibly of measurements or timings. v. Conclusion of list begun on r.
- 24-30 White typing paper, 28 x 21.7 cm. Annotations r (fol. 24-25), r and v (fol. 26-30). Contents. Miscellaneous calculations; some specifications for realizations of graphs BT 54 (fol. 25r), AT 43-44 (fol. 26r). fol. 27v: calculations in long division for conversion of measurements of area A to attack points for graph B 23.

- fol. 28r: *ditto* for graphs K 8, BY 54. fol. 27v: *ditto* for graph CE 59. fol. 28v: *ditto* for graphs BP 51 (these calculations are deleted), CD 57, BR 51. fol. 28v: *ditto* for AK 49.
- 31 Patch of white, blue-lined tablet paper, 13.9 x 21.5 cm. Annotations *r* and *v*, pencil. Contents. Miscellaneous memos and calculations.
 - 32 Patch of yellow legal paper, 7.3 x 20.3 cm. Annotations *r* and *v*, pencil. Contents. Miscellaneous figures, possibly conversion (e.g. "4.8 = 19", *r*).
 - 33 Patch of yellow legal paper, approximately 16 x 10.3 cm. Annotations *r* and *v*, pencil. Contents. *r*. Memos pertaining to graphs BW, BO, N 9, B 34-36, AC + AC 21-23, O 27, AC 31, BD 47-49, BE, AO. *v*. Miscellaneous calculations.
 - 34 White bond paper, 5.1 x 8.9 cm. Annotations *v* (see Remarks, below), pencil. Contents. 2 lists of figures. Under the first list is the letter *U*, under the second the letter *L*.
 - 35 Patch of white typing paper, 14.2 x 21.6 cm. Annotations *r* and *v*, pencil. Contents. *r*. Memos pertaining to graphs BM 50, BJ, BA 42, H 4, N + P 9, S 12-14, H, AK 49-51, H, BJ, BM, BN, AC + AE 21-22. *v*. Miscellaneous calculations, memo "36 AI."
 - 36 Patch of yellow legal paper, 24.7 x 20.3 cm. Annotations *r*, pencil. Contents. Specifications for realization of graph F 2-3 .
 - 37 Yellow legal paper, 31.8 x 20.3 cm. Annotations *r* and *v*, pencil. Contents. Lists of figures pertaining to graph AO 47-49, beginning *r*, continuing and concluding *v*.
 - 38 Yellow legal paper, 31.8 x 20.3 cm. Annotations *r* and *v*, pencil. Contents. Lists of figures pertaining to (combined?) readings of graphs Y + Z + X + AG + AD 19-21.
 - 39 Patch of yellow legal paper, 31.8 x approximately 9 cm (fol. 39). Annotations *r*, pencil. Contents. Continuation of fol. 38, above.
 - 40 Yellow tablet paper, 27 x 20 cm. Annotations *r*, pencil. Contents. List of 44 figures pertaining to graph B 34-36.

- 41 Patch of yellow legal paper, 19.1 x 20.3 cm. Annotations *r* and *v*, pencil. Contents. *r*. Sketches for performance order and timings for Village Vanguard concert 25 May 1958. *v*. Plans (order of graph readings with timings) for the 2 performances at the Village Vanguard, 25 May 1958.
- 42 White bond typing paper, 28 x 20.5 cm. Annotations *r*, pencil. Contents. Miscellaneous calculations, mostly multiplications and divisions.
- 43 Patch of yellow legal paper, 30.8 x 11.7 cm. Annotations *r* and *v*, pencil. Contents. Lists of figures, possibly pertaining to graph A 1, i.e., the 1 is written above the A.
- 44 Patch of yellow legal paper, 16.1 x 20.3 cm. Annotations *r* and *v*, pencil. Contents. *r*. Specifications for realizations of graphs BJ 50, H 36, BW. *v*. Specifications for realization of graph CC 57.
- 45 Patch of yellow legal paper, approximately 13.3 x 20.3 cm. Annotations *r*, pencil. Contents. Calculations pertaining to unidentified graph, possibly one of the 3000 series (e.g. BB or BV) whose parameters are here identified as F, D, A, and S (i.e. frequency, duration, amplitude, and overtone structure).
- 46 Patch of yellow legal paper, 12.8 x 20.3 cm. Annotations *r*, pencil. Contents. Specifications for realization of graph K 8.
- 47 Yellow tablet paper, 27.8 x 21.5 cm. Annotations *r* and *v*, pencil. Contents. *r*. 8 sets of figures and calculations pertaining to graph K 8; list of 29 sets of pitch determinations (purpose unknown) numbered in reverse order (29-1). *v*. 35 pair of figures pertaining to graph BR 51-52.
- 48 Yellow legal paper, 30.8 x 20.3 cm. Annotations *r* and *v*, pencil. Contents. *r*. Specifications for realization of graph CD 57. *v*. Specifications for realizations of graph CC 57, BJ 50, BW 54.
- 49 Patch of yellow legal paper, 24.7 x 20.3 cm. Annotations *r* and *v*, pencil. Contents. *r*. Lists of figures pertaining to graphs J 25-26, H 36. *v*. Lists of figures pertaining to graphs CB + CA 55-56.
- 50 Yellow legal paper, 31.8 x 20.3 cm. Annotations *r* and *v*, pencil. Contents. *r*. Rows of figures pertaining

to graph K 43-44. v. Lists of figures pertaining to graphs AX 38, AT 39.

- 51 White typing paper, 28 x 21.7 cm. Annotations r and v, pencil. Contents. v. Lists of figures pertaining to graphs U 16, BP 51, AK 49-50, H 50, BT 54. v. Lists of figures pertaining to graphs AR 31, B 9.
- 52 Yellow legal paper, 31.8 x 20.3 cm. Annotations r and v, pencil. Contents. r. List of 12 sets of parametric specifications derived from readings of graph BB 45-46. v. 2 sets of readings pertaining to graph AT 39.

Envelope 6: 14 folios

Fol.

- 1 Yellow tablet paper, 27.9 x 21.5 cm; one corner of the folio has been slightly cut away. Annotations r and v, pencil. Contents. r. 4 columns, headed A, B, C, D, respectively, of figures in whole and decimal numbers (in tenths). On the right side of these figures, and at a 90° angle to them, is a row of 4 numbers: $2-2/3$, 8, $1\frac{1}{2}$, and 12, respectively.
- 2 Patch of plastic transparency, approximately 9.7 x 20.3 cm. Contents. Grid, dividing 6 inches into 10ths of an inch, each inch denoted by a longer line.
- 3 Patch of white paper, 11.7 x 13.3 cm. Annotations r and v, pencil. Contents. r. Miscellaneous calculations, principally subtractions. v. Miscellaneous calculations, principally multiplications.
- 4 Yellow legal paper, 31.8 x 20.3 cm. Annotations r and v, pencil. Contents. r. Conversion table; list of 88 pitches/piano-keys by ordinal number and pitch name. v. 2 conversion tables.
- 5 White unlined index card, 7.7 x 12.7 cm. Annotations r, pencil. Contents. 2 templates for determining pitch by piano-key number. 1 template shows all 8 A's on the keyboard as markers along the template; the other template shows all 8 B's for same purpose.
- 6 Patch of white mimeograph paper, approximately 22.3 x 21.6 cm. Annotations r, pencil. Contents. (Time-?)scale, 8 inches in length, consisting of 10 paired segments from 0 to 30 in increments of 7.5.

- 7 Patch of yellow legal paper, 9.6 x 20.3 cm. Annotations r and v, pencil. Contents. r. Conversion table. v. Miscellaneous calculations in decimals and fractions.
- 8 White unlined paper, 27.3 x 18.4 cm. Annotations v, pencil, blue pencil, red pencil. Contents. Grid, 7 inches in length, divided, by lines drawn in red pencil, into units of 1 inch each.
- 9-12 White typing paper, 28.1 x 21.7 cm. Annotations r, pencil. Contents. Unidentified sketches(?) for chart or graph. At top and bottom left of each folio is an encircled v.
- 13 Green-lined graph paper, 26.4 x 20.3 cm. Annotations r, pencil, blue ink, black ink. Contents. Table, graph, or chart divided on either side into 30 segments. To one end of the graph are a pair of encircled O's or 0's.
- 14 White (onionskin?) typing paper, 27.9 x 21.6 cm.; parts of the upper 2 corners have been slightly cut away. Annotations r, pencil. Contents. Sketch for grid(?), unit of measurement unknown.

Envelope 7: 10 folios
Fol.

- 1 White unlined paper, 17.8 x 15.9 cm. Annotations r and v, pencil. Contents. r. List of sound sources for realization of graph 53 BB. v. Specifications (probably timings) for graphs H 36, [AA?] 29-31, CC 57, AC 31, AV 19-21, [X = Y?] 37-38, BR 51-52, T 12, CB 55-56 etc. [sic], AC + AE 21-22, BJ + AS 56, U 16, T 16-17, BB 53, J 5-7.
- 2-3 Patches of white typing paper, approximately 8.1 x 18.5 cm and 6.8 x 18.5 cm. Annotations r and v, pencil. Contents. Each folio shows a list of specifications for 2 closely related sets of graphs in Text 1. Col. 1 in each list shows timings, in minutes and seconds, both lists summing to 11.45 (i.e. 11 minutes, 45 seconds). Also, cues for sound sources in both lists are so similar as to suggest that the folios are 2 versions of the same plan for performance from the graphs shown here.
- 4 Patch of unlined buff paper, 10.6 x 13.8 cm. Annotations r and v, pencil. Contents. r. Incomplete lists of figures pertaining to graphs CA and BB (pages in

Text 1 not shown); miscellaneous formula ("9 x 10").
v. Sketch for unidentified performance plan, shown by
order of page and graph, with timings.

- 5-9 Yellow legal paper, 31.8 x 20.3 cm; the paper type of
fol. 6 is different from that of fol. 5, 7-9. Annotations
r and v (fol. 5-8), r (fol. 9), pencil. Con-
tents. Sketches for performances plans.
- 10 White copy paper, 27.8 x 21.6 cm. Annotations r, blue
ink and black marker. Contents. Photocopy of page
from Text 1, version for "Antic Meet," made for inclu-
sion in *Merce Cunningham*, ed. James Klosty (New York:
Limelight Editions, 1986), where it appears on p. 121;
memo to DT from Klosty: "Dear David, could you please
give me any pertinent information about this page that
you would like to see appear in a footnote, and return
it to me at 28 Greenwich Ave., NYC 10011. [Remainder
of memo crossed out with black marker until:] Thank
you - Jim Klosty."

Text 2

1. Black, blue, red ink, and pencil on Passantino Brand
midget 6-stave music paper in black ring binder, 29
folios, 12.6 x 20.3 cm. Contents. First realization,
prepared for premiere, Town Hall, NYC, 15 May 1958.

Addendum. Black, blue, red ink, and pencil on
Passantino Brand midget 6-stave music paper. 43 folios
(loose), 12.6 x 20.3 cm. Contents. Supplementary
material to 1., above.
2. Pencil on staff paper, cut to 6-staves per folio. 41
(orig. 45) folios, 13.8 x 17.7 cm. Numbered 1-88 (the
following pages are lost: 13/14, 27/28, 61/62, 65/66.
Contents. Second realization, version 1, prepared for
lecture "Indeterminacy," by Cage, Columbia Teachers
College, New York City, April 1959.
3. Ink, blue, black, and red pencil on Passantino "Midget"
Filler 6-stave music paper punched with 2 holes for
binding, 16 folios, 12.8 x 20.3 cm. Paginated 1-32.
Contents. Second realization, version 2, incomplete.
4. Black ink and pencil on unlined white paper in loose
leaf ring binder with handmade black covers cut from
heavy binding paper, 48 folios (2 unnumbered endpapers,
1 unnumbered page of cues, 45 folios. paginated 1-90),

24 x 15.1 cm. Contents. Second realization, version 2, prepared for recording *Indeterminacy*, spring-summer 1959.

Feldman, Morton

"Conversation with Young Composers." 1 folio, type-script, pencil, and blue ink on white, blue-lined notebook paper, 25.5 x 19.7 cm. No date, inscription "Feldmann" [sic], upper r. Contents. English translation of excerpt from program notes for recitals given by DT and Severino Gazzelloni, 6 December 1956, Sala piccola del Conservatorio, Milan, and 8 December 1956, Sala delle Colonne of the Cà Giustinian, Venice.

Intersection II (1951)

Text 2

Pencil on 6-staff music paper. 20 folios bound between brown covers, plus 3 folios apparently torn from same, 17.6 x 21.3 cm. Annotations *r* and *v*, pencil. Contents. Realization of Text 1, incomplete.

Addendum. White mailing envelope with plastic window, printed return address "THE PACIFIC COAST COMPANY / CARE OF BANKERS TRUST COMPANY / P. O. BOX NO. 1542, GRAND CENTRAL STATION / NEW YORK 17, N. Y.," postmark "Apr 9 '59." 1 folio, 10.9 x 24 cm. Annotations by DT and Feldman(?) *v*, pencil. Contents. Memoranda from Feldman: "Morty changed *Intersection II* to met. 158 & cut out unclear directions. [next word deleted] & play as was." Memoranda from DT: "1³⁰ p.m.," "Moe Asch / Folkway 117 W 46."

Intersection 3 (1953)

Text 1

1. Composer's autograph. 1 folio, black ink on graph paper, scotch-taped on cardboard, 21.7 x 34.5 cm. Title, signature, dedication, and date, top: "INTERSECTION # 3 FOR D. TUDOR M Feldman April 1953".
2. Copy of 1., above, by David Tudor. 2 folios, black ink (and pencil?) on buff paper, 21.6 x 27.9 cm. Annota-

tions r. Inscription, top: "Intersection # 3 M. Feldman April 1953."

Text 2

3 folios, pencil on Presser 12-staff music paper, 31.5 x 23.7 cm. Annotations r and v.

Nilsson, Bo

Letter to David Tudor, dated 29 May 1956. 1 folio, red and black typescript on white paper, 29.6 x 21 cm. Signed "Bo Nilsson," red ink.

Wolff, Christian

Duo for Pianists I (1957)

Text 1

1. Photostatic reproduction of composer's autograph, *secondo*. 2 folios, white copy paper, 20.6 x 28.8 cm. Annotations r by CW, pencil.
2. Photocopy of 1., above. 2 folios, white copy paper, 22.3 x 28.8 cm.
3. Composer's instructions for performance. 1 folio, typescript, black ink, and pencil on white typing paper, 27.6 x 21.2 cm. Memo in l. margin signed "Christian."
4. Copies by Tudor of *primo* and *secondo*. 2 folios, white typing paper. 21.5 x 27.8 cm. Annotations r., pencil. Dated "12/8/57," lower r. (*primo*).

Preparatory Materials

Fol.

- 1-3 Yellow tablet paper, various cuttings. Annotations r and v, pencil. Contents. 1r. Computations and timings for pianist I. 1v. *Ditto* for pianist II. 2r and v. *Ditto* for pianist I. 2r and v. *Ditto* for pianist II.

- 3-4 Passantino No. 1 12 Stave-Medium staff paper, 31.8 x 24.3 cm. Annotations *r* and *v*, pencil. Contents. Sketches for Text 2.

Text 2: 9 folios in various assemblages

Fol.

- 1-4 Passantino No. 1 12 Stave-Medium music paper, bound with binding tape and cut to 15.7 x 24.3 cm. Annotations *r* and *v*, pencil. Contents. Text 2, version 1.
- 5-6 Red-lined staff paper, bound as in 1. above and cut to 12.5 x 29.1 cm.. Annotations *r* and *v*, pencil. Contents. Text 2, version 2.
- 7-9 White 6-stave handmade staff paper, bound with 5 ring binders, 17.5 x 19.6 cm.. Annotations *r* and *v*, pencil. Contents. Text 2, version 3.

Addendum. Collection of piano preparations in green army pouch with 2 snaps, approximately 13 x 21.4 cm. Contents. 1 black rubber door stop; 1 green rubber/plastic wedge; 1 small yellow wooden cylinder; 1 black rubber/plastic stopper; 1 clear plastic stopper; 1 small metal clamp; 1 large metal fitting with beveled ends.

Duo for Pianists II (1958)

Text 1

Composer's autograph score. 3 folios, blue ink and typescript on white typing and bond typing paper. 27.8 x 21.5 cm (fol. 1) and 21.6 x 27.8 cm (fol. 2-3). Annotations fol.1r and 3r (?) by DT, pencil. Undated, signed "CHRISTIAN WOLFF," fol. 2r. Contents. 1r. Instructions for performance. 2r. Part for *primo*. 3r. Part for *secondo*.

Preparatory Materials

Fol.

- 1-2 Ivory 12-stave music paper, 31.7 x 24.1 cm. Annotations *r* and *v*, pencil. Contents. Fol. 1. Sketches, including pitch notation, dynamic indications, specifications for harmonics. Fol. 2. Determinations of pitches, modes of touch.

- 3 White 7-stave (orig. larger) 3-holed music paper, cut or torn to 16.2 x 20.2 cm. Annotations *r* by Cage, pencil. Contents. Cage's timings for *Duo for Pianists II* and *Duo for Pianists I* for performance with Cunningham dance "Rune."

Text 2

Fol.

- 1-4 Assemblage made from red-lined staff paper, bound with yellow tape, 22.2 x 28.1 cm. Annotations *r* and *v*, black, red, and blue ballpoint ink, pencil and green pencil. Contents. Text 2.
- 5-6 White copy paper, 21.6 x 25.8 cm. Annotations fol. 5*r*, blue ballpoint ink. Contents. Photocopy of fol. 1*v* and 2*r*, above, note identifying use of this passage(?) for Cunningham dance "Rune."

For Pianist (1959)

Text 1

1. Photocopy of fair copy of Text 1 made by DT. 10 folios (4 folios, folios 5-6, 7-8, 9-10 bound with adhesive tape to form 3 bifolios), white copying paper, 22.3 x 28.8 cm. Title and signature "For Pianist Christian Wolff Copyright © 1965 by C. F. Peters Corp. 373 Park Ave. So. New York 16 N.Y." in black ink across bottom of fol. 1*r*. Annotation by DT, pencil, fol. 9*r*, "FOR PIANIST."
2. 2 folios, white copy paper, 27.9 x 21.2 cm. Annotations *r*. Contents. Photocopy of composer's instructions for performance.
3. Letter to DT, dated 24 Aug 89. 1 folio, typescript on white paper, 27.9 x 21.2 cm. Signed "Best -- / Christian."

Preparatory Materials

Fol.

- 1 Patch of white typing paper, torn to 10.8 x 7.7 cm. Annotations *r*, pencil. Contents. Performance order of pages in Text 1.
- 2-5 Off-white 8-stave music paper, torn from original binding to approximately 17.7 x 21.3 cm. Annotations *r*

and v, pencil. Contents. Content sketches for Text 2.

Text 2: 13 assemblages, various foliations

Fol.

- 1 White staff paper, 10.8 x 29.2 cm. Annotations r and v, pencil and red pencil. Contents. r. Realization of Text 1, p. 1. v. Pagination "1'" and column of 3 figures ("4./9.75/13.4"), lower r.
- 2 Ivory staff paper, 14.4 x 23.7 cm. Annotations r and v, pencil and red pencil. Contents. r. Realization of Text 1, p. 2. v. Pagination "2'" and inscriptions "40." / "SLIDE 40.," upper r.
- 3 White staff paper, cut to 6.3 x 24.2 cm. Annotations r and v, pencil and red pencil. Contents. r. Realization of Text 1, p. 3. v. Inscription "11.25," r.; pagination "3'," upper r.
- 4 White staff paper, 14.3 x 22.7 cm. Annotations r and v, pencil and red pencil. Contents. r. Realization of Text 1, p. 4. v. Inscription "10.8" and column of figures "10.9"/"25.7" lower r.; pagination "4'," lower r.
- 5 Presser Ivory staff paper, cut to 7 x 8.1 cm. Annotations r and v, pencil and red pencil. Contents. r. Realization of Text 1, p. 5, first version. v. Inscription ".7," lower r.; pagination "5'," upper r.
- 6 Ivory staff paper, cut to 7 x 7.9 cm. Annotations r and v, pencil and red pencil. Contents. Realization of Text 1, p. 5, second version. v. Inscription ".7," lower r.; pagination "5/2," center.
- 7 Ivory 3-stave staff paper, cut to 9.6 x 27.4 cm. Annotations r and v, pencil and red pencil. Contents. r. Realization of Text 1, p. 6, section a. v. Inscription "26.1125," lower r.; pagination "6A'," upper r.
- 8 Ivory and white staff paper, cut to 11.1 x 20.8 cm. Annotations r and v, pencil. Contents. r. Realization of Text 1, p. 6, section b. v. Column of figures "100.65"/"112.6," lower r.; pagination: "6B'," upper r.
- 9 Carl Fischer No. 104 staff paper, cut to 5.5 x 21.9 cm. Annotations r and v, pencil and red pencil. Contents. r. Realization of Text 1, p. 6, section c. v. In-

- scription "10.6," lower l.; pagination "6C'," upper r.
- 10 Ivory and white staff paper and white typing paper, cut to 17.9 x 21.9 cm. Annotations *r* and *v*, pencil and red pencil. Contents. *r*. Realization of Text 1, p. 7. *v*. Column of figures "39.825"/"98.925," lower l.; pagination "7'," center r.
 - 11 Ivory and white Carl Fischer staff paper, cut to 14.3 x 27.9 cm. Annotations *r* and *v*, pencil and red pencil. Contents. *r*. Realization of Text 1, p. 9. *v*. Column of figures "23.46" (with a dash drawn above the last digit)/"24.3," center r.; memo "SLIDE 16.5," lower r.; pagination "9'," upper r.
 - 12 Ivory staff paper, cut to 7.2 x 22.3 cm. Annotations *r* and *v*, pencil and red pencil. Contents. *r*. Realization of Text 1, p. 10. *v*. Inscription "9.75," center; pagination "10'," upper r.
 - 13 Ivory (Carl Fischer) and white (Passantino No. 10 14-stave) staff paper and white typing paper, cut to 15.7 x 23.5 cm. Annotations *r* and *v*, pencil and red pencil. Contents. *r*. Realization of Text 1, p. 11. *v*. Column of figures "26.125"/"31.75416," lower r.; pagination "11'" followed by arrow →, center r.

II. Other Sources

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