PERFORMANCE AND THE PAGE: An artist's investigation of the dialogue between the musical event and the written score

McInerney, Michael Joseph

http://hdl.handle.net/10026.1/826

http://dx.doi.org/10.24382/4851

University of Plymouth

All content in PEARL is protected by copyright law. Author manuscripts are made available in accordance with publisher policies. Please cite only the published version using the details provided on the item record or document. In the absence of an open licence (e.g. Creative Commons), permissions for further reuse of content should be sought from the publisher or author.
PERFORMANCE AND THE PAGE:
An artist's investigation of the dialogue between the musical event and the written score

by

Michael Joseph McInerney

A thesis submitted to the University of Plymouth in partial fulfilment for the degree of

DOCTOR OF PHILOSOPHY

Vol. 1: Written Inquiry

Dartington College of Arts
Creative and Performing Arts

July 2007
THEESIS CONTAINS CD/DVD
Abstract

This thesis is in two parts. Volume 1 is a discourse on notation and the musical event; Volume 2 contains a body of original works (scores, recordings and performance documentations).

The relationship between the two is symbiotic; the works might be seen as exemplification of the ideas propounded in the written discourse, or the written discourse may be seen as providing an analytical context for the works as a consistent body of creative research activity.

All the works in volume two were either created, or realised to performance, during the research period in which the discourse was written (November 1999 – September 2006). However, not everything created or performed during that time has been included; the choice of works to be included has been a judicious one of those which seem most pertinent to the topic of the thesis overall.

The research process which this thesis summarizes might be described as a series of excursions, both theoretical and practical, into the space opened up by the incommensurability between the score as prescribing artefact and the musical event as historical and sensual fact. The intention has been to gain, or present, an overview of this space as a whole in order to make it available to myself as a site of independent creative activity.

The primary field of research for the written discourse has been the body of works created within the concert tradition of the late twentieth century known collectively as ‘graphic scores’. Seen as a collective body, they provide variety of ‘takes’ on the discursive space which arises between score and musical event.

I have taken my critical methodology from a number of sources within twentieth century phenomenological thought and critical enquiry: most notably Heidegger’s observations about temporality, Derrida’s grammatology, Gadamer’s hermeneutics and some of Peirce’s observations about the nature of a sign.

Surprisingly, the thesis has a conclusion: that the works of the Viennese composer Anestis Logothetis can be seen to represent a radical re-assessment of the practice of realising musical events from written scores, one which retains the faithful reading whilst encouraging both an expanded sonic vocabulary and a greater stress upon the autonomy and independent musical practice of the interpreting performer.

Mike McInerney
Dartington
July 2007
Contents

Abstract p. 3
List of Contents p. 4
List of Illustrations p. 5
Acknowledgements p. 7
Author’s Declaration p. 8

1. Deconstructing the Transmission Model p. 9
2. The Musical Work and the Incursion of Writing into Music p. 21
3. Prescribing the Musical Event 1: Instructions for Performance p. 33
4. Prescribing the Musical Event 2: The Image of Sound p. 60
5. Prescribing the Musical Event 3: Models of Time p. 79
6. Approaching Chaos p. 102
7. On Play and Interpretation: Performing the Works of Anestis Logothetis p. 125
8. Towards a Hermeneutic Aesthetic p. 149

Appendices

1. Bibliography p. 166
2. Works Cited: Scores and Recordings p. 169
3. Anestis Logothetis: Principal Works 1944 – 1994 p. 171
List of Illustrations

1. Anestis Logothetis, *Struktur-Textur-Spiegel-Spiel* 1 (Courtesy of J. Spitzer-Logothetis) p. 17
2. Anestis Logothetis, *Struktur-Textur-Spiegel-Spiel* 2 (Courtesy of J. Spitzer-Logothetis) p. 17
3. Anestis Logothetis, *Struktur-Textur-Spiegel-Spiel* 3 (Courtesy of J. Spitzer-Logothetis) p. 18
5. Gordon Mumma, *Hornpipe* (1967; Courtesy of the composer) p. 36
6. Pauline Oliveros, equipment setup for *Beautiful Soop* (1967; Oliveros 1984, p. 43) p. 37
15. Christian Wolff, *Duo for Pianists II* (1958), one of four score pages p. 46
23. Witold Lutoslawski, Symphony No. 2 (1967), mm. 8 – 9 p. 74
24. Witold Lutoslawski, Symphony No. 3 (1983), opening p. 76
32. George Crumb, *Dream Sequence* (1976), one of two score pages p. 94
34. Witold Lutoslawski, *String Quartet No 1* (1965), system 17 p. 98
43. Sylvano Bussotti, *La Passion Selon Sade* (1966), m.8 p. 120
51. Anestis Logothetis, *Odyssee* (1963), and its accompanying acetate p. 144
Acknowledgements

Thanks first and foremost to my friend and mentor, Frank Denyer, without whose constant attention this inquiry would not have been possible. Thanks also to Richard Douglas-Green, of Green Studios, Plymouth, and his wife Maureen, whose belief in the value of my work has resulted in many finely crafted recordings and several photographs evocative of the events they document. Thanks also to Celia Lister ACLAS, for calligraphy tuition and advice and Julia Spitzer-Logothetis, for ready access to the Logothetis family archive.

Not forgetting the various friends and collaborators who willingly subjected themselves to peculiar aesthetic demands and whose conversations late into the night clarified, and occasionally overturned, my thinking: Pauline Amos, Barbara Bridger, Rosemary and Julian Burn, Duncan Chapman, Jeff Cloke, Neil Dowell, Lucianne La Salle, Emma Mckervey, Joanna Mayes, Tony Moore, Jan Mosbacher, Imogene Newland, Michael Neil, Stephen Rainbird, Abigail Robinson, Philip Robinson, Charles Ross, Sam Richards, Tim Sayer and Jenni Wittman.

Last but not least to my parents for their patience and support, Bob Gilmore for constructive criticism and advice as to what a thesis is, the library staff at Dartington College of Arts (Richard Taylor, Alistair McDonald and John Sandford for score-hunting beyond the call of duty), Corrie Jeffery (one-time research secretary) for nursemaiding at least the first part of this project, and the college technical staff, Will Clark, Pete Hooper, Adam Loveday-Edwards and Andy Pennington, for patiently turning incompetent requests into practical solutions.
AUTHOR'S DECLARATION

At no time during the registration for the degree of Doctor of Philosophy has the author registered for any other university award.

This study was aided with a four-year fee waiver bursary from Dartington College of Arts.

Signed: ____________________________  Date: ____________________________

Signed: M. J. H. C.  Date: November 2007
Chapter 1
Deconstructing the Transmission Model

1.1 Preamble

Once enough scores have been composed, the artist as composer can stand back from them and see them as others might — as no more than templates, sets of marked pages which are in themselves both silent and impenetrable. Once enough events have been realised that are clearly works, though no score as such remains once the show is over, the artist as performer begins to perceive the event as an identity which exceeds any composerly conception of it.

Soon the transmission model begins to break down — the composer’s act of writing, the interpreter’s hermeneutic engagement, the concert performance before an invited audience; the bridge from one to the next becomes tenuous, fragile and uncertain. One begins to see score-making as a ritual of writing, interpretation as a ritual of fidelity and the culminating concert as a celebration of a concept of works which is alternately pompous and vulnerable.

This disintegrating series of bridges then is the site of my own work — a place of performances whose mediation by score becomes a series of negotiations, a series of marked pages whose calligraphy engages with its own site, as a space of mark-making, a ritual of writing and as a reflection on what it is to be read, and a practice of interpretative rehearsal whose query remains existential — what is it to be a faithful reader?
The disintegrating series of bridges and the concert platform. For the magic of the
singular concert event will never leave me alone; it is here that ideas and dilemmas
take on flesh, become enacted. This is the site which has begged the question.
Because, despite many prescriptive scores with fixed symbol systems, and numerous
recitals, most of my work as a performer, and much of my work as a composer, has
lain at odds with the unitary conception of the work implicit in the transmission model
– comprising performances which are part planned, part written, part improvised,
leaning heavily on sounds and electronic media which seem resistant to the traditional
processes of musical prescription, and scores which seem intent upon reflecting on
themselves as written objects, my work does not sit comfortably with the concept of a
musical work as an entity with which one can ‘given the appropriate expertise and
musical imagination... become acquainted ... without the aid of a performance by
simply reading the score’ (Ingarden 1986, p. 18).

Ultimately, it is the centrality of the concert event in my own life as artist and
consumer which rescues the work for me because it is by repositioning the fulcrum of
the transmission model away from the transcendental ideal of the work and towards
the unique prescribed event that I am able to build a platform for an artistic practice
which can continue to engage with prescriptive scores and live concert performances
without betraying the aspects of score, sound and performance which I value.

1.2 Locus

This then is the topic of this Ph. D – an investigation of the transmission model of
musical activity through creative work, and critical enquiry. As such, it finds its
natural home, as a field of enquiry, in the body of creative work created within the
concert tradition during the latter part of the twentieth century known collectively as
‘graphic scores’.

My attitude to my own work is analogous to my attitude to this collective body. The
graphic score is not a singular entity forever being rewritten by each composer who
comes to it anew, but is a range of propositions about the transmission model of
musical activity. One could regard my own work, and the critical background I have
outlined above, as occupying the same conceptual co-ordinate space, with different
works being akin to points in that conceptual space.

Any score might be considered as a written artefact which holds a particular position
with relation to musical activity. Most scores within the Western concert tradition in
terms of this positioning of course hold pretty much the same stance. The world of
graphic scores covers this conceptual co-ordinate space by proposing, as a body, a
variety of stances. As does, incidentally, my own work seen as an oeuvre.

The same basic criterion then applies both to those works of my own that are included
and reflected upon here and to those works from the body of late twentieth century
graphic scores which form the analytical meat of my theoretical reflections\(^1\). That is to
say, a work (either my own, or the work of another artist) is included if it exemplifies
most clearly one particular stance, as a piece of writing, with regard to the relationship

---
\(^1\) Perhaps I am a little more generous to myself. My works are cited more often than those of any other
artist; after all, this thesis is not only a discourse on notation, but also an attempted critical context for
my own work. However, these works are not subjected to so rigorous a critical investigation, for
superstitious reasons. I do not believe, for instance, that Lutoslawski could have completed the second
and third symphonies as he did had he subjected them to the kind of critical analysis as pieces of
writing that I have (Thesis Vol. I, pp. 71 – 76); it is not my intention to violate my creative process by
subjecting my own works to such dissection.
between notated score and performed outcome. A key intended outcome of the thesis overall is a thorough articulation, by exemplification, of this space of engagement as I see it.

Though the heyday of graphic score composition lay without argument in the nineteen sixties and seventies, the written component of this thesis is not intended as a mere historical survey. Several issues which remain pertinent to the state of the art of concert music today were addressed, but not resolved, in this body of works. By bringing together a number of reflections – on the nature of experiential time and its relation to the prescribed event, the representation of sound, the relationship between writing and identity, the nature of a sign, the problem of faithful reading and the idea of a work of art – I hope to use my selection and analysis of these works to (1) bring these notions into a clearer perspective (2) demonstrate the continuing contemporary relevance of much of this work and (3) provide an analytical and contemporary context for my own work as an artist.

1.3 Methodologies

I am positing that writing has made an incursion upon music; that that incursion tells us as much about the nature and effect of writing as it does about music. Central to my project is an interrogation at this site of incursion, in order to elicit an understanding as to what effect upon musical practice, and conceptions of music, that this incursion may have had. I would ally this project with the larger Grammatological Project proposed by Jacques Derrida, which seeks to elucidate the presence of writing within many realms of human culture and experience.
In order to carry out this project I have adopted three core strategies.

1) To investigate the liminal zone between music with score and music without so as to create a springboard from which it might be possible to investigate the notion of a musical work as itself a symptom of writing's incursion into music.

2) To pursue with as much intelligence as possible the methodologies of prescriptive scoring as made apparent in the body of works known collectively as 'graphic scores'.

3) To open out the relationship between score and performed event from the singular bond of transmission to a plurality of intentions and expectations in the composer's act of score-writing and the interpreter's hermeneutic act of reading.

Though the format of the written thesis is a survey, its thrust is narrative. It follows the sequence of methodologies outlined above so that the first might open the scene, the second pursue a conceptual quarry deeper into the woods of understanding until one is lost in uncertain territory and the final, radical solutions which I propose might appear as existentially necessary, rather than as symptoms of a private aesthetic.

Unsurprisingly, this trajectory frequently, but not consistently, parallels the temporal sequence of my own creative practice as it has developed through the seven years of this project. It is in one sense, little more than a re-tracing of my own steps. However, the actual sequence of dates of completed compositions (the date on the end page of a score, as it were) or performance realisations tells little about the process, which is one of eddies and overtakings. The ordering of works in volume 2 is a judicious one,
conscious of the historical sequence, but modified where it seems to reflect more authentically on the development of particular aesthetic themes, or the argument presented in the written thesis.

In addition to the grammatological background, this inquiry takes methodology from four key sources:

1) Charles Saunders Peirce’s concept of a sign
2) The phenomenological investigation of the underlying experience of time which underwrites our concept of temporality, as expounded by both Edmund Husserl and Martin Heidegger, (with a nod en passant to William James)
3) The contemporary debate about of the ontological status of a musical work, especially as surveyed by Lydia Goehr in *The Imaginary Museum of Musical Works* (Goehr 1994) and as analysed by Nelson Goodman in *The Languages of Art* (Goodman 1976)
4) The analysis of the hermeneutic process provided by Hans Georg Gadamer in his masterwork, *Truth and Method* (Gadamer 1975)

1.4 Beyond the Transmission Model

The prescriptive score represents a dilemma: in order to convey a sonic idea through writing, the composer must accept a coded symbol system with its concomitant articulated field of sonic reference. In order to faithfully reproduce such works the performer must discipline themselves to allow the reproduction of these sonic memes to precede any other intimacy, either sonic, or expressive, with their chosen
instrument. The instruments in their turn evolve to become closer and closer to the notational ideal, and further from their original identity as sounding object.

However one might clothe it, the alternative is a breakdown of the unitary conception of the transmission model.

A general loosening of the unitary conception of the work is noted in Umberto Eco’s book, *The Open Work* (Eco 1989). Eco begins by observing that unlike a traffic sign, which ‘can be viewed in only one sense’ (ibid., p. 3)\(^2\), a work of art, even one which is *closed* in its form, is *open* on account of its ‘susceptibility to countless different interpretation which do not impinge on its unadulterable specificity’ (ibid., p. 4). This plurality of interpretative readings is one of the qualities which gives the artwork its richness to the experiencing observer.

But some scores composed in the late twentieth century are ‘“open” in a far more tangible sense’ (ibid, p. 4) on account of an internal structural mobility. Eco analyses several of these, including two also cited in this thesis, Boulez’ *Troisième Sonata* and Stockhausen’s *Klavierstück XI* (cf. pp. 45 – 53, pp. 90 – 92, p. 135). They provide a ‘kit’, a ‘field of relations’ which ‘offer the interpreter ... a work to be completed’ (ibid., p. 19).

Such works do not represent a step beyond so much as an extension of the transmission model because the player autonomy which they appear to offer to the performer/interpreter is no such thing. The performer is only given laxity in those

\(^{2}\) and if it is transfigured into some fantastic meaning by an imaginative driver, it merely ceases to be *that* particular traffic sign."
details of the work which were not in the first place pertinent features of the work's identity (as I explore further in chapter 5 of this thesis). The ideal of the unitary conception in the composer's mind inherent in the transmission model is not in these works broached. As Eco stresses, 'though the composer 'does not know the exact fashion in which his work will be concluded he knows that 'once concluded the work in question will still be his own' (ibid.). Eco remains committed to the ideals of the transmission model — as he puts it, 'a work can only be open only insofar as it remains a work; beyond a certain boundary, it becomes mere noise' (ibid., p. 100). The question remains: where does the boundary lie? I would like to suggest that it lies farther out to sea than Eco imagined.

The score of Struktur-Textur-Spiegel-Spiel (1959) by Anestis Logothetis appears on first glance to be a kit such as Eco outlines. But on closer analysis, its capacity to provide a 'field of relations' seems uncertain. There are four systems in this score. Taken as a sequence (though this sequence need not be the basis of the temporal order of the work in performance), they can be seen as representing a gradual disintegration of traditional Western notational and interpretative practice. The first system (Fig 1) is the one which resembles most closely our five line stave, though notes, despite remaining identifiable as pitch signs, have disintegrated to represent no more than families of pitch relations. The second system (Fig. 2) retains symbols which resemble closely some of the pitch signs we would recognise as appertaining to the five line system, but without the stave. Logothetis describes these as 'structures which are leaving the 5-line system and its pitch signs, which will very soon be the source for the symbols of my graphical notation.'\(^3\) The remaining two systems (Fig. 3, Fig. 4)

\(^3\) ibid.
become increasingly graphic: ‘prolonged tunes, which are bound together via
dynamic sign-scissors. These scissors, by themselves without the five-line system, are
fundamentally the signs for loudness, but also act as a basis for my own association
signs, which will form the mainstay of my soon-to-be-completed score Parallaxe, and the final system consists of 'signals for action.'

Fig. 3 Struktur-Textur-Spiegel-Spiel 3 - 'Direction signs'

Fig. 4 Struktur-Textur-Spiegel-Spiel 4 - 'Gesture signals'

4 ibid.
5 ibid.
This piece marked a watershed for Logothetis. Having previously composed more than fifty works in standard notation, the devices in *Struktur-Textur-Spiegel-Spiel* became the basis for his future oeuvre. The composer described it as being designed so that the 'interpreter may infer from the diagrams to give form in his own capacity to the structures implicit in the sound-generating signs of the score. In this way there is a double reflection, both on the composer as one who puts together, and also on the interpreter as one who decodes what he sees. The resultant work is something of a mirror game, playing in each moment with the constellation which arises between the seen and the heard.'

It is difficult from this score and these instructions for the interpreter to imagine what Logothetis imagined the work, as a performance, might be. It is only in retrospect, as he continues to clarify his ideas, and exemplify them with other scores, that such an interpretative act becomes feasible. What is significant in hindsight is the amount of preparatory contemplation which must have gone into creating this apparently facile score. For, as this thesis attempts to demonstrate, many of the dilemmas and crises inherent in the tension between the ideal nature of the musical work and its realisation in performance have in this work been engaged with on a serious level and resolved by a considered re-imagining of the relationships between work, score and performance.

At this point, a deeper analysis of these issues is called for.

---

6 From the instructions to *Struktur-Textur-Spiegel-Spiel*. Trans. M. McInerney/J. Spitzer-Logothetis
The analysis which follows is in three parts. The first part (Chapter 2) attempts to lay out the ground – the fundamental dilemma of writing’s incursion into music. The second (Chapters 3 to 6) is classificatory – an attempted survey, by types, of the modes of relationship between prescriptive score and performed event. It might appear too detailed, too almost like a digression from the thrust of the argument of this thesis. But I consider it necessary on the most basic grounds: it is only by such display of the scale of the field that it is possible to demonstrate that the musical event is multi-faceted, and cannot be prescribed by any one method of notation (nor, on account of its inherent structures, by writing itself). The final part of the thesis (Chapters 7 and 8), taking its cue from Struktur-Textur-Spiegel-Spiel, and drawing upon notions from Gadamer’s Truth and Method, Peirce’s theory of signs and some analysis of my own of the meanings of the page based loosely upon Reading (Il)legible Pages, an article by the poet and academic John Hall (2004), attempts to provide a critical platform from which Logothetis’ work can be faithfully understood, and the work of many other composers referenced in this thesis seen in a new, and exciting, light.
Chapter 2
The Musical Work and the Incursion of Writing into Music

2.1 The Influence of Writing upon Music

The influence of writing upon music can be seen as essentially twofold: firstly, in the idea of a score, with its concomitant concept of the musical work; secondly, as a prescribing activity in itself, one which necessarily accentuates particular aspects of sound and musical behaviour.

The idea of a musical work is one of an identity which is more than the mere event of doing in which it manifests. A musical work is an identity which, in some sense, brings together a family of performances and potential performances as belonging together as varied outings of the singular identity of the work. According to Lydia Goehr (Goehr 1994, p. 15) this notion of a supervening concept can be understood from one of two vantage points, either Platonist or Nominalist. For the Platonist (Goehr cites the philosophers Waltersdorff and Ziff as examples), musical works are universals, which exist beyond any particular performance of them. In the Nominalist view (Goehr cites Goodman and the aesthetic philosopher, Alan Tormey), works are 'abstract in so far as they are sound patterns exemplified in different performances. Yet works are essential structures or patterns belonging to and inhering in other things, rather than distinct entities in their own right. Any substantiality they have is exhausted by that of their performances' (ibid.).

In either case, the factor of the score remains fundamental. For it is the score which preserves the identity of the work from one event to the next and identifies the key
features which distinguish it from other works. Whatever the ontological status of the work, it is the written score which acts as guardian of its identity. This statement may appear wildly general and two counter-examples spring immediately to mind: the recorded event, and the presence of works within oral folk cultures. However, the former is an inappropriate exception within the concert tradition with which my investigation deals, and the latter is susceptible to an analysis which brings it back to within the fold of musics that have been infected by writerly practices.

The locus of this thesis is the concert event, and no other; it is the identity of events within that frame with which this investigation is concerned. A recurrent background to this thesis is the identification of the Western tradition as a culture—a kind of self-conscious ethnomusicological enquiry, if you like. My perception is that the rehearsal process of the concert tradition is a fundamental feature of its culture; this feature—the interpretative ‘play’ around the prescribing score—is a central feature without which one is engaged in something else. Given this premise, the dilemma of the recorded work—though it might prove of interest to the theoretician—belongs elsewhere.

Within grammatological enquiry, the term ‘writing’ implies much more than the inscription of alphabetic symbols on a page as a precursor to speech. As Derrida observes, ‘All societies capable of ... bringing classificatory differences into play, practice writing in general’ (Derrida 1976, p. 109). Writing refers not only to ‘literal pictographic or ideographic inscription, but also the totality of what makes it possible...thus we say “writing” for all that gives rise to an inscription in general, whether it is literal or not or even if what it distributes in space is alien to the order of...
the voice: cinema, choreography, of course, but also pictorial, musical, sculptural "writing" (ibid., p. 9).

In this context – that of the broadened concept of writing – the presence of musical 'works' within an oral culture can be seen as just one more symptom of writing within that culture, even if the presence of that writing has not yet been formally acknowledged by the institution of a system of written signs, as marks on paper. Indeed the an oral culture of musical works can be regarded as an example par excellence of this phenomenon, one which helps to demonstrate that the expanded definition of writing is closer to the reasonable use of concepts than it might at first appear.

The key term here is 'prescription'; the clue lies in its etymology. The pertinent features of a work are as much prescribed within an oral tradition, despite the lack of written notation, as they are within a musical culture which is notation-dependent. The arrival of notation, as marks on paper, represents less a revolution in musical practice, than a continuation of that which precedes them. Western notation, for instance, arrived in a series of stages, each of which lay embedded in an already living oral tradition. It begins as a mnemonic device, which only acquires composerly status as the technology, its representative power, becomes increasingly sophisticated (Treitler 1981, 1982, 1984; Crocker 1977).

That is to say, an oral tradition which sustains a culture of works is already a culture of 'writing', regardless of the presence or absence of a system of notation in the sense of marks on paper. Works are 'prescribed' in terms of their pertinent features with just
as much authority as within a notation-dependent culture such as that of the Western concert hall. This distinction is an important one to note, as it underlies some of the definitions which follow.

I want to regard this presence of writing from two sides. The first, which follows in section 2.3, concerns itself with writing pure and simple, the modalities of writing, as it were. The second concerns itself with writing as prescription, through the survey of graphic scores presented in chapters three to five.

2.2 On the identity of a musical work

The Western concert tradition is one which seems almost predicated on the notion of a musical work. Concerts comprise, by and large, renditions of perhaps two or three, perhaps half a dozen 'works'; listeners and performers rest secure in the knowledge that any of the 'works' might occur elsewhere, on other concert programmes.

For there to be a tradition of musical works, three criteria need to be satisfied. The work must be a being of such kind that, firstly, it might be realised in performance and, secondly, a number of performances could belong together under the auspices of a single 'work' as realisations, or attempted realisations, of this singular piece. For this to be possible, there must be features of the work which are or could be recognised as pertinent. These features are the shared qualities which unite a set of performances as realisations of the singular work. That is to say, beginning with the need for something repeatable it follows that a musical work has a determinate inner landscape.
The third quality is the matter of boundary, of difference. A musical work is not only recognisable from the performances which realise it, but also from those which do not. Its pertinent features can also be understood as criteria such that some performances do not satisfy them and in consequence are excluded from the set of realisations of said work.

These are the basic formal requirements for a musical work: internal articulation, autonomy and repeatability. Here is a composition, however. *Play the clarinet; stop.* It satisfies all the above criteria; any solo performance for clarinet becomes this piece. But there is something absurd about the generality of this instruction. So in practice this matter of difference has also about it a tradition of degree, the extent to which its pertinent features identify it, and this arises from context, from the establishment of its identity within an already given community of musical works.

If we can set up the conditions for these criteria to be met – musical performances, some of which are perceptible as repeats, presenting a family of realisations of one and the same work, clearly distinct from other comparable sets, with all the attendant internal articulations implicit in these arrangements – then we have a culture of musical works such as I have outlined above for our concert tradition. But what a work is, turns out under analysis to be somewhat hazy. Musical works, as Lydia Goehr observes in *The Imaginary Museum of Musical Objects* (Goehr 1994) ‘cannot be physical, mental or ideal objects’.

‘They do not exist as concrete, physical objects; they do not exist as private ideas existing in the mind of a composer, a performer, or a listener; neither do they exist in the eternally existing world of ideal, uncreated forms. They are not identical, furthermore, to any one of their performances.'
Performances take place in real time; their parts succeed one another. The temporal dimension of works is different; their parts exist simultaneously. Neither are works identical to their scores. There are properties of the former, say, expressive properties, that are not attributable to the latter. And if all the copies of a Beethoven Symphony are destroyed, the symphony itself does not therefore cease to exist, or so it has been argued' (Goehr 1994, p. 3).

There are two ways of examining the paradox of the ontological state of the musical work: one analytic, the other historic.

Nelson Goodman, in The Languages of Art (Goodman 1968), proposes an analytic approach. The score, for Goodman, ‘has, as a primary function, the authoritative identification of a work from performance to performance’ (ibid., p.128). That is, it is the score which not only provides the device for the comparison of events as to whether they belong to the family of compliant performances of the work but also acts as the vantage point from which the work can be seen — at least in its pertinent details — as a whole. This is a knife which cuts both ways, for not only does the score identify a class of compliant performances, but also, should we be able to hear and identify a class of performances as compliant, whatever mnemonic device we have employed to do so constitutes a score in this logical sense. One can imagine a system of scores, as Goodman does, so simple that it divides the world of performances into only ‘two characters, one having as compliants all piano performances beginning with a middle c, and the other having as compliants all other performances. Such a system would be notational, though for this system, there could be only two works’ (ibid, p. 190).

Goodman’s analysis then goes deeper into notation, to enquire as to the properties the score must hold in order to fulfil this basic requirement of identifying a family of compliant performances. Inscriptions are defined as those marks, visual or auditory or whatever, made with some articulate intention. A symbol scheme consists of
characters, where characters are a certain class within the wider field of inscriptions. The essential feature of characters within a symbol scheme is that they may be freely exchanged without any syntactical effect. That is, the characters which make up a symbol scheme are character indifferent and disjoint. Two marks are character indifferent when, if they are considered to belong to the same character, they belong to that character alone, and no other. A scheme of characters is considered disjoint, if given two separate characters, and a mark belonging to neither, it is at least theoretically possible to distinguish separately that it does not belong to the first and also that it does not belong to the second.

However for a symbol scheme to work as notation it must also work as a symbol system. That is it must have a field of reference which is, in the widest sense, performable. For this to be possible, three further conditions must be satisfied. These conditions apply to the relationship between symbol scheme and its field of reference. Firstly, the character, and its various inscriptions, should be unambiguous; a character refers to one singular and distinct identity within the field of reference. Moreover, within the field of reference itself, the compliance-classes must be disjoint and no two characters may have the same compliant. In other words, any referent in the field defined by a character in the symbol scheme must not intersect with another referent; any referent within the field defined by a character in the symbol scheme must not also be the referent of some other character.

For the concept of the score as guardian of the work’s identity to be logically consistent and plausible, these conditions are necessary. However, they run against
both our intuitive understanding of a work and of the sensual reality of music as a sonic medium.

A few wrong notes do not stand in the way of a performance being the realisation of a work, except to the logician. Goodman again, 'for by a series of one-note errors of omission, addition, and modification, we can go all the way from Beethoven's *Fifth Symphony* to *Three Blind Mice* (Goodman 1976, p. 187). There is a minor tradition within aesthetic theory which attempts to bring the concept of a score and our everyday intuition of it closer together. However, despite repeated attempts, real clarity on this topic seems hard to come by. This, Goehr argues, is because of a fundamental difference between practice and theory. The tradition of musical works arises as a particular cultural practice, and is best understood as an "open concept", where an open concept can be described as:

1) not corresponding to fixed or static essences;
2) not admitting of absolutely precise definitions of the sort traditionally given in terms of necessary and sufficient conditions;
3) intentionally incomplete or 'essentially incontestable' — because the possibility of an unforeseen situation arising which would lead us to modify our definition can never be eliminated;
4) distinct from, though related to, vague concepts. A concept is vague when there is no definite answer whether the term applies' (Goehr gives the examples of 'pink', 'tall', 'bald' and 'middle-aged'; Goehr 1994, p. 91).

This historicist position embraces uncertainty as to the ontological status of a musical work as inherent; the musical work arises as a practice within a culture, and might evolve with it. Though Goehr's position is healthy and preserves a great degree of flexibility, allowing it to come close to much contemporary practice around score and performances, it retains a conceptual rigidity in understanding the relationship between performance event and written artefact. By whatever means, the score
remains for Goehr the artefact that ‘has, as a primary function the authoritative identification of a work from performance to performance’. Goodman’s observations make it clear that for this to be possible, the symbol scheme of the score must refer to a field which is disjoint and within which any referent defined by a character must not also be the referent of some other character.

That is to say, the material to which a score refers must come to us already articulated. This kind of articulation is dependent upon what Derrida describes as a ‘concept of linearization’ (Derrida, p. 85), which creates the three limits of ‘discreteness, differance and spacing’ (ibid., p. 86). These in turn give rise to a ‘vulgar and mundane concept of temporality’ (ibid.) which further restricts what can be articulated to that which is ‘homogenous, dominated by the form of the now and the ideal of continuous movement, straight or circular’ (ibid.).

2.2 On the writerly (and unwriterly) in music

The modalities of writing, therefore, leave an ineradicable imprint on the articulation of the prescribed musical event. Not only on the what, but on the how.

The natural inclination of written music is ‘composition’: the putting together of discrete sonic identities into sonic architectures. The concept of temporality is spatial: a boundless, homogenous void, endlessly revisitble. Simultaneity, recollection and juxtaposition are its symptoms. These properties make themselves audible as co-ordination, repetition and differentiation. For me, these three features represent the heart of what writing brings to the moment of musical performance.
In my own *Remembered Fragments* (2005; Thesis Vol. II, pp. 276–279; CD 5, track 11), aesthetic or expressive qualities are secondary. It is how the four notated fragments bring qualities of co-ordination, repetition and differentiation into, and consequently transform, an otherwise improvised event which interests me. The solo recital *Miyajima Gates* (2004; Thesis Vol. II, p. 264; CD 2) comes from the same place but extends the form, contrasting composed works from the western piano repertoire with alternated sections of spontaneously improvised material.

This is the 'how' of notated music; the 'what' is the material itself, the prescribed, homogenous musical identities. They bring forth Derrida's 'form of the now and the ideal of continuous movement' by their continuing self-similarity. As far as written composition is concerned, sound exists as 'sounds', essential sonic identities whose evolution through time is to be overlooked so that they might be susceptible to representation by singular signs.

Several composers in the twentieth century have complained about a bias in our notational system, that it fixes the sonic material of a work to timbral and temporal elements (what Trevor Wishart calls the 'pitch-time lattice paradigm' (Wishart 1994)). Even much of the composition which appears to employ 'sounds' in a broader sense only employs glissandi that have been fixed in terms of start point, end point, start time, end time and timbre and percussive sounds that can be labelled distinctively – in short sounds which may not appear elemental in the same sense as instrumental pitches but which nonetheless remain suitable as elements in a referential field as prescribed by Goodman.
In September 2004, I initiated *The Analogorak Sessions* (Thesis Vol. II, p. 265; CD 5, track 10, www.analogorak.co.uk/analogoraksessions.htm) in the back room of my local pub. *Analogorak* eschewed traditional instruments and scores in favour of noise making and electronics. The aim was the invocation of an unwriterly music — a music incapable of repetition or the establishment of a fixed field of sonic references and unsuited to the modes of articulation mentioned above — simultaneity, differentiation and recollection. This is not to say *Analogorak* were not listening to one another; far from it — the level of listening was extraordinary. But the nature of the sounds we made — evolving sound continua over periods of several minutes — ensured that such lattice-based concepts of co-ordination were inappropriate, if not unattainable.

Composers who aspires to work directly with sound in all its richness and complexity find themselves up against this barrier, which is inherent in the technology of composition by written prescription. They must either work with recorded sound, or see the transmission model dissolve before their eyes.

Logothetis chose the latter solution. In hindsight, that is the enigma behind *Struktur-Textur-Spiegel-Spiel*. If one chooses to be faithful to both the written score and a truly expanded concept of the sounding event, it is the composer's 'sonic idea' which has to give. To see this dilemma and this solution most clearly it is necessary to visit in considerable detail the ostensible bridge between 'sonic idea' and realising musical event — the score as prescribing artefact. For the score acts as carrier of the composer's conception in three ways — as instructions for action, as image of sound, and as temporal map — often all three simultaneously. But because of the multiple relationships between score and event posited by the culture of graphic scores, it is
possible to present these three dimensions separately and articulate their qualities in considerable detail. One thing becomes clear: there is no model prescriptive score which covers all bases. The choice of mode of scoring is already a creative act which nominates certain features of the work as pertinent and simultaneously necessarily excludes others equally present in the event of realisation as not pertinent to the identity of the work in question.

Writing, particularly musical writing, is not transparent. A musical score focuses on certain aspects of the musical event; from these, it identifies the features pertinent to the identity of the particular work.

The following three chapters seek to demonstrate that the range of options is a large one, that this arena may in itself provide a reasonable topic for artistic engagement.
Chapter 3
Prescribing the Musical Event 1: Instructions for Performance

3.1 A Tabula Rasa

It appears that musical works have always grown up within a culture of musical practice with known sounds, instruments and practices. But it is possible to imagine *tabula rasa*. Imagine a world without music, a world which begins from compositional activity. Such a world would have to begin from first principles – from sound sources and sound making activities. We shall begin here.

Both of these primary axes might in their turn be further qualified.

In the case of performance activity, what occurs is a series of relationships, between the performers and their instruments, between themselves and the space, and between one another. How these relationships are defined is the first level of compositional activity.

In the case of the sound producing resources, it is their definition as instruments and spaces, and any necessary relations between them. It is possible in this case to compose no more than the instruments, the sound-making resource. Any sound-making activity carried out upon this instrument becomes then a realisation of the work.

The identity of a musical work however is rarely simply its instrument; with imagination, a performer can draw such a broad variety of sounds from any given source, however definite its design, that the need for a secondary level of prescription
generally arises. The second level of prescription of a work then restricts the field yet further, to the vocabulary of permitted sounds which will constitute the work. If the instrument already has a cultural heritage, such as is the case with contemporary Western orchestral instruments, it might already have an acquired vocabulary of associated sounds which can therefore be coded without reference to the performance activity which gives rise to them. As these sounds precede any particular instance of the instrument, and are considered as already known by the performer, they may be referred by a conventional code shared by performer and composer. However, this level of coding is not necessary: if the composer wishes to expand the vocabulary of sounds associated with the instrument, or compose for original instruments, they may well be compelled to refer to the activities associated with the sounds in order to have a realistic hope of these sounds being reproduced in performance.

The above analysis forms the basis of this chapter. That is to say, nineteen scores will be taken as examples (two by Gordon Mumma, one by Pauline Oliveros, two by John Cage, one by Helmut Lachenmann, one by George Brecht, two by Mauricio Kagel, and a parallel sequence of works by Karlheinz Stockhausen and Christian Wolff).

Each score can be seen as an exemplar of one or more of these four key features:

1. The prescription of sound-making resources as the primary feature of the work
2. Performance activity in relation to a known resource
3. Performance activity in relation to new sound resources
4. The relationship between performers as the primary level of articulation of the work's identity
3.1 Sound-making resources as the primary feature of the work

For Gordon Mumma, what is important is ‘system-concepts: configurations which include sound sources, electronic modification circuitry, control or logic circuitry, playback apparatus (power amplifiers, loudspeakers, and the auditorium’) and even social conditions, beyond the confines of technology’ (Ashley 2000, p. 111). Integral to the score of compositions such as Medium Size Mograph (1963), Mesa (1966) and Hornpipe (1967) is a circuit diagram, which specifies a particular design of “cyberonic” circuitry – the design for a piece of sound-processing equipment. In each work, the machinery is not played as such, but has its own internal logic which produces independently an array of live-sounds-processed-into-electronic alongside an acoustic performance.

In Hornpipe (1967), the circuit diagram is the work – the cyberonic console does not have an independent performer. Instead, the process of exploration provoked for the performer by the console defines the trajectory of the work in performance. The opening sounds played upon the instrument trigger silent responses in the console which lead to certain circuits becoming unbalanced. ‘While rebalancing, various circuit-combinations occur that produce complex electronic sound-responses’7. As these begin to be heard on the loudspeakers which come out of the console, a further level of interplay becomes audible, in which live sounds, electronic sounds and the continuing re-balancing of the internal circuits produces a texture which combines horn sounds, electronic response-sounds and electronic sounds articulated directly by horn sounds. The work becomes an active duet between horn player and cyberonic

---

7 From the sleeve notes to Mumma’s album, Live Electronic Music (2002)
console, in which the performer learns in performance 'which sounds are most unlikely to unbalance and rebalance the cybersonic console.' The work ends when the soloist finds the sustained sound which balances all the response circuits, and brings the console to silence.

In a similar fashion, the soundworld of Pauline Oliveros's *Beautiful Soop* (1967) depends on a circuit diagram. This plan fixes a specific arrangement of sound generating and sound processing equipment (two vocal microphones, a Buchla Modular Electronic Music System, and four specific tape recorders – a Skully 280, an Ampex 350 and two Ampex PR 10s) to generate an equally specific world of resonance and echo effects. The work is what comes out of the speakers.

---

8 ibid.
There are three initial inputs (the two vocal microphones and the Buchla music system). However the playback heads on each of the three tape recorders are fed directly back into the record heads of the same machines. Because each machine has a slight difference in distance between playback and record head, and because each delay line is controlled by a separate mixing pot, the result is a study in electronic echo effects and layering.

3.2 Re-interpreting a known instrumental resource

In *Pression* (1969) for solo cello, Helmut Lachenmann abjures known conventions of musical notation in pursuit of an action score which instead refers to the cello as a site of activity. Each page of the score shows a simple illustration of the instrument down the left hand margin of the score, and a timeline running away to the left from that margin. Instead of pitch being indicated by conventional signs, it is illustrated by the combination of the position of the hand upon the strings and the relative position of the hand along the neck of the cello as time flows (See fig 7. below).
In this manner, details of nuance and pitch glissando which lie outside the bounds of a more symbolic form of pitch notation are made available to the composer.

In 26' 1.1499" for a String Player (1955), and 59½" for a String Player (1953), John Cage adopts a different solution to much the same problem — the representation of subtle shifts in pitch and bow pressure on a bowed string instrument. In each case, the score represents, in the four parallel rectangular spaces which dominate each page, the strings of the instrument. The vertical placement of points within these spaces indicates the location at which the string is to be stopped. Points connected by vertical lines represent multiple stops, with the arrow giving the direction of the broken chord in the case of triple and quadruple stops. The two smaller bands — the one above, the other below the four primary bands — represent, respectively, the amount of pressure on the bow and hence the amplitude of the note, and a range of noises of any type, with the vertical placement of the sign within the rectangle corresponding to pitch.

In 34' 46.776" for a Pianist and 31' 57.9864" for a Pianist (both 1954), Cage attempts to translate the same kind of correspondence between instrument and score from the realm of string instruments to that of the piano. Pitches then are specified, as is appropriate to a keyboard instrument. What are rendered in the same analogue
fashion are the three parameters of degree of force, distance and speed of attack, the three parameters which between them might prescribe the tone of a pianist's attack.

Fig. 8 John Cage 26' 1.1499" for a String Player (1955)
My own score, *Pronouncements and Ruminations* (2001; Thesis Vol. II, pp. 42 – 89; CD 4, track 1), is an attempt to take this project – that of representing a conventional instrument as a site of activity – as far as my imagination is able. Like *Pression*, it is composed for solo cello (though I was unaware of Lachenmann’s composition at the time); like Lachenmann’s score, it uses an image of the cello as one reference parameter down the left hand margin, and runs a timeline away from that margin across the rest of the page. However, along the timeline also run four lines to represent each of the four strings. This enabled me to give extremely precise details as to bowing, dynamics and pitch shading at all times. It also made it possible to represent clearly the position of the bow, as well as the left hand fingers (cf. p. 41 of the score, which generates a *sul tasto* effect, and p. 30, which illustrates a continuous bowing movement between *sul tasto* and *arco*). Many other effects could also be clearly represented – varying speeds of *spiccato* (p. 19) and trill (p.39 ff), artificial harmonics (p. 33) and some subtle glissando gestures (p. 23). Occasionally also, the notational paradigm would be abandoned for one which represented the whole body of the cello (p. 11, p. 64, p. 65), for percussive effects.
The original version, *Neumes and Epigrams* (1999 – not present in the thesis), also represented the cello itself in a more visually straightforward manner, with the pegbox at the top and the spike at the bottom. However Tony Moore, the cellist for whom it was originally composed, complained that this convention with rising pitch corresponding to a falling line ran too much counter to the performer’s ingrained understanding.

### 3.3 Prescribing sound-making resources and performance activity

There is no essential or necessary connection between performance activity and sounding result, even when the sound-making resource is specified in considerable detail. George Brecht’s *Incidental Music* (1961) for instance specifies both instrument and activity quite clearly. However, the substance of the piece lies in the triple pun in the title: the music – the sounding result – arises from incidents; it is incidental to the action, a side-effect without a necessary one-to-one connection; it is incidental music, the accompaniment to the actions, not their raison d’être.

**INCIDENTAL MUSIC**

Five piano pieces, any number playable successively or simultaneously, in any order and combination, with one another and with other pieces.

1. The piano seat is tilted on its base and brought to rest against a part of the piano.
2. Wooden blocks. A single wooden block inside the piano. A block is placed upon this block, then a third upon the second, and so forth, singly, until at least one block falls from the column.
3. Photographing the piano situation.
4. Three dried peas or beans are dropped, one after another, onto the keyboard. Each such seed remaining on the keyboard is attached to the keys nearest to it with a single piece of pressure-sensitive tape.
5. The piano seat is suitably arranged, and the performer seats himself.

Fig. 10 George Brecht *Incidental Music* (1961)
Mauricio Kagel’s compositions *Acustica* (1970) and *Pas de Cinq* (1967) lie on either side of the divide between actions necessarily attached to sounding result and actions essentially independent of result in a composition with specified sounding resources.

*Acustica*, for instance, associates each action clearly with a sounding resource – in this composition, the sounding result is specified to quite a high degree of definition. It is a work composed for twenty-eight handmade or modified instruments. The design for these, and photographs of completed models of them, forms a major part of the instructions which accompany Kagel’s score. Each of the twenty-eight instruments has as its companion between one and six pages of score. Each page of the score refers to one instrument, and contains, as an illustrative diagram, a representation of what to do with the instrument. The sound arising from this activity is the sound prescribed, by the composer, for the work in question. The resultant work, as a performance, is an acoustic catalogue, a collection of more than a hundred sounds running in parallel with a ‘self-contained tape composition made mainly with instruments from [the available catalogue of instruments which form the live body of the work]’⁹. The sequence of the sounds is left to the discretion of the performers, and the balance of live and tape sounds to the discretion of a ‘klangregisseur (sound director)’¹⁰. As Kagel comments in his introductory instructions: ‘Listening can be just as important as ... audible contribution. The player must summon up the politeness to assist another player’s development by pausing himself. Here the mechanics of playing together become evident: making spontaneous decisions on the basis of a reservoir of actions (as opposed to ostensibly free improvisation);

---
⁹ From the instructions which accompany the score, p. 129
¹⁰ ibid., p. 1
determining one's own musical entries so consciously that it is as if they could not have come at any other point\textsuperscript{11}.

\textit{Pas de Cinq} (1967), by contrast, could be described as a work which converts the whole performance space into a single instrument – a collection of ‘lanes’ of minimum length 5m arranged to form a regular pentagon (Fig. 13). The lanes are built up using ‘scaffolding, small platforms and slopes or ramps of differing angles of inclination’\textsuperscript{12}. The lanes are then covered with ‘the most varied kinds of materials, for example sheets of metal, plastic and wood, and runners of jute, cloth and linoleum’\textsuperscript{13} (Fig. 14). No specific details are given beyond this – the diagram below is merely an example given by Kagel in the introduction to his score. Through this space ten pathways are clearly marked; in journeying along these pathways, the five performers

\textsuperscript{11} ibid., p. 130.
\textsuperscript{12} From the instructions which accompany the score, p. 1
\textsuperscript{13} ibid.
tap out prescribed rhythms using 'a walking stick, or perhaps an umbrella.' Figure 12 shows one of the sequence of twenty-five panels which make up the score proper, indicating the journeys to be taken by the five performers and the rhythmic figures which accompany them. Both acoustic frame and performance activity are clearly defined, though the two remain separate.

Fig. 12 Mauricio Kagel Pas de Cinq (1965), score page

Fig. 13 Mauricio Kagel Pas de Cinq (1965), floorplan
3.4 Prescribing social activity

After hearing Stockhausen's *Klavierstück XI* in 1956, Christian Wolff wrote, 'the performer starts playing wherever his eye falls. In this chance is a reflection of the performer's will' (Wolff 1998, p.46). This rejection of the impulsiveness inherent in a performance of *Klavierstück XI* led to the composition, in 1957, of his own *Duo for Pianists II*. Wolff appropriated the sense of mobile form from *Klavierstück XI*, with, in his case, nineteen free-floating elements arrayed over two pages. Again, the nature of the articulation of the element was coloured by the event that precedes it. However, the cueing is not intuitive, but responsive – before each element lies the description of a particular kind of sound (high, low or medium pitch; loud, middling or soft amplitude; muted, pizzicato or *normale*). Depending on the last sound heard, the performer is directed to one particular element and instructed as to its interpretation.

Some years later, when discussing *Duo for Pianists I* (1957), he observed that 'when we started playing together, because we had these variable spaces within which to work, you would respond, almost inevitably, instinctively. And then also consciously, you'd be responding to the other player, and in a way other than normal ensemble playing because you'd hear something and then you could either play immediately..."
Fig. 15 Christian Wolff, *Duo for Pianists II* (1958), one of four score pages

after it, or try to play with it, or wait a little bit before you play. So there’s a whole range of possibilities there, which form a kind of improvisatory situation. I think it must have been from that sort of accidental cueing that I actually got the notion of making it specific’ (ibid., pp. 242 – 244). For the next fourteen years this became the focus of his work – music as a performance activity, and the notation of interactive behaviour. With each new work, he invented more symbols, bringing these features more to the fore, and gradually abandoning other specifications.

First to be abandoned was the pre-composed rhythmic structure. Whereas in the *Duo* pieces and *For Pianist* (1957), segments of time in which events must occur are identified, in the *Duet I for Piano Four Hands* and the *Duet II for Horn and Piano* (both 1960), time instructions occur only as an aspect of cueing – indicating only the length of time between a cue and its response.
Gradually the 'gamuts' as a formal device also faded away. In the Duos every event comprises a selection of notes extracted from a gamut. In the Duets, some 40% of the events are specified only in terms of dynamic and interactive features without reference to a gamut of available pitches. By the time of the Septet (1964), For One, Two or Three People (1964), and in For Five or Ten Players (1962), gamuts play a very small role indeed. Instead, cueing symbols proliferate. From the simple threefold division of the three parameters of pitch, amplitude and timbre found in Duo II, Wolff's musical language expanded to include a plethora of other signs, so that by the time of the composition of For Five or Ten Players in 1962 it is those signs which indicate the modes of interplay between players which predominate.

Interactive Performance Indicators in For Five or Ten Players (1962).

\[\text{Co-ordinate as closely as possible with the next sound that you hear, both in attack and release.}\]

\[\text{Play as soon as possible after the next sound that you hear is finished.}\]

\[\text{Begin playing at any time; continue until the next sound you hear begins.}\]

\[\text{Begin playing as simultaneously as possible with the next sound you hear, and finish playing before that sound is finished.}\]

---

14 Groups of notes, such as those labelled a, e, g and h in the above illustration, from which a pitch might be selected
Play some time after the next sound you hear has begun and continue playing until it is finished; stop simultaneously with it.

Play some time after the next sound you hear has begun and continue playing until some time after it has stopped.

Numbers at the end of lines = co-ordinate as described above but with the number of sounds given: e.g. 4 at the end of a line = stop playing at the beginning of the fourth sound you next hear.

Another notation, such as pp at the point of co-ordination means that you co-ordinate with the next sound you hear of that character (pp).

A co-ordination with a number in a diamond = co-ordinate with the next sound you hear from the player indicated.

Start at any time. Continue playing until the next sound you hear is finished; stop simultaneously with it.

At the same time, Stockhausen's oeuvre was undergoing a similar overhaul. During the period from May 1967 to July 1970, Stockhausen was touring the world with his own ensemble (Aloys Kontarsky, Harald Boje, Johannes Fritsch, Alfred Ahling and Rolf Gelhaar). Whereas these works of Wolff reflect a primary interest in the musical event, the music Stockhausen was composing at the same time developed from an interest in musical form or, more accurately, the laws of musical forming. It is clear in
these and other early works, that form – in the sense of the unique form of a single
work – was seen by him as a particular instance of a more general concept – an
algebra, if you will – of the laws by which music is created.

It is symptomatic of such an approach that there should exist one work which only has
a meta-form – a formula score from which several different performable forms might
be derived, all having features in common, but not necessarily immediately
recognizable as the same work. Such a work is Plus-minus (1963). By way of a score
there are seven pages, each of which displays an array of fifty-three panels. Each
panel represents one musical event. Within each panel, there are instructions as to the
nature of the event which it represents. In a performance of Plus-minus, each part (of
which there can be up to seven) consists of a rendition of one or more of these pages,
using seven pages of supplementary chords and melodic cells to generate the material
content of each ‘event’ as prescribed by its corresponding panel. As in Klavierstucke
XI, there is a series of signals which relate each event to its predecessor and successor
through four musical dimensions: those of density (number of moments), volume,
pitch and duration.

This score is both too general in its outline and too specific in the responses permitted
to provide the final template for a performance. It provides only a general formal
outline and method from which a multiplicity of final performance scores can be
derived, each employing similar materials and processes, but not necessarily to the
extent of being immediately recognizable as Plus-minus.
Contrary to Wolff's investigations, Plus-minus provides minimal opportunity for live interaction in performance. With the exception of occasional cues for simultaneous or overlapping initiation of events, the only sign that individual performance streams are inter-related at all comes either from the coincidence of luck or by the apparent filial relationship which comes from having been created by a similar method from similar, pre-specified, material.

After an animated conversation\(^\text{15}\) with his friend and colleague, Rolf Gelhaar, in 1967 it became clear to Stockhausen that the journey from meta-score to performance need not be so long. Prozession (1967) for tam-tam, viola, electronium and electronics was completed in a matter of weeks specifically for his touring ensemble to take with them and perform in a tour of the Scandinavian countries.

\(15\) On a train journey from Cologne to Basle in May of that year (Kurtz, p. 149).
The core process of this piece is identical to that of *Plus-minus*. Each player performs a sequence of events as specified in their part; there is no score as such. Each event, like its precursor in *Plus-minus*, is related to its predecessor and successor by an array of plus, minus and equivalence signs, which indicate whether the new event has more or less of the fundamental musical qualities of amplitude, density, pitch and duration. In *Plus-minus*, further mechanisms for deriving content also apply; in *Prozession*, by contrast, the choice of content is left to the player’s discretion (though it must come from one of a definite list of previous Stockhausen works). In *Prozession*, the process of manipulation is sufficiently straightforward for it to be realized directly from the written music provided to performance, without the need for an intermediary translation score. Interplay between parts however remains rudimentary. *Prozession* resembles a real-time sketch of the formal procedures which govern *Plus-minus*, with the same weaknesses on an interactive level.

Stockhausen continued to work with the same ensemble for several years, composing for them not only *Prozession* but also *Kurzwellen* (1968), *Pole* (1969 - 1970) and *Expo* (1970; Fig. 13). If one reads these scores and the two associated works *Solo* (1965) and *Spiral* (1968) as a sequence, it becomes clear that the social dimension was becoming increasingly important to him. In the period in which these works were composed, Stockhausen was performing them regularly throughout the world with his ensemble. It is hardly surprising that such an intense period of group activity should make a profound impression on him.

In *Kurzwellen*, the pair of signs $\rightarrow$ and $\leftarrow$ indicate when one player should, before performing an event, call up an ensemble of two or three (or four) players from the
four players involved in the piece to abandon their own part and, as far as they are able, join in with this first player's event, either in parallel, or as a hocket. Provision is also made for repeating passages which lead to the creation of four points in any performance where the players come together in a group climax. Otherwise the parts remain independent, as they had done in Plus-minus and Kurzwellen.

In Spiral, a host of secondary symbols indicate a variety of manners in which the player can manipulate and refer to their own stream of activity or a parallel musical layer (provided by a short-wave radio whose volume and tuning they control). Some of these symbols point to a new region of interactive possibilities. In the next two works, Pole and Expo, these signs — and others closely related to them — are exploited in the genuinely interactive context of ensemble music.

Interactive Performance Indicators in Spiral

OR ornamentation of the previous event, or simultaneous sinewave event.

Per A characteristic figure, chosen from the previous event or simultaneous sinewave event considered as one segment and repeated periodically.

The sequence of scores using plus, minus and equivalence signs ends with Pole and Expo. Most of the new performance symbols from Spiral are incorporated into these scores, along with one or two instructions unique to each piece. The full score of Expo
is presented below. There are no parts; each player reads from a copy of the score.

Fig. 17 Karlheinz Stockhausen *Expo für 3*
One can see from this score how far Stockhausen's concern for music as group activity has come. The ensemble plays to a common pulse; parts imitate, echo and shadow one another and material is exchanged, so that parts come to reflect one another by more than lucky coincidence.

Shortly after the completion of *Expo* in 1970, both Gelhaar and Boje left the ensemble to pursue their own independent interests. Stockhausen was disappointed, and has never performed since in a comparable close-knit group. The open-form compositions with plus/minus notation dried up, and he returned to more formal methods with the composition of *Mantra* (1970), though intuitive texts and graphic forms of notation continue to play a part in his compositional output. Though ostensibly a return to his integral serial roots in the quality of control and relationship to structure of the tiniest detail, much of the actual composing has a natural flow and fluidity. In the three interludes particularly (bars 212-237, 421-435, 638-656), the formal scheme is pretty much abandoned, and a relaxed spontaneity is allowed to flower, where the lessons learned in his time with the ensemble come to the surface and a delight in musical play, and interplay, is made apparent. Stockhausen described the period spent composing *Mantra* as 'the happiest composition time I have ever spent in my life' (MacConie 1990, p. 194).

**Interactive Performance Indicators in Expo**

1. Insert some of what is heard ad lib into one's own event.

2. Insert single segments (Gleider) into the other players' events.
Play/sing echoes of what one hears.

Play/sing 1 of any other players segments.

Insert 1 of any other players segments into one's own event.

Play/sing 1 segment from the event in brackets.

Begin synchronously.

SYN Play/sing all events synchronously.

/ \ Relate to the event from which the line comes.

Play/sing a signal so as to draw the other players' attention to the following event, to which they are to relate.

My own three scores *The Fame Space* (2000; Thesis Vol. II, pp. 90 - 92), *Interfaces* (2001; Thesis Vol. II, pp. 93 – 105)) and *CardWeb* (2003; Thesis Vol. II, pp. 106 - 124; CD 4, track 2) form a trajectory of works reflecting on the social interaction at the heart of music-making. For four years, between 2000 and 2004, I worked with a regular weekly improvising ensemble. One of the joyous features of this ensemble was that it was a group that met to make improvised music – it had no agenda of preparation for forthcoming concerts. As such I could design *The Fame Space* as a
large sculpture which effectively divided up the whole space in which we gathered to make music; there was no need to consider the relative positions of listeners and performers, or indeed to consider the effect upon the performance made by this score in terms of an experienced work at all. Instead the activity triggered by the score was purpose enough. The large cardboard sculpture (Thesis Vol. II, pp. 90 – 92) was all the score there was. It divides the space in which it sits into five parts: the place of agreement, the place of disagreement, the place of non-interactive behaviour, the place of silent listening and the fame space. Performers moved freely between these five spaces modifying their musical behaviours in accordance with these five criteria.

From this simple, and inevitably chaotic (and somewhat tiresome) experiment, I decided that the social interaction at the heart of group music making could best be understood in terms of eight archetypes of musical interaction. Broadly speaking, they conform to two types – archetypes of sympathy, and archetypes of response. Naturally these two sets have points of overlap. The notational paradigm behind both Interfaces and CardWeb begins from the representation of these eight archetypes, as outlined below.

**Interactive Performance Indicators in Interfaces and CardWeb**

- Identification (Parallel Playing).
- Contradiction
- Interruption
The score of *Interfaces* consists of 164 panels arranged in sequence. Each panel contains one of the eight interactive performance indicators shown above, alongside a figure indicating the relative position of the performer's interactive partner and one indicating what I describe in the score as 'three other parameters chosen by the musician so as to be idiomatic to their instrument and their manner of playing' (Thesis Vol. II, p. 93 and end pocket).

Performance of *Interfaces* takes one of two forms: either as a concert work, or as live installation. For a concert work, each performer selects a continuous sequence of between 9 and 36 panels from any part of the score. This sequence acts as the individual musician's part for the performance, indicating both their sequence of archetypes and the players relative to them to whom these archetypes refer. For an installation, the same processes apply but the whole score is employed by each musician, with each choosing a starting point from anywhere in the score and moving
through the score to the end, back to the beginning and on until the initial panel is regained over an approximately three hour period

I was given an opportunity to work on this piece at 32 Hours, a creative laboratory with the experimental chamber group ensemble (July 2001). However, in discussion, I realised that nothing constructive was liable to arise in the time available. I decided therefore to simplify the scheme to achieve a reasonably musical and intelligible result more quickly. The result was CardWeb – a set of seventy cards (Thesis Vol. II pp. 95 – 113). Each of the possible archetypes which could arise within the notational paradigm behind interfaces (that is to say, every possible combination of relative position of interactive partner and interactive performance archetype) exists on some card. The cards are only a kit; there is no rule per se for creating a performed work from the score (though in practice allocating four cards to each performer in an ensemble, then rehearsing sufficiently so that each player has a general sense of the form arising from the various player interactions, has proved effective, and forms the basis of the recorded performance on CD 4, track 2).
It was however the experience of composing *Pronouncements and Ruminations* which showed me the weakness of purely performative scoring as a prescription for a musical event. For the ear is a profoundly sensitive instrument and the body's relation to space is not so finely calibrated. It takes only the slightest deviation of position or pressure to make variations in the sounding result which are instantly discernable to the ear — and the ear has an astonishing capacity to remember such precise matters of pitch and timbre. It is unsurprising that ultimately some other form of representation is required, one which relates the sounding result not only to the actions required for its realisation, but which attempts to calibrate and represent directly the result, as perceived by the ear.
Chapter 4
Prescribing the Event II: The Image of Sound

When a score is designed to prescribe sound it by definition concerns itself not with sound as such, but with the world of imaginable sounds, with prescribable sonic identities. There may be the aspiration to capture the numinous, to celebrate sound in all its richness, but, as writing, composition can only reflect upon a handful of fundamental processes. Sonic identities, when arrayed in time, can remain unchanged, evolve or overlap with and juxtapose against one another.

This representation of sound falls between two poles: top down, or bottom up. That is, a sound may be represented either as a complex of elements which build up to constitute the whole sound at any moment, or as a whole from which the performer must impute their sound producing activities. Four primary forms of notation arise:

1. The representation of the work’s constituent sound as a totality, from which sound-making activities must be imputed

2. The representation of the work as an artefact, built up from constituent sonic elements

3. The representation of the work as a totality comprised from sonic elements which are individually undistinguished

4. The representation of the work as an sounding event between these two paradigms of the total-sound and the sound built up from elements
4.1 Sound as a totality

Ligeti’s *Volumina* (1966), for organ, can be understood as an example of a score which works top-down – a representation of the sound event at any time as a totality, from which the performer must deduce the activities necessary for sound production. As a text, it reflects upon the above processes – evolution, overlap and juxtaposition – and inner lives – either essentially static or of undistinguished movement – of imagined sound. The exploration and demonstration of these processes and sound types and the revelation of the aporia within the imagining of sound underpins the narrative trajectory of the work, despite its apparently traditional momentum of accumulating drama set against moments of repose. As a work for solo performer, it bypasses the complications which arise when performers need to be co-ordinated in the realisation of sounds in time.

Each of the work’s nine sections presents one type of sound and pattern of interplay between sounds. Sounds both at the boundary and internally are either static or mobile, and their movement through time is either one of evolution, or juxtaposition. The choice and sequence of sound type reflects traditional aesthetic concerns: that the work have forward momentum and an overall dramatic trajectory. However, the increasing sophistication of the imagined sound and its depiction through writing remains as an important undertow to this narrative.

The work opens with a loud chromatic chord; something suitably dramatic, in a traditional sense, yet easy to imagine and represent through writing. This chord gradually fades and becomes thinner as a texture as stops are cancelled, then evolves
as black keys are released from bottom to top of the manual. This gentle overlap of static chromatic chords forms the essential matter of the opening section (Figures 1 to 12 in the score, Fig. 18 below).

The succeeding four sections deal, one by one, with an increasing level of sophistication in the form of the essential sonic identity. In order of occurrence these are:

1) An internally static sound, with fluid boundaries (Figs 12 and 13)
2) An internally fluid sound, with static boundaries (Figs 14 – 16, Figs 19 – 23)
3) A sound both whose boundaries and content are fluid (Figs 23, 24)
4) The juxtaposition of individual sound events, both whose boundaries and content are mobile (Fig. 25 in the score, Fig. 19 below)

It is at this point that the notational paradigm breaks down. As the juxtaposed blocks which form section six shorten in duration and increase in frequency, they become discernable not as individual units but as themselves forming a texture of "internal cluster movement" (Fig. 26). This cluster movement, as a sound-type, becomes the

---

16 From the instructions which accompany the score

Fig. 18 Gyorgy Ligeti Volumina (1962) p.2
material of the next section (Figs 26 – 33). A number of blocks of sound, each composed from a slightly different style of internal cluster movement, are juxtaposed. The momentum drains away into a return to sounds reminiscent of the opening section (overlapped, static, chromatic chords). This is the lull before the storm, which is suddenly swept up into a final dramatic gesture (Fig. 36) "dense continual labyrinthine movement played rapidly in irregular rhythm using both hands to cover the entire manual compass. Also clusters ad lib. (with palms, arms elbows)\(^{17}\), an activity which continues for several movement before the final quiescent section, which dies away as the blower is turned off and air gradually drains from a final high cluster played on a single stop (the Cymbel II, or equivalent).

\(^{17}\) From the instructions which accompany the score
4.2 The sound of particular elements

In the series of compositions *Projections 1 – 5* (1950/51), Morton Feldman begins from the same audio-visual basis as Ligeti - the representation of minimal sonic identities through the two symbolic bases of a visual timeline and a symbolic correspondence between height and frequency. However, by contrast, Feldman’s work can be described as essentially bottom-up, working with minimally prescribed sonic ‘blocks’ and creating overall texture by the judicious juxtaposition of said blocks.

Feldman’s system then prescribes the qualities of an individual sound on a primary level: which instrument it is played upon, its approximate pitch (whether it be high, low or in the middle of the instrument’s register), dynamic quality (pianissimo throughout) and timbre (for instance, in *Projection 2* (1951), the trumpet, violin and cello are muted, the trumpet is played into open piano, the violin and cello play variously on a harmonic, pizzicato, arco or sul ponticello and the pianist is instructed
as to how many notes occur in each chord). The same processes of overlap and juxtaposition provide its formal method, though, with such an essentialist paradigm, evolving sound can only be represented by the rearrangement and replacement of its component blocks. Feldman compared this activity to the paintings of Jackson Pollock, ‘Pollock placed his canvas on the ground and painted as he walked around it. I put sheet of graph paper on the wall; each sheet framed the time duration and was, in effect, a visual rhythmic structure. What resembled Pollock was my “all-over” approach to the canvas. Rather than the usual left-to-right passage across the paper, the horizontal squares of the graph paper represented the tempo – with each box equal to a preestablished ictus; and the vertical squares were the instrumentation of the composition’ (Feldman 1985, p. 136).

In succeeding works, such as Intersection 2 (1951) and Intersection 3 (1953) for piano, a more precise framing in time and more details as to numbers of notes in each

![Fig. 21 Morton Feldman Intersection 3 (1953), p. 3](image-url)
chord allows Feldman to further sophisticate this paradigm. *The King of Denmark*, composed in 1964 for solo percussionist, adds to this simple repertoire drum rolls, clusters, grace notes and a distinction between simultaneous sounds and sounds in close temporal proximity giving rise to a further extension of this compositional vocabulary.

Between the idea of the individual sonic entity and its actuality in performance, however, lies another slippage. As a material phenomenon, the actual sound has a continuing existence. How it begins, how it endures, how it resolves, are distinct and variable qualities. It is these qualities which form the material purpose of my own Placing Studies (2003; Thesis Vol. II, pp. 230 - 243; CD 5, tracks 1 - 9). Like Feldman’s Projection series, Placing Studies is composed from single sustained notes played on acoustic instruments, beginning together, ending together and/or overlapping. However, it is not the delicate composition of exquisite tonal blends which forms the spirit of the work, but the manner of articulation of individual and group sounds. Between two sounds beginning precisely together and at a near but not quite instantaneous occurrence lies a world of sensual difference. How a sound begins and ends (its mode of attack and final articulation) are also sensual variables. Placing Studies is composed from a series of studies of these subtle but essential differences. It can still only concern itself with the imagined sound, but endeavours at least to bring to the act of prescribing sounds and realising them in performance a further degree of attentiveness.
4.3 Building up a totality from a mass of undistinguished elements

Like Projection 5, Krystof Penderecki's Threnody for the Victims of Hiroshima (1960) is also built up from individual sonic elements whose duration and location along a time axis is prescribed by the score. The qualities ascribed to these elements vary: details about pitch vary from the specific to the vague, but details as to timbre, dynamics and sound production are always highly specific. However, there is a deliberate anonymity as to the character of each individual line; it is the role of the line as part of a massed sound with its fellows which is the topic of Penderecki’s writing. In this fashion, though working ‘bottom-up’ – from individual sound elements – Penderecki is nonetheless able to create massive blocks of sound reminiscent of the density created by Ligeti in Volumina, despite many performers in the stead of one.

As in Ligeti’s piece, the inner life of these massed sound events is either fundamentally static – composed from clusters of sustained, or gradually moving, pitches – or composed from a cloud of essentially undistinguished internal movement. In each case, several performers working in tandem, cued by a conductor, create the block of sound. The work then exists in two complementary pieces of writing: the first, the conductor’s score, reminiscent of Volumina, and the second a series of individual parts, which serve to unpick and unpack the information contained within the conductor’s score. Each massed sound then is divided among a group of twelve string players. Threnody is scored for 24 violins, 10 violas, 10 cellos and 8 double basses, a reasonably standard distribution for orchestral strings. What is unusual about this piece is that each instrument has its own part, rather than being subsumed into a single line of first or second violins etc. It is this quality which enables Penderecki to
create his dense blocks of sound.

Like Ligeti, Penderecki creates a notational paradigm and then writes a work which, despite its dramatic trajectory, also serves to exemplify the possible sound behaviours that might be represented through the paradigm in what is generally a sequence of increasing sophistication, with occasional relapses for dramatic effect.

The boundaries of each block are defined in one of four ways. The core of a static sound is a cluster chord, a chromatic array of pitches distributed among however many players are responsible for its realisation. The onset and release of a sound can be gradual or sudden – i.e. on cue, a group might begin or end together, or cued individually in succession they might begin or end as a developing texture. The sound might evolve gradually, by means of gradual pitch shift from individual voices within it.

For a sound with internally fluid motion, the same boundary conditions apply. In practice, these noisy sections are of two types: clouds in which each instrument recycles the same few gestures between two conductor cues, and sections which despite being more tightly notated nonetheless sustain the same quality of an unbroken mass of undistinguished sonic elements.

The work, which overall lasts approximately fifteen minutes, is divided into sixty-six 'measures', varying in length from 2½ to 30 seconds. The beginning of each measure is indicated by the conductor; from these cues, the performers know when and how to co-ordinate their entries. The piece begins, much like \textit{Volumina}, with a massed sound
composed from the simplest imaginable elements – fixed pitches, sustained through
time. However, in Penderecki’s case, the fact of the work as a social action by many
is also written in; the simple cluster builds up gradually, by the cued accumulation of
individual lines (mm. 1 – 2). Like Ligeti’s work, the thrust is one of increasing
notational sophistication. Immediately after this first sound is established, the texture
is thickened by the acquisition of internal movement such as only an ensemble can
achieve, with each individual adding vibrato to their note (mm. 2 – 5). After various
dynamic and distribution shifts a texture of more complex internal movement is
gradually introduced, one composed from six different elements recycled endlessly in
sequence (mm. 6 - 9). This is followed by a series of pitch specific clusters,
interpenetrating, from different sub-ensembles (mm. 10 - 17). The next set of clusters
has more sophisticated boundaries – the gradual acquisition of performers, each
adding a new pitch (mm. 18 – 25; Fig. 22). The section which follows is the most
sophisticated of all, employing a highly detailed notation. Each individual sound is
prescribed, despite there remaining a sense of the sound as a massed cloud, a
technique which enables the composer to keep a tight control over the overall sound
(mm. 26 – 31). This marks something of a dramatic as well as grammatological peak.
The remaining sounds (mm. 32 – 69), like those of the opening, are composed from
simple overlaps of sustained, but pitch indistinct sounds played upon the bridge of the
violins and/or the tailpiece of the lower strings, before the work ends dramatically, but
as simply as it began, with a massive $fff$ cluster throughout the ensemble, which takes
thirty seconds to fade to silence (mm. 70)
Fig 22 Krystof Penderecki *Threnody for the victims of Hiroshima* (1960), mm 18 – 24
4.4 Moving freely between the elements and totality

It was on hearing a radio broadcast of Cage's *Concert for Piano and Orchestra* in 1960 that Witold Lutoslawski realised how he might create a music of rich and complex sound masses. Not that he liked the piece; as he said years later 'Composers often do not hear the music that is being played... we are listening to something and at the same time creating something else' (Bodman Rae 1994, p. 75).

What Lutoslawski heard in Cage's piece was a way of working that would enable him to create music of great rhythmic suppleness. By providing individual parts with a degree of rhythmic independence he could create music which has a 'far more complex structure than any polyrhythmic structure to be found in traditional music. There are many... possibilities ...[which]... spring from the composer's assumption that each of the performers will, within a specified time unit, play as though he were on his own, without worrying whether he is in time with the others. In this way the rhythmic structure acquires a distinctive suppleness not attainable otherwise' (ibid. p. 77).

This quality of a free movement between thick and supple textures generated from a number of rhythmically independent lines and moments of tight rhythmic co-ordination, the whole being held together by a variety of cueing devices, is a recognisable feature of Lutoslawski's style from this point (though as the decades progress its importance to the composer did begin to wane) and of fundamental importance in the second and third symphonies.
Lutoslawski’s primary building block in both of these symphonies was similar to Penderecki’s—a massed sound event built up from independent instrumental lines. However, Lutoslawski’s original insight was that (1) each line might bear its own independent notational string and (2) the whole might be held together by a system of cueing signs. Bringing these two techniques together made possible the development of a musical language in which the essentially stochastic, cloud-like, forms of the massed sound event became susceptible to a kind of control, or at least a range of articulating strategies. These articulating strategies depended directly on the modes of notation which Lutoslawski devised, which in their turn depend upon his notational methodology in which cueing system meets notational string. Both devices subdivide into two kinds. Notational strings either end with a repeating loop segment, or not. Cues are for the attention of the whole orchestra, or only part of it—a smaller sub-ensemble.

In consequence of this paradigm, Lutoslawski’s blocks of sound generally begin with a clear articulation but end in one of three ways. Bearing in mind each notational string moves on independently, the players in an ensemble block of sound, unless instructed to end on cue, cutting off their string regardless, end diffusely. This is one kind of ending. A precisely cued finish is another. The third occurs when individual lines close with a repeating loop fragment, and continue the loop until cued. Unless the cue is of the second type mentioned above, which takes effect immediately, each part would continue until the end of the segment. The result is similar to the diffuse ending mentioned above, but more so. The cumulative effect of cueing independent repeating loops in a massed sound to end is a potential delay of several seconds between the first player’s ceasing to sound and the last.
With these as his modes of attack and release, Lutoslawski has at his fingertips a vocabulary of sound mass types and processes with which he is able to practice the four modes of progression outlined in the opening of this chapter: unchanging or evolving blocks of sound juxtaposed with or overlapping against one another. From these premises, Lutoslawski constructs the architecture of Symphony No. 2 (1967). Like Volumina and Threnody, it can be read as a work whose theme is the exploration of a notational methodology and whose narrative thrust is the progressive demonstration of the potential, through increasing sophistication, of that methodology.

The first movement of the second symphony—‘Hésitant’—has four sections. Overall, it consists of some twenty-five individual massed sound events; mostly they simply start on cue, then fade away. Some juxta pose, some overlap. The opening three minutes (to cue mark six in the conductor’s score) present a taste of almost all that is possible—sound blocks juxta posed, fizzling out, overlapped, fading away and ending sharply on cue. From this point to the end of the symphony however, methods are introduced gradually in increasing order of sophistication. What follows in the next ten minutes is a series of fifteen blocks of sound, relying on only the general cue and the two modes of dissolving sound block, each beginning on cue, each employing one small section of the orchestra—perhaps clarinets, piano and percussion (cue mark 15-18) perhaps oboes and cor anglais (cue marks 8–9 (Fig. 23), 13–14). Each begins on cue and melts away at the end, either as individual lines come to their conclusion, or after a closing cue as repeating figures are stated for the last time.
After these nine blocks have been stated, the third type of conclusion – that of a
repeated figure cut off abruptly on cue – makes its reappearance (cue mark 33). This
leads to a sequence of eleven blocks sharply abutting against one another. The blocks
become shorter as the energy intensifies (cue mark 33 – 45). The momentum is cut off
suddenly with a single ensemble chord for the whole orchestra. Not until this final
section does the composer allow his blocks to overlap – eleven blocks follow, again
growing shorter from one to the next. Each block ends with a repeating loop, and
continues over the beginning of the succeeding block, fading away as individual
instrumentalists come to the end of the final statement of his or her repeating figure.

The second movement – ‘Direct’ – begins at a higher level of conceptual and
notational sophistication, employing for the first time since the opening salvo both
cueing devices in order to lay one sound block against another. Most of the blocks of sound end with a family of looping figures. But instead of simply ending on cue, these blocks cease looping one figure and instantly begin another related figure, a development of its predecessor, allowing for a continuously transforming texture. The mass – juxtaposed with bursts of sound – becomes denser until a dramatic peak is reached at cue mark 135, where the notational paradigm returns to the traditional pitch-time lattice of the stave and continues in this fashion rhythmically and energetically to the end of the symphony.

Whereas the narrative thrust of the second symphony gives it the form of an enquiry, the third symphony is more of a completed statement, the celebration of a self-contained musical language. As a study in notational methodology, Symphony No. 3 (1983) picks up where the second leaves off, with the juxtaposition of rhythmically supple blocks against rhythmically co-ordinated passages for large ensemble. Its first three minutes juxtapose all the compositional effects which occur in the second symphony – the rhythmically precise, the supple sound mass, the juxtaposition of blocks and overlap of blocks of sound performed by separate sections of the orchestra.

One could argue that the principal (musical) theme (Fig. 24) presents in essence the key features of a pitch-time lattice system of notation – clear rhythmic and pitch articulation. What follows in the fifteen-minute single-movement work can be seen as a sequence of movements away from and towards this precision, articulated at intervals by the recurrence of this simple idea, statements of which both open and close the symphony. In addition to the various rhythmically indistinct features which this work inherits from its predecessor, devices of 'micro-polyphony' also occur,
sound blocks which despite precise notation come across to the listener as as blurry and indistinct as more freely notated events, enabling subtle and quite magical shifts of mood and texture.

My own composition *Mushrooms* (2002; Thesis Vol. II, pp. 125 - 146) works in a similar fashion, alternating between massed sound events, created from multiple internal movements, and integrated events, composed on the pitch-time lattice of the traditional Western stave. There is no master score as such. Instead each of the three parts (chorus, chorus back row, conductor) has almost the same part, containing all
the parts as written out in five-line stave, but different instructions for the four games which interpolate between the traditional written out SATB partsongs. The conductor’s part contains cueing instructions for each of the massed sound event games – it is how the individual singers are instructed to respond to their various cues which gives each massed sound event its shape. Like the cueing in Lutoslawski’s Third Symphony this methodology allows me to build a work from the juxtaposition and overlap of massed sound event and articulated partsong.

This freedom of movement for the composer between massed sound events and evolving sound continua on the one hand, and articulated sonic moments on the other reflects not only an expanded capacity to conceptualise sound but also allows the artist to reflect upon the difference between the continuity of our sonic experience on the one hand and the articulacy of notation on the other. For the American composer Earle Brown (Brown 1986, p. 191 – 200), this reflects not only an increase of the sophistication of the sonic palette, but also the introduction of mobility into the relationship between the score as artefact and the event of the performance. As such, it reflects also upon the slippery relationship between the time of the event and the articulated fixity of the score.

But this mobility has two faces: the first is a kind of ‘mutability [...] the mobility of the sound elements within the work’ (ibid, p. 192) which enhances the ‘complexity and subtlety of the desired sound results’ (ibid. p. 199) which one can associate with works such as those analysed above; the second however could be conceived of as a ‘ “process” mobility [...] the work as an endlessly transforming and generating “organism,” ’ (ibid p. 199). In this second case, one is no longer dealing with an
enhanced control over the sonic mass, but instead – as explored in the next chapter – a re-imagining of the relationship between the score, as guardian of the work’s identity and the event of performance which marks its realisation.
Chapter 5
Prescribing the Event III: Models of Time

5.1 The vulgar concept of time

The ‘vulgar concept of time’ is, according to Derrida\(^\text{18}\), a phrase coined by Martin Heidegger to describe the conception of time as a ‘succession of nows’ (Heidegger 1982, p. 228) a line, if you will, along which the events of my life, and the world’s history, are arrayed. Not that this conception is a false one; Heidegger identifies this concept and describes it as such in order to point out that this is not the primary human experience of time, but something derived – a concept created after our primary experience.

Heidegger proffers a differentiation between two terms – ‘Zeitlichkeit’ and ‘Temporalität’ – as a basis for a more experientially based understanding of time. ‘Zeitlichkeit’ translates literally to something like ‘timeliness’: ‘The essence of the future lies in coming-towards-oneself; that of the past lies in going-back-to; and that of the present in staying-with, dwelling-with, that is being-with. These characters of the toward, back-to, with reveal the basic constitution of Zeitlichkeit’ (ibid., pp. 266–267). ‘Temporal science’ (in the sense of Temporalität) (ibid. p. 324) is the modes of understanding (such as a priori, beforehand and absence) that derive from this primary level of experience. The ‘vulgar concept of time’ represents a third level of understanding which follows after these two. ‘Time in the sense commonly understood... is indeed only one derivative, even if legitimate, of the original time.’ (ibid., p. 325)

\(^{18}\) Derrida, p.72. as translated by Spivak. In Heidegger 1982, as translated by Hofstader, pp. 228 – 302, the same term appears to be translated into English as the ‘common’ concept of time.
With these tools to hand, it is possible to revisit the dialogue between the score and the musical event in terms of their contrasted relationships to time and temporality. Two other terms, ‘runoff’ and ‘protention’, are borrowed from Churchill’s translation Edmund Husserl’s *Phenomenology of Internal Time-Consciousness* (Husserl 1964).

### 5.2 Our primary experience of time

One could imagine a form of mentation in which the moment a sensation vanishes, it is as if it never happened. A purely present existence, in other words. This imaginary simpleton throws into relief some of the fundamental structures of our own being-in-the-world.

In addition to this present moment of worldly time, there is also available to my consciousness a field of mental representations; there is the purely imaginary realm of future projections, and the realm of memory. Husserl classifies the world of memory (Husserl 1964) into two distinctive parts: retentions and recollections.

Recollection is the aspect of memory with which one is normally familiar – the capacity to summon up past experience at will, and represent it in the now, recognizing the primary distinction that in the recollection – ideally – everything is as it was save that the self is now absent, because it is instead present to itself in the now, recalling the past.

Retention, however, is that aspect of memory which connects the self, as present in the now, directly to the stream of time. William James employs the phrase ‘specious
present' to describe our shared experience of 'these lingerings of old objects, these incomings of new which ... give that continuity to consciousness without which it could not be called a stream. [...] In short, the practically cognized present is no knife-edge, but a saddle-back with a certain breadth of its own on which we sit perched, and from which we look in two directions into time' (James 1910, p. 609). This conceit expresses well the mental sensation which arises from the process of retention, the process by which the present instant is connected directly in the mind to a previous almost-identical instant, in which the self is absent, with a join so smooth it is imperceptible. And so on, a continuity shelving away into the past, and the recollecting memory.

5.3 Temporality, and the properties of a moment

Temporality (Zeitlichkeit) can be defined as the underlying structures of human understanding which make this primary experience of time possible.

Like the primary experience of time, temporality can only arise in the self's experience of itself in the present moment. In that present moment, the self can recollect itself in the past, and imagine itself in the future. It is this capacity – for the imaginative reconstruction of the whole experience of being-in-the-world as past, or imaginative projection of being-in-the-world to come – which lies close to the heart of temporality. In other words, the self is capable of imagining the full roundedness of its own experience of being-in-the-world, whilst itself standing outside of that selfsame experience, observing its own imaginative act. It is this capacity which makes possible the imaginative recreation which occurs in anticipation and recollection. The
self projects an experience of being-in-the-world which is not the present moment, yet which is of a continuity with the being-in-the-world of the present moment.

Heidegger (1982, p.267) describes as the three ecstases of temporality the capacity of being-in-the-world to imagine the total experience of itself – in recollection, in imaginary re-presentation of the now, and in protention of the future – while itself standing outside this total reconstruction and observing it. This facility – temporality (Zeitlichkeit) – is the foundation of the fundamental concepts of temporality (Temporalität), which in turn are the foundation of the vulgar concept of time.

The moment is not an objective thing, but an act of consciousness, the juncture between self and world; it is not a thing, nor an abstraction, but a mode of understanding.

The moment imaginatively recreated or recollected has four given properties – spannedness, significance, datability and publicness (ibid., p. 261 ff.). A moment under consideration – whether by recollection, re-presentation, or imagination – has temporal content. It comes not as an instant, therefore, but as a period; it has spannedness. It is not brought to mind as a thing-in-itself, but by its content, which literally is a content of value – it has meaning to the mind which is attending to it and can only be recalled on account of, and by means of, this content. Called to mind, that is, by way of its significance to the mind which brings it to attention. The same moment is accessible to other beings, though they might find in it their own significance – it is public, and has a real temporal location – it is datable.
5.4 Succession

There is no obvious progression from the experience of succession to the perception of it. It is perfectly possible to imagine an experience of succession in which the new element replaces the old completely, erasing its predecessor. However, if recollection comes into play, then the perception of succession becomes unavoidable.

Retention weaves the now moment into a thread connecting it into the continuous runoff of the previous. A past moment, brought into the light of now's consciousness, arrives with strings attached, as it were – it exists as the recollection of a retention, along with an attendant continuous runoff back into a previous past, and forward into the more recent past which follows after it.

Succession then is a synthetic understanding derived from these primary aspects of being-in-the-world of retention, recollection and now-consciousness.

5.5 On time, notation, and the musical work

All this is by way of a prolegomenon to the analyses which follow. For the listener does not experience the musical work as a series of nows, but as, at any moment, a single now, *this* now, with various retentions falling away into memory and a new now already rushing in. For many musical experiences, this differentiation might seem to be of little significance, but in some work – in much of the later compositions of Morton Feldman for instance – it is a matter at the heart of the work’s value and meaning.
Eric Satie’s *Vexations* (1893), for instance, appears to be composed entirely of repetitions. The same page of manuscript, repeated 840 times. Even John Cage, when he first came across it, commented ‘One could not endure a performance of *Vexations*, [...] why give it a thought?’¹⁹ But the listener, being embedded in time, cannot experience temporal repetition as repetition. Because the only temporal object present is the one present in the now-moment, repetition is never present. Even if one hears a tone which one has heard previously, the tone being heard in the present moment retains the unique quality of a present moment. What happens is that the now-moment being heard is reinforced by memory. It brings to mind the line by Rilke about the mind gaining reassurance from the familiar ‘in the deciphered world’²⁰ and that this familiarity comes about by repetition; that is, from experiencing in the present moment a temporal object that one already holds in memory. In the case of *Vexations*, with each repeated playing of the material the listener does not hear the same thing again because he is not hearing the event the previous time. Instead, he hears the present, as always the only existing moment, with a unique layer of reverberation in the memory. It is the ever-changing state of the listener’s perception which forms the core experience of the work.

On the one hand there is the event, never more than this moment now with its unique layer of reverberation tailing off into memory. On the other is the score, a visual presentation in which past, present and future lie alongside one another. A score as a temporal map is an attempt by the composer despite this aporia to represent whatever

²⁰ Rilke, pp. 19 - 20: Oh who can we turn to/in this need? /Not angels/not people/and the cunning animals realise at once/that we aren’t especially/at home/in the deciphered world. /What’s left? /Maybe some tree/on a hillside/one that you’d seen every day/and the perverse loyalty/of some habit/that pleased us/and then moved in for good.
features of the pre-imagined event he or she finds significant. The temporal sequence of them need not be one of them. Perhaps only the events themselves might be significant, or the local relationships between them.

Employing as conceptual axes the notion of the event as singular, or successive, and the material of the work as either isolated moments or continua, one arrives at a fourfold primary classification of temporal maps:

(1) The event as a succession of nows — a linear script, chaining together a sequence of ‘moments’,
(2) The event as a family of nows locked in a web of relationships and potential relationships,
(3) The event as a continuous, possibly evolving presence, and
(4) The event as a web of continuities, now meeting, now moving independently.

5.6 A succession of events - the modular notational model

The module can be defined as a distinct part of the page used to indicate a block of musical material. The musical work is then built up from the web, or succession, of modules as prescribed in the score. The sequence of modules can be divided into four further sub-categories.

Firstly, the module itself can be considered to belong to one of two categories — the sub-group module, or the whole ensemble module. In the score arranged as a field of whole-group modules, the mode of transformation may also be of two kinds — either a
transition from module to module ensemble, or a transition from module to module in a particulate manner, with individual performers or sub-groups transferring from one module to the next independently.

In Philip Glass's *Music in Fifths* (1969), an ensemble comprising keyboards, flutes, etc. plays one of two melodic lines, identical save for being a fifth apart, throughout the work. Each of the two available parts comprises a sequence of modules. Each module is to be repeated *ad lib.* until, at a sign from the director of the ensemble - generally the composer Philip Glass himself - they move on to the next module. In this manner the group begin together, and continue to play identical or congruent melodic lines for the duration of the work. This is an example of music composed from group modules, transiting ensemble.

The original version of John Adams' *Shaker Loops* (1978) can be considered for the main part to be a work composed from group modules transforming in a particulate
manner. In the first and final movements of this four-movement work, the page of the score is divided into three distinct systems, one at the top, one in the middle and one at the bottom of the page. Each system runs the entire width of the page. Within the system are seven lines of music running across the page, one for each of the seven performing instrumentalists. At the left-hand end is a static module, a moment in repose—a group of musicians repeating their material. Running across the page from this point, each musician gets to change their own part of the material (in an order of succession prescribed by the composer) until a new static module is attained, at which point the performer’s attention is directed to the next system, which begins with that static module at its left hand end, and the process begins again.

![Fig. 26 John Adams Shaker Loops (1978; original septet version), fifth system](image)

If a musical work were to be composed from particulate modules, but with all parts of the group transiting together, the effect would be of a total-group-sound, transforming as one. Consequently, a composition composed from particulate modules transiting together becomes, by default, another example of a group-sound, transforming as one.
The score for Terry Riley's *In C* (1964) is a page of solo modules arranged in a specific sequence. Players begin as one, playing the first module. They then move from module to module in their own time. This score is an example of the fourth fundamental type of modular score, a particulate arrangement of modules, transiting in a particulate manner.

5.7 The web of events – ‘process mobility’

In its most direct form, the visual prescription for the mobile performance work consists only of material modules scattered freely about the page, with the accompanying instruction that the sequence of events is free. Morton Feldman’s *Intermission 6* (1953) is such a score (Thesis Vol. II, pp. 202 – 206). A selection of thirteen isolated notes and chords and two grace notes is scattered across the page. The instructions read ‘Composition begins with any sound and proceeds to any other. With a minimum of attack, hold each sound until barely audible.’
The same process mobility can occur in a work whose individual modules are more sophisticated. A greater internal sophistication of the module can occur both vertically, in terms of its sonic texture, and horizontally, in the manner in which it might develop through the brief time of its manifestation. Earle Brown’s *Available Forms* (1961), for instance, extends the straightforward mobile principle that governs *Intermission 6* to a full orchestra. Each individual module now has its selected sound sources (individual orchestral players), who themselves have specific instructions as to material and manner of playing, and a specified developmental progression of these materials through the duration of the module.

Feldman neither encourages nor expressly forbids the overlap of individual sounds in a realisation of his work. In *Available Forms*, this possibility of overlap is made explicit. Complementary pairs of modules, which make use of entirely separate groups of instruments, are occasionally designed so that the conductor may choose to overlap one upon the other (see fig 28).

Between this sequential freedom and the linear script lies the possibility of events locked together, not simply in a chain but in a web of relationships. Each module for instance might be specified not only in terms of its pitch material but also in terms of its relationship to its neighbours. Both Stockhausen’s *Klavierstück XI* (1956) and Wolff’s *Duo for Pianists II* (1958) present such a web of interconnected modules. In *Klavierstück XI* for instance, the final instruction in each module defines the three parameters of speed, dynamics and tone for the succeeding module, creating an event in which the same elements recur, but with shifting colours, as it were. *Duo for Pianists II* on the other hand appends initial information to each module, making
specific the qualities of the event to which it comes as a response (for more details, see chapter 3, pp. 37–38). A short loud sound, for instance, prescribes one module, whereas a soft sound in the middle range prescribes another.
Though in performance both these scores produce events which have the form of a web – an interconnected system of pathways – this is not the literal form of the score, how it looks on paper; the score presents only a diagram of options. In Formant 3 of Boulez’ Piano Sonata No. 3 and Roman Haubenstock-Ramati’s Liaisons the identity of the work as a web is made explicit in the visual layout of the score.

Boulez’s composition comprises four oversize pages on which are laid out 73 fragments of musical material, written out in traditional five-line notation. Each module culminates in a ‘junction’ of sorts, a group of between one and five directional arrows, indicating permitted succeeding modules. In this way the web of the performed work arises neither as the result of where the eye falls, nor as a response to heard sounds. It arises instead from a judicious balance of spontaneous choice and restricted options.

Fig. 29 Pierre Boulez Sonata No. 3 (1958), Formant 3: Constellation-Miroir, excerpt from page e
Liaisons, composed for one or two percussionists, covers the score with musical material in such a way that a number of different pathways may be read through it. In the duet option this leads to the novel effect of the same material occurring at different times – approached as it were from a different angle by each performer.

Fig. 30 Roman Haubenstock-Ramati Liaisons (1961)

5.8 A successive continuum – the linear script (and its variations)

The music of George Crumb is one of melodic lines which converge, diverge and loop around one another. To this end he has developed a distinctive visual style. In the Threnody from Black Angels (1970), for instance, as the four instrumentalists converge to the same melodic material, the four written lines also merge into one. As they diverge, so does the score. Often figures which repeat in Crumb’s music appear as circular staves, so that the end quite literally links up to the beginning.
Fig. 31 George Crumb *Black Angels* (1970), *Threnody II*

But what is perhaps most powerful about Crumb’s notational methodology is what occurs when lines diverge so far that their rhythmic entrainment is no longer absolute. Instead, lines which might begin together drift apart and continue independently until they reach the point of reconnection.
In *Songs, Drones and Refrains of Death* (1968), two musical lines begin simultaneously but then diverge, with each line entering its own circular figure and processing independently through it until they reach a common cue point at which they rejoin one another and proceed together to the third and final section, in which the two lines run concurrently to the end.

**Dream Sequence**
*(Images II)*

for Violin, Cello, Piano, and Percussion

and affixation "Glass Harmonica"

GEORGE CRUMB

---

Fig. 32 George Crumb *Dream Sequence* (1976), one of two score pages
Dream Sequence (1976) takes this methodological possibility to an extreme point. The score consists of a single large double-page spread. The ensemble (violin, cello, piano, percussion, off-stage glass harmonica) is divided into four sub-groups (piano solo, violin and cello, percussion and glass harmonica). The two glass harmonica players play continuously throughout the piece. Each of the remaining sub-groups has its own circle and its own points of entry and exit. The music begins with a common entry point for piano and percussion. These two groups then break off independently into circular processes. The cueing entry point for the two string instruments is located at a specific moment in the percussion circle. The strings then travel around their own circle three times, each time visiting different parts of the circle via one of the six routes specified by the composer. The remaining instrumentalists process continuously through their own circles until the string players complete their three circulations, at which point all three groups move to a common exit point attachment which leads to the end of the piece. The resultant work, in performance, begins and ends with clear vertical integration, but with a rhythmically flexible and mobile continuum suspended between them.

5.9 A web of continua

Dream Sequence marks the limit, the point beyond which the work is not dealing with linear sequence at all, but with another kind of web – not this time a web of interconnected moments but instead a web of lines, of independent, but interlinked, continua.
An unsurprisingly frequent feature of works composed in a modular fashion is the tendency to a fragmentary or epigrammatic voice in performance. This arises naturally from the mode of scoring. Haubenstock-Ramati’s *Interpolation* (1959) for 1, 2 or 3 flutes and Lutoslawski’s *String Quartet No. I* (1965), though both notational explorations of the score as a web, build that web up not from fragmentary modules, but from musical continua – independent melodic lines which interpenetrate, leading in performance to works with a strong sense of continuous melodic flow and development.

![Diagram of Interpolation](image)

Fig. 33 Roman Haubenstock-Ramati *Interpolation* (1959) for 1,2 or 3 flutes

In the case of *Interpolation*, the overall web which connects the twenty-six modules on the page is a series of predetermined lines that permit the shift from a specific part of one module into an equally specific part of another. The consequence of this system is a multiplicity of possible melodic lines, all employing the same twenty-six
modules as the source of material. The performer reads the score from left to right, or right to left, leading to the creation of a phrase whose length is fixed to within quite tight boundaries. The performed work then consists of a chain or, if more than one flautist is performing, a web of these long, identifiable related, phrases.

Lutoslawski’s first string quartet began as a work with no master score at all. Instead, each of the four players was presented with their own independent part. Throughout the part, cue points are marked where two, three or four players should meet, with individual players perhaps waiting for their colleagues before moving on again, independently from these common points. As the composer commented in a letter to Walter Levin, leader of the La Salle Quartet which commissioned and premiered the quartet, ‘you may ask me why I attach such great importance to the non-existence of a score of my piece. The answer is quite simple: if I did write a normal score, superimposing the parts mechanically, it would be false, misleading, and it would represent a different work. This would suggest e.g. that the notes placed on the same vertical line should be always played at the same moment, which is the contrary to my intention. Further it would prevent each performer from being free enough in his rubatos, ritenutos, accelerandos, pauses and above all in his own tempos. That would deprive the piece of its “mobile” character which is one of its most important features.'  

However, in response to Levin’s continued requests, Lutoslawski did produce a ‘score of sorts’ in which chunks of melodic material for each instrument were presented alongside one another but in a manner such that it remains ‘impossible to read the four parts [as shown in the score] vertically.’

---

21 From the instructions which accompany the score
22 ibid.

97
My own string quartet *Without Poetic Devices* (2005) (Thesis Vol. II pp. 257 - 275) is organised as a web of continua, individual parts now meeting, now running independently. As with Lutoslawski’s original version of his first string quartet, there is no score, only a set of four parts, with cueing marks written into each part. Of course there did exist, at least in my imagination, an overall map of how these four parts should fit together, from which these parts were derived. The parts however present what is written, transcribed from that pre-existing imagined musical event.
In *Notation – Material and Form* (1965), the Viennese composer Roman Haubenstock-Ramati classifies musical compositions onto a field defined by two independent axes: a vertical dynamically-closed\(\leftrightarrow\)open axis and a horizontal stable\(\leftrightarrow\)variable one. Under this classification, *Interpolations* would appear at the top left hand corner of the field, as a work which is dynamically closed (dependent upon a closed set of musical material) and stable (notationally exact), whilst *Liaisons*, on account of possessing some panels whose notation is deliberately more open to player interpretation, still at the top (dynamically closed), but now moving from the far left towards the centre (towards ‘variable’).

*Without Poetic Devices* can be seen as an example of a work which is stable yet open. Though notationally exact, nothing repeats; material continuously engenders new material. I composed it as if imagining my dream improvisation ensemble as a fecund, flexible and sensitive string quartet and then notating the sounds that I imagined. The cue was Baudelaire’s plea for a musical prose, ‘free of poetic devices’ – a music as supple and constantly new as speech is.

Perhaps what is most enterprising about Haubenstock-Ramati’s classificatory field is not this vertical axis, which seeks only to classify fundamental musical forms, but its accompanying horizontal. In creating an axis of measurement between notationally exact and notationally inexact, Haubenstock-Ramati makes available a broader understanding of the composed musical work.

In the two compositions *Catch 1* for harpsichord and *Catch 2* for two pianos (both 1968), notational inexactitude is at a near extreme, while form retains a novel sense of
closure. Despite some clear suggestions as to the interpretation of signs in the instructions to each piece, it would still be possible to create a performance of the work which, whilst remaining faithful to the score, would not be recognizable on sonic grounds.

In performance, each piece is built up from a number of ‘transits’ — readings from the series of notionally prescriptive strips of visual information which comprise the respective scores. However, the design of the strips is such that — despite great openness as to the interpretation of individual signs — the traditional high serial patterns of series, inverse, retrograde, and retrograde inverse should remain audible in any rendition of the work.

It is this possibility — the presence of patterns of series, inverse, retrograde and inverse retrograde in a world of keyboard sounds which ranges from chromatic acciacaturas to ‘continuous sounds’ using ‘palms and edges of the hands, fists and forearms’ — which, to me, define the distinctive qualities of the two works as compositions, despite their sonic openness.

By giving himself the freedom to compose at will from any point in his conceptual space, Haubenstock-Ramati opens up the meaning of a composer’s prescriptive activity. For as the sense of the work moves along this axis, it drifts away from traditional notions of transmission — of the score as representation of the composer’s sonic idea and of performance as the largely transparent realisation of that idea — into a creative world in which score and performance still belong together; but where they

---

23 From the instructions which accompany the score
are not a pair in which one party depends upon the other so much as a pair in discourse, in which each affects and infects the other.

Fig. 35 Roman Haubenstock-Ramati *Catch 2* (1968): strip 3A and its variants 4a, 7B and 8b
Chapter 6
Approaching Chaos

One could say that prescriptive scoring, despite apparent novelties, remains attached to the transmission model of the relationship between composer, score, performers and work. However, there is nothing logically necessary about transmission as the model for the relationship between the four parties. Score-making is an act of writing, just as interpretation is an act of reading, realisation is an event of performance, and the identity of a work is a culturally specific concept not necessarily inherent to music. It is possible to find other reasons for creating scores:

1) As an act of subversion — a prescription which cannot contain its own result;
2) As the creation of a site for interpretive activity,
3) As a celebration of the fetish of writing
4) Or as a model of a new form of communication between composer and performers.

The score can fulfil many functions beyond that of transmission or guardian of the work’s identity.

6.1 Subversion

The Darmstadt International Summer School in the 1950’s was the home of a hitherto unknown level of control and complexity from musical notation. However, after John Cage’s visit in 1958, when Music of Changes was performed by David Tudor while Cage gave a lecture on composition as process II: indeterminacy — a lecture which
was ‘indeterminate as to its performance’ (Cage 1980, p. 35) – many composers adopted at least some level of randomness or flexibility in content or structure.

Both Boulez’ *Third Piano Sonata* and Stockhausen’s *Klavierstücke XI* combine very precise details with a formal mobility. One can presume in the case of Stockhausen and Boulez that they believed in the consistency – and presumably the audibility – of their musical logic, even if its discernment presents a challenge to the listener. Yet, in Mauricio Kagel’s *Transicion II*, composed for the 1959 summer school, it is hard to believe that the composer intended anything so comprehensible.

*Transicion II* seems on the surface to be a typical Darmstadt product – a percussionist and a pianist, both playing on the same piano, one on the keys and the other on the strings and case, engage with tasks which are extremely difficult, complex and detailed. Like several works at that time, the score presents a meeting of control and flexibility. However, in the case of Kagel’s piece, the controlled and random features of the score seem to cancel one another out.

In its published version (Universal Edition 1963), the 35-page score is accompanied by 7 pages of mobiles (of which more later) and 16 pages of instructions in German, English and French. Each page is of one of three types: ‘A’ type pages generally comprise two parallel lines of stave, one for percussionist, one for pianist; ‘B’ type pages include mobile type openings for either pianist or percussionist; ‘C’ type pages generally contain what appears to be a single line of stave for each instrument which, on close inspection, turns out to be a system of five lines referring not to the traditional stave but to a cluster of five adjacent strings (or keys) on the piano (the
same cluster of five pitches in the case of both pianist and percussionist), allowing for an intensely focused concentration on dynamic and timbral nuances within the given cluster.

![Diagram of Transicion II (1959), page 4a](image)

Fig. 36 Mauricio Kagel Transicion II (1959), page 4a

Parts of the music are extremely tightly controlled while, often at the very same time, other parts present passages of arbitrarily uncontrolled randomness. Long passages (pp. 9 – 19, pp. 22 – 23, p. 31) combine details of frightening complexity alongside extremely ambitious progressive tempo shifts indicated on a separate stave; other pages display little more than a random scattering of dots with general indications as to pitch and temporal location (such as pages 4b and 7b, for solo percussionist). Page 4a (Fig. 36) for solo piano combines the two, with a primary text of extreme precision and complexity (the two lines of stave notation running across the bottom of the page)
into which are interjected bursts of chaotic noise whose identity lies quite deliberately outside the control of the composer. The two boxes above the stave lines indicate a selection of pitch clusters along with the part of the hand required to perform them and, in the case of the box on the left hand side, the height from which the hand must drop onto the keyboard (12 cm), while the mobile diagram at the top of the page indicates a selection of clusters laid gradually (starting at the elbow or wrist as prescribed by the score, finishing with the whole forearm). The four rows at the left of the disc divide the piano's range into four regions; however, the mobile is just that - printed on a separate page the disc might be placed in its position at any angle. The instructions for page 7a - a section of highly complex music in a variety of time signatures, employing numerous acciacaturas and complex cross-rhythms - demand that 'the given time values should be strictly adhered to'\textsuperscript{24} while at the same time allowing that 'the tempo can be varied considerably from one measure to the next'\textsuperscript{25} (Fig. 37; the blank numbered spaces beneath the stave lines indicate another of Kagel's mobile types - what he describes as 'translation ledges' - a shorter strip of musical information which might be placed at the player's discretion at any point between the two guidelines at the left and right sides of the page). It is as if the composer, whilst indulging in a serial level of complexity, is intent on erasing any possible formal concomitants of such a method.

The initial instructions as to the formal arrangement of the 32 loose-leaved pages seem to be rational, if complex. Kagel breaks the score down into twenty-one independent structures, comprising between one and six of the thirty-two initial pages. Each page belongs to one, and only one, structure. Consequently some pages - such

\textsuperscript{24} From the instructions which accompany the score, p. 6
\textsuperscript{25} ibid.
as pages 9 – 14, which make up the six pages of structure A3 – belong together as a fixed sequence. These structures can be collated in numerous ways, combining compulsory sequence or its retrograde with random interjections. There is a perverse kind of logic here – it is as if the formal opportunities provided by the composer serve the same purpose on the macro level as does the meeting of vagueness and detail in the individual pages: to retain an absurd level of complexity and fearsome difficulty for the performers while at the same time dissolving any possibility of a formal logic which might merit such fetishism being apparent to the audience.

Like a cargo cultist Kagel undertakes a level of complexity symptomatic of the environment in which he finds himself. Transicion II, however, seems to lack the integral logic, the underlying rationale, which justified such work in the hands of his confrères. What one is left with is ‘an absurd spectacle in which two musicians, operating on a piano, undertake meticulous actions in the service of musical aims which remain obscure’ (Griffiths 1995, p. 139). Transicion II is a work which, while
making a fetish of control and detail, ends up in a performance whose arbitrariness borders on parody.

6.2 Non-intention

The possibility of non-intention was always latent in the music of John Cage. For his *Concerto for Prepared Piano and Chamber Orchestra* (1951) it became the plot— in a manner of speaking— of the musical drama which the piece represents. Before the act of through-composition, Cage drew up a chart of 224 orchestral sounds arranged in a 14 by 16 grid; in the first movement, while the piano part was composed in the quasi-improvisatory style of which he had made use throughout the 1940s, the orchestral part was defined by simple chess-like moves around the chart of sonorities.

Throughout the succeeding movements, the piano part moves towards the orchestra’s in style, with the final movement being dominated not only by the dislocated effect of sounds derived systematically from charts of sonorities, but also by silence, no longer as a device for articulating musical phrases as it might have been in earlier works but as a medium in its own right, bringing a new freshness and sense of stillness to the musical effect. Cage himself describes it thus: ‘in the first movement [of three], I let the pianist express the opinion that music should be improvised or felt while the orchestra expressed only the chart, with no personal taste involved. In the second movement I made large concentric moves on the chart for both pianist and orchestra, with the idea of the pianist beginning to give up personal taste. The third movement has only one set of moves [dictated by coin tossing] on the chart for both, and a lot of silences… Until that time my music had been based on the traditional idea that you
had to say something. The charts gave me my first indication of the possibility of saying nothing’ (quoted in Griffiths 1995, p. 24).

For the next few years, as the notion of abandoning his own taste, and the developments of compositional activities which might enable this became central to Cage’s oeuvre, his work became a progressive dismantling of the props which support the transmission model of musical composition. The notion of a musical work as structured time and silence as a material as suitable for composition as sound led inevitably to the notorious 4’33” (1952) – a sequence of three absolutely defined silences (30”, 2’23” and 1’40” respectively), a composition which in performance lifts the listener’s attention away from whatever is happening on stage to the entire environment as a sounding body. In *Music for Piano* (1952-56), the pre-composed gamut of sonorities was replaced by sounds selected by observing minute imperfections in the paper. Further parameters (clefs, accidentals, playing techniques) were divined by I-Ching coin tossing. With the score of *Music Walk* (1958), prospective performers find themselves presented with two sets of transparencies, one, ten transparencies containing points, the other – a single transparency – a set of five lines, representing 1) plucked or muted strings, 2) notes played on keyboard, 3) external noises, 4) internal noises and 5) auxiliary sounds. The act of translation, from points to sound events, is left to the creative discretion of the performers (see Fig. 34). After *Music Walk*, it may well seem that Cage had composed himself into something of a corner – once there is so little left for the composer to do, why act at all (especially if, as happened to Cage, this point in the creative life coincided with a
level of celebrity so notorious that, as he protested to Feldman, it was hard to get to be at home and compose\textsuperscript{26)?

![Diagram of Music Walk](image)

Fig. 38 John Cage Music Walk (1958), one pairing of points and lines

The work that he did complete, the Variations series (1958 – 66) (Variations I, Variations II, Variations III, Variations IV, Variations V, Variations VI, Variations VII) revisits the site of Music Walk and goes over it more thoroughly, examining and dismantling the remnants of composerly intent as if kicking over the traces.

Variations I and II, like Music Walk, consist of a set of transparencies with points and a set of transparencies with lines. Once again, the accompanying instructions define

\textsuperscript{26} John Cage and Morton Feldman, Radio Happening II, recorded at WBAI, New York, 1966, as quoted in Pritchett 1993, p.143
the parameters which the lines represent (frequency, simplest overtone structure, amplitude, duration and occurrence within the time frame of the event); the size of the points represent dynamics and the distance from point to line, once two transparencies have been (arbitrarily) put together, represents degree in the corresponding dynamic at the discretion of the interpreting performers. Variations II may well be a revisiting of the ground of Variations I with the hindsight of experience. The effective difference between the sets of transparencies is minimal; the most significant difference between the two scores probably lies in the additional instruction that ‘if questions arise regarding other matters or details put the question in such a manner that it can be answered [in the same manner as the decisions about sounds have been answered] by measurement of a dropped perpendicular.’

By the time of Variations III, the composer’s specification of six parameters is gone. Instead circles are dropped onto paper, producing random groupings of interlinked circles. The number of circles linked together in a group is then used to define the number of interpenetrating variables (be they from the set of six which has served so far, or from any other set, including theatrical, spatial – whatever the performer chooses) for one sound, or action. The number of actions overall remains unspecified.

In Variations IV the specification of any purely sonic qualities, whether by composer’s intent, or by player’s realisation of a system, is finally completely abandoned; the only parameter that exists for this score is spatial location, derived once again through the arbitrary superimposition of transparencies, this time upon a map of the place where the work is to be realised.

27 From the instructions which accompany the score
Variations V and VI, like Variations II, probably reflect once again on Cage's practical experience as a busy, and high-profile, practitioner. Variations V is not a prescription at all, but a collection of 37 observations about a work that has already been performed (in this case, at the Philharmonic Hall of the Lincoln Centre in New York City, with performers including David Tudor, Robert Moog, Merce Cunningham, Billy Klüver, Nam June Paik and Stan Vanderbeek as 'specified' (or perhaps more accurately merely remembered) in the 'score'). Variations VI returns to the world of arbitrarily superimposed transparencies, but this time the illustrations represent sound sources and loud speakers, and the superimpositions lead to the creation of a number of non-intentionally designed independent sound distribution systems.

In a sense, this seemed to mark the end of a line for Cage – by this time, he was composing little more than one work per year. Having satisfied himself that he had removed the last traces of composerly intent from his own work, he found he was able to return to his love of the stave with alacrity. Cheap Imitation (1969) was a work of homage – having discovered that, for copyright reasons, he was unable to use Satie's Socrate for a collaborative piece with Merce Cunningham, Cage decided to resolve the problem in a manner which was typically Cageian. As by that time the choreography had already been completed, Cage retained Satie's rhythmic phrasing, following beat for beat the notation of Socrate, whilst deciding pitches by chance operation (Pritchett 1993, p. 162).
6.3 Excess

There is something self-reflexive about these scores. Their topic is no longer simply the transmission of the composer’s intent. Instead, they separate out the aspects of a score’s being and reflect upon what it is to be a score. A similar self-reflexive approach to score-writing pervades many of the works composed by Sylvano Bussotti in the same period. The result is also inevitably chaotic; the intent however is more libertarian than transcendent.

Though composed for different sonic means, both the Siciliano from the five-movement cantata Memoria (1962) and Il Nudo from the song cycle Torso (1963) follow the same trajectory as pieces of writing – from clearly prescriptive scores dependent upon characters in a symbol system with a clearly defined field of reference to pages of writing so excessive that, as Attinello observes, they are ‘too visually dense to be regarded purely as symbol sets for performative translation into sound’ (Attinello 1997, p. 61). This disintegration, in the case of Il Nudo, has two faces: firstly formal – the score gets less and less like a linear text – and secondly as symbolic order – a gradual evolution away from what might be comprehensible as a symbolic system.

Instead the writing, as it were, comes to reflect upon itself as a fetishistic physical activity. Composition must have some allure for its practitioners; the act of writing is at least in part an act of self-identification – an act of self-affirmation, and an act which on a symbolic level aspires to dissolve that which appears to stand in the way of the artist’s self-realisation. Sometimes it is writing itself which seems to stand...
between us and our freedom; the need to communicate imprisons us in a Goodmanian
trap – an inherited symbol scheme and prescribed field of reference. One need only
look at the choice of texts in Bussotti’s two works to realise that part of his project is a
dissolution of symbol schemata themselves and their replacement – by invocation – of
what might be described as a realm of libidinal excess. Sometimes a work or one
movement in a work is reduced to a single page, as if the image on the page can
somehow stand for the work in its entirety.

Even when the score can be read as a straightforward symbol scheme, one is always
aware of the physicality of its writing. Notes crowd upon one another in bursts of
scratching and delineation as though the act of writing is as important as the material
being described. It is unsurprising that this writing, this activity of self-affirmation,
invariably erupts into pure writing and symbol-dissolution, determined to affirm
nothing but its own existence.

Il Nudo seems like a score which is trying to remain prescriptive. However, the
passion of writing constantly erupts throughout the score in parallel with the
heightened language of the text, ultimately disintegrating completely any hopes of
transmission by symbols. It resembles the trace of an act in which every intention has
been made to keep to a symbol system, with its scheme and field of reference, but
through which writing has continually erupted into an excess of self-presence.

The work, for soprano, piano and string quartet, is in four short movements. As a
prescriptive text, the first movement (‘Ecco che spunta già l’alba aurora/É tu ridi il
tuo gioco più spietato/Quando viene il mattino hai già scordato/Quando viene la sera

113
impari ancora /Lungo piove l’ulivo/Fitti nodi di luna 28) remains closest to traditional models of transmission – a shared stave reads from left to right, top to bottom across each one of four pages. Though still sequential, the second movement (for voice and string quartet only) no longer reads clearly from left to right, top to bottom. Instead, the score for the whole movement runs across two pages, laid out in a manner which delights the eye, yet confounds – but does not ultimately overthrow – the reading intelligence. By the third movement (Atto 29, for string quartet alone), each of the four parts has a separate page and runs independently.

From the outset the score is laid out in a beautiful hand, with a fine attention to detail and a glossary of extended techniques and associated symbols to further enrich the visual feast. But from the very beginning there is uncertainty. Symbols appear which are neither part of a traditional musical lexicon, nor of Bussotti’s glossary of extensions.

Whereas in the first movement even when a sign has no listed referent it could still be imagined as part of a symbol system whose key is incomplete, in both the second and third one finds a short section of score in which the symbolic frame itself dissolves: firstly, in the vocal part as it comes to the end of the second movement (Fig. 39); secondly, in the independent first violin part of the third movement (Fig. 40).

---

28 ‘Here, the dawn’s aurora is already dulled/And you laugh, your game more pitiless/When it comes, morning has already forgotten/When it comes, evening has still to learn/For a long time the olive pours/Thick lumps of moon.’ Text from Lectures by Braibanti.

29 ‘Event’
In this third movement, each of the players has a section marked *calcolare due righi di silenzio* (‘estimate two lines of silence’) — to which the second violin has appended *con l’unico pizzicato* (‘with the one pizzicato’) and a cute illustration on a harmonic high G. The first violin part gets the figure below and the added instruction *appena trapuni di rumori* (p) (‘just a collage of noises (p)’).

It is in the fourth and final movement for solo soprano (‘Il nudo violento dolce essenziale corpo-linguaggio dell’intuitivo vitale’\(^{30}\)) that writing as prescriptive coding reaches maximum dissolution and writing as an end in itself erupts through it. The writing is visually appealing and absurdly difficult to perform from the first measure and grows increasingly so as the movement progresses until, by measure 23, the representation of musical effect is by allusion, rather than by notation — alphabetic letters and dotted lines suggest rather than define timbres and pitch direction. The notation continues in the same fantastic vein, adding visual invention upon visual

\(^{30}\) ‘The violent nude, sweet essential body-language of the vital intuition.’ Text also by Braibanti.
invention, until the final two measures (29 and 30, though “designs” might by this point be a more appropriate term than measures (fig. 41)) – the first at the limit of what might be called musical notation – the final ‘e’ of violente, accompanied by a

Fig. 41 Sylvano Bussotti Il Nudo, conclusion
musical hieroglyph which as a score surely surpasses the abilities of any performer to give due representation to all its features — the second slightly calmer, or at least more comprehensible as text.

The Siciliano from Memoria reflects the same writerly passion, but in this case the eruption of pure writing has a trajectory almost as if this were the theme of the work. Scored for a choir of twelve voices, the two pages of this score could be read as one long visual design and piece of writing. The work can be seen as divided into four sections, or phases, each a little more disintegrated than its predecessor. Reading from left to right, the work begins sensibly enough, though visual humour is already apparent; the choir is divided into two sections, one singing at the highest possible pitch, the other at the lowest, at a dynamic of pppppp.

The next section set the words o pasturedda di and pri’n tappighiari in a pontillist, but still co-ordinated fashion, but the third section sees — though still readable as prescriptive — a further disintegration in setting the remaining fragmentary phrases chi fai, la trizza ad unna, pinnatu di la manu manca and ‘ssa facciuza biunna, into not a sequential order at all but something more fragmentary, with each voice working to an extent independently of its fellows. The original text, an ‘anonymous popular song’ quoted by the composer on the first page of the manuscript, reads —

O pasturedda di la trizza ad unna
Chi fai pinnatu di la manu manca
Pri’n tappighiari ‘ssa facciuza biunna31

31 ‘O wavy-haired little shepherd, who make a comb out of his left hand to untangle his little blond head.’ (Trans. Attinello 1997, p. 81)
The passage has, as Attinello observes, 'interesting implications. It can be read as a portrayal of the experiential vividness of the natural and disorganised, suggesting that such vividness is lost with organisation and control' (Attinello 1997, p. 81).

This gives the clue for the remaining section; section four (Fig. 42) occupies the whole of the right hand page of the score. The parts, though remaining clearly delineated - it is clear which part belongs to whom - implode upon one another in a frenzy of writing: nothing is certain here. If, as Karkoschka (1972, p. 94) suggests, the
slanting staves indicate an acceleration or deceleration of tempo,' then what were taken as co-ordination lines in section three can hardly be read as such in this fourth section. What is obvious, is obvious by analogy – the work has become chaotic, liberated, sensual; the task of the performers is hermeneutic – to create a performative equivalent. The single line of text is by Paolo Emilio Carapezza and reads 'il mare è che lunghi fiumi caldi raccoglia'\textsuperscript{32}. Once again the text set by the composer to be performed by the vocalists is a metaphor for the libertarian disintegration visible in the score.

The fifth and final section of Memoria carries the motto, 'La partition ne peut se faire que dans la violence.'\textsuperscript{33} In these works of Bussotti's, the physical and sensual reality of performance is never overlooked; moreover, it is generally brought to the fore:

Attinello observes\textsuperscript{34} that this could be partially understood as a natural response to his immediate successors at Darmstadt, Boulez and Stockhausen, for whom the musical work, particularly at that time, was something abstract, disembodied. In Pour Clavier (après pieces de chair II) (1961), the performer is instructed to caress, but also attack the body of the piano itself. And though Sette Foglie III, per tre sul piano (1963) lacks any such specific instruction, the constantly mobile activity of three performers in and around the body of the piano inevitably gives rise to a situation in which the piano comes to resemble 'a prone body, alternately caressed, cajoled and assaulted by its suitors' (Richard Toop, quoted in Griffiths 1995, p.137).

\textsuperscript{32} 'The sea is the collection of long hot rivers.' (Trans. Attinello 1997, p. 85)
\textsuperscript{33} 'This score cannot be performed except through violence.'
\textsuperscript{34} Attinello, 1997, pp. 11 - 19
Perhaps the culmination of this phase of Bussotti’s creative output comes in *La Passion Selon Sade*, composed between 1963 and 1966. The score – 46 pages of beautifully drawn instructions, diagrams, notations and hieroglyphs of indeterminate significance – is laid out with a care and passion that makes it impossible to reduce the work to any performance that might arise from it. Notation transforms from symbol scheme to visionary calligraphy and back again. Images of bodies are scattered through the text: bodies in costume, bodies in action – at one point a human body appears to be being assaulted by the notation itself. Violent, physical and sensual instructions occur – that the ‘flautist must strip partially, that the singer and conductor lie together on a divan, the percussionist act as a torturer (Ulman 1996, p. 187).’

It is an injustice to these works to regard them as purely visual, or existing only in some non-realised realm of the imagination. Instead they demand a re-visiting of the
site of composition, and a more considered reflection on the act of writing, the hermeneutic play of interpretation and the ideal nature of the musical work.

6.4 Anarchic social ideals

The performance of a musical work brings into being, if only temporarily, a micro-community, a model of a community. The autocratic model of this community inherent in the transmission model of composition is inherent neither in the score nor the act of realisation from it. In 1967, Cornelius Cardew established the ‘Scratch Orchestra’ to explore just this matter — a large ensemble whose members co-operate on the production of large-scale co-ordinated works while nonetheless remaining independent of autocratic social forms. To this end he devised a constitution for the ensemble which included such regulations as the one which instructed that ‘each member [of the orchestra] will have the option of designing a concert; if the option is waived, the details of the concert will be determined by random methods, or by voting’ (Cardew 1972, p. 10). One can read this constitution as a score of sorts — a written text which prescribes, to some extent, the musical activities of the ensemble for which it was written.

Christian Wolff — an artist whom Cardew knew to be sympathetic to the Scratch Constitution — was commissioned to compose a work which, though written by him, would nonetheless satisfy these ideals. The result was Burdocks (1971), a score which in many ways represents the culmination of the discoveries and methods which Wolff had developed since Duo for Pianists I in 1957. In a private conversation\textsuperscript{35}, Christian

\textsuperscript{35} At Huddersfield Contemporary Music Festival in 2002
told me that he took his model for this work from the music of the ba-benjellé pygmies. He did not say what the connection was but, on listening to ba-benjellé pygmy music (Wenze 1993), the performative image is one of several small groups working independently, almost without reference to their neighbours, but in such a manner that the overall result nonetheless has a quality of harmony – a true musical model of communitarian living. As Cardew observed: ‘the ideology of a ruling class is present in an art implicitly; the ideology of a revolutionary class must be expressed in its art explicitly. Progressive ideas must shine like a bright light into the dusty cobwebs of bourgeois ideology in the avantgarde, so that any genuinely progressive spirits working in the avantgarde find their way out, take a stand on the side of the people and set about making a positive contribution to the revolutionary movement’ (Griffiths 1995, p. 185).

The score is in ten sections; not ten movements however, but ten musical activities which can be carried out independently of, or alongside, one another. From the outset, a distinct social paradigm is in evidence. ‘The players should gather and decide, or choose one or more representatives to decide, what sections will be played and in what arrangement.’ However it is performed, the nature of Wolff’s musical games is such that independent creative interpretative activity takes place.

Each of the ten sections provides a different kind of game, requiring a differing approach to co-ordination in performance, and to the hermeneutic play which precedes it. Section VI, for instance, provides a melody and three accompaniment figures for any number of players, but no instructions or restrictions as to how these

36 From the instructions which accompany the score, p. 1
devices should be combined. Section III (the simple verbal instruction ‘Orchestra of any number. Each player makes about 511 sounds, each sound different in some way.’) provides a heightened opportunity for player autonomy. Section X, the allusive instruction ‘Flying, and possibly crawling or sitting still’. Sections II and VII are exercises in vertical co-ordination (See Fig. 40 below – the accompanying instructions read ‘Three, four or five players to an orchestra; designate three as (1), (2) and (3): they play the above, (2) in the first sequence giving the cue (by playing) for attacks, anyone, by doing so, for release; in the second sequence (3) gives the attack cues. The remaining players, if any, play as they choose with (1), (2) or (3). Black notes are more or less short, white of free duration. A diagonal line through a note = a sound quality somewhat shifted from the normal one (or what you may choose to designate as normal) of the sound producing means available. 2t = two timbres, simultaneous, successive or overlapping. Repeat the first sequence as often as (2) cues it, then repeat the second as often as (3) cues it.37), with VII being simply the more sophisticated. VIII provides a randomly distributed catalogue of one hundred short musical figures to be disposed of at will by – and at the aesthetic judgement of – its participants.

Fig. 44 Christian Wolff Burdocks (1971), II

37 From the score
Section I consists of a (mostly) verbal text, describing five musical games for small ensemble, with a short prefatory text explaining how these five games might be coordinated in performance. IV and IX similarly, but on a larger scale, describe in words a musical game to carry out.

The works analysed above could be considered to mark the boundary at which the transmission model of musical composition is seriously threatened, and other concepts of partnership need to be called upon. Shortly before an early exhibition of ‘texturologies’ (presumably in the nineteen fifties), the painter Jean Dubuffet wrote to his friend and colleague the critic André Pieyre de Mandiargues that ‘he was afraid his ‘texturologies’ brought art to a very dangerous point where all difference between the object – supposed to provoke thought and act as a screen for the viewer’s visions and meditations – and the basest and least interesting material formations had become very subtle and uncertain’ (Eco p. 101). This place, where a work of art becomes almost nothing, tantalises and inspires me. Because in the process of bringing a musical work into being from a notational template there is more going on than the composer’s will and the transparent performer. It is from the place where nothing seems to exist beyond transmission that the three works The Madonna without Mercy (2001), Four Reading Trance Documents (2002) and A Book of Silence (2003) arise. But they do not ultimately mark a cul-de-sac so much as a wilderness which I had to traverse before I could engage again with the joy of interpretative performance. But from the other side it is no longer the composer’s sonic idea which marks the source of the tradition of works, but the faithful interpreter’s hermeneutic activity, and the joy of the sounding work as an event.
Chapter 7
On Play and Interpretation: Performing the Works of Anestis Logothetis

7.1 On play and interpretation

If we consider the world of musical works composed as written scores realised in performance not as a body of works per se but as a culture, a way of making music then our understanding of the relationship between score, work and performance can be observed through a relatively novel lens.

If one's primary role in this particular culture were that of a listener, one might be tempted to believe that it is the qualities of a composed instrumental work as a sonic experience alone which made it reproduce. As a composer, one might further qualify the observation with a knowledge of its quality as craft which makes it succeed so—the extent to which the noise produced is idiomatic to the instruments producing it. But there is a third factor in this culture, a factor which is crucial to its survival as a culture at all, and that is the players themselves, and the satisfaction which participation in this culture brings to them. This satisfaction has numerous dimensions, all of which come into play in sustaining interest in the world of scores realised to performance.

There is the obvious physical pleasure of playing an instrument; there is the projective satisfaction of bringing to an audience a sonic experience which the players believe pleasurable; then there are the numerous pleasures which arise inevitably from the game-like activities of rehearsal and performance; and finally, the hermeneutic
pleasures of interpretative play — the to-ing and fro-ing from the apparently dead text towards the live spirit of understanding and realisation.

In order to see these latter pleasures more clearly, it is fruitful to divide the topic of play in two: the concept of play proper, and the notion of “play” (spiel) as the basis of hermeneutic activity.

In his book *Homo Ludens*, Joseph Huizinga identifies play as ‘a voluntary activity or occupation executed within certain fixed limits of time and place, according to rules freely accepted but absolutely binding, having its aim in itself and accompanied by a feeling of tension, joy and the consciousness that it is ‘different’ from ‘ordinary life’” (Huizinga 1949, p. 28). This quality he then finds present in the background of many of the activities which distinguish human civilization — in legal process, in war, in games and in the arts. In short, he identifies this penchant for play as a crucial part of human nature, because play can be seen to represent the point at which the excess of conscious life over crude mechanism is most celebrated: ‘play only becomes possible, thinkable and understandable when an influx of mind (sic) breaks down the absolute determinism of the cosmos’ (ibid., p. 3).

This is not to say that Huizinga identifies the spirit of play as the sole driving force in human nature, nor that all forms of play should be seen as equally meritorious. Instead, he grants a privileged place within civilized society to forms of play which involve skill, and which present a spectacle that can be presented as a source of aesthetic pleasure to observers: ‘Once a game is beautiful to look at its cultural value is obvious; [...] Physical, intellectual moral or spiritual values [which earlier Huizinga
had identified with contests which demand 'application, knowledge, skill, courage
and strength'] can equally raise play to the cultural level. The more apt it is raise the
tone, the intensity of life in the individual or the group the more readily it will become
part of civilization itself. The two ever-recurrent forms in which civilization grows in
stature and as play are the sacred performance and the festal contest' (ibid., p. 48).

The musical practice of realising works from scores can be seen as one such form of
heightened play. The final result – the musical performance – is (or at least is intended
to be) both a source of beauty and a celebration of human gracefulness and skill. But
this performance can be seen, not as the purpose of the process of rehearsal which
precedes it, but as no more than an aspect - albeit a culminatory one - of the whole
game of which it is a part. For the players, the process, including the process of
rehearsal, is wholly one of play. For musical rehearsal also involves a privileged time
and space different from 'ordinary life' and a regulatory definition in the project
before the players (that of realising the intended works).

Moreover there is another yet more privileged form of play buried within musical
rehearsal which escapes Huizinga's analysis, and that is the essential hermeneutic
play inherent in the interpretative act of realising the score into a performed sonic
event. It is at this point in the understanding of play where Gadamer\textsuperscript{38} diverges from
Huizinga and moves back into an analysis of the etymology of the term play to
examine not only the heart of play but also the hermeneutic process, the process by
which the human mind comes to know its own world.

\textsuperscript{38} In Truth and Method (Gadamer 1975)
'If we examine how the word 'play' is used and concentrate on its so-called metaphorical senses, we find talk of the play of light, the play of the waves, the play of gears or parts of machinery, the interplay of limbs, the play of forces, the play of gnats, even a play on words. In each case what is intended is to-and-fro movement that is not tied to any goal that would bring it to an end' (Gadamer 1975, p. 104).

For Gadamer the play-space, play-time and system of regulation which Huizinga defines as fundamental to human play are secondary, symptoms of a drive to make human play possible. Gadamer identifies the heart of play as the to-ing and fro-ing motion: 'through the contest arises the tense to-and-fro movement from which the victor emerges, and thus the whole becomes a game. The movement to-and-fro obviously belongs so essentially to the game that there is an ultimate sense in which you cannot have a game by yourself. In order for there to be a game, there always has to be, not necessarily literally another player, but something else with which the player plays and which automatically responds to his move with a countermove. Thus the cat at play chooses the ball of wool because it responds to play, and ball games will be with us forever because the ball is freely mobile in every direction, appearing to do surprising things of its own accord' (ibid., 104 -105). It is this endless to-ing and fro-ing which forms the essence of play.

The importance of this understanding to Gadamer cannot be understated. For from this vantage point we are able to closely examine hermeneutic activity, the process by which we come to understand our relationship to the world. Perhaps the simplest model of understanding is that of the study of natural science, for in natural science certain facts are considered to be "the case". The process of coming to understanding is then a straightforward one: there is an interpretative 'play' — a to-ing and fro-ing between the mind in its ignorance, and the facts which are to be known; the play...
comes to an end when the facts as they exist are clearly present in the mind of the student. However, this model of the hermeneutic process is of limited application beyond mechanistic physics. For much of life, for the human sciences, the hermeneutic process is without end, a constantly coming to know better that which was already somewhat known. Gadamer coins the phrase ‘romantic hermeneutics’ to describe the many — predominantly nineteenth century, but still prevalent today — attempts to apply the scientific model of knowledge acquisition to the disciplines of law, literature, art, history and so forth.

A great part of his masterwork *Truth and Method* is devoted to an attempt to articulate how the hermeneutic process works in the broader sense. It is not simply that, because a form of knowledge lacks a clear and solid bedrock, the interpreter is free to impose upon it whatever whimsy he or she may choose. Instead the process of coming to knowledge is itself a hermeneutic process, an interpretative to-ing and fro-ing between the student and the matter being studied. The moment of understanding has the form of an event, or an act of resolution. This act, this event, is founded in concepts of civil behaviour that owe much to the ideals of the enlightenment. That is to say, a faithful interpretation of a historical, aesthetic or legal “fact” relies upon cultural dimensions which are not inherent in the object of study itself, but instead depend upon general principles as to what it means to provide a fair understanding in any case.

Gadamer analyses these general principles as being essentially fourfold; they are Bildung (‘being cultured’), Common Sense, Judgement and Taste. Each of these four principles is open: it fixes neither the form of the answer, nor the mode of
questioning. Instead each one articulates one aspect of the approach to fair
interpretation.

In a sense, Bildung is the mother of the other three. Bildung designates not only the
result but also the process of self-cultivation, of developing one's own natural talents
and capacities so as to become, through cultivation, one's own self. This is the basis
from which one is able to apply judiciously one's own capacity for common sense,
judgement and taste. For these three, though aspiring to be greater than the merely
personal, have no other foundation than in the limited historical horizon of one's own
understanding.

Common Sense then refers not to the simple English concept of 'common sense' —
that which everyone finds self-evident — but to sensus communis, a sense of that
which is held in common, of tradition in its most general and ideally least parochial
sense. Much of the framework which supports and defines the individual and much of
the media through which one expresses one's own self and its longings, is inherited —
our language, our social institutions, our instruments. Sensus communis is a sense of
this inheritance. It is this sense, for instance, that might enable a musician to give a
historically informed performance of a work composed in another era.

Judgement is fundamentally the capacity to identify general rules and apply them in
the particular case. But the logical basis — that any one item is a particular example of
one general rule — can never be demonstrated. Judgement then is more like an ability
than something that can be learned; it can only be practiced from case to case.
Good judgement is then dependent upon taste, as a mode of knowing. 'The mark of good taste is the ability to stand back from ourselves and our private preferences, [...] one can like something that one's own taste rejects [...] taste is not a mere private quality, for it always endeavours to be good taste' (Gadamer 1975, p. 32). Good taste is strongly aligned with a practice of discernment and a sense of the whole, a sense as to what belongs.

Armed with these four criteria, one is able to enter into the pursuit of knowledge in the arts and the human sciences. For the pursuit of knowledge is not merely the "romantic" pursuit of "facts", it is also the pursuit of understanding, a hermeneutic process.

The hermeneutic process has its roots in the asking of a question; but it is the quality of the question which determines the quality of the answer. If the answer is presupposed, then the question is not truly "open". But if the question is not "foregrounded from those presuppositions which are already held," then it is not "brought into the open" and "nothing can be decided" (ibid., p. 357). In short, constructive enquiry is founded in the knowledge and acceptance of one's own limitations and the equal acknowledgement of the validity of the matter in hand, despite its fundamental undecidability. In order to come to a fair interpretation, one falls back upon the principles of good judgement. This endless process can rightly be identified as not peripheral but crucial to human self-understanding and expression.

From here, the play identified with the realisation of a musical score becomes an aspirational model for human behaviour. A musical score is a site of interpretative
play. However, this hermeneutic process need not be simply “romantic” – concerned with the realisation of the “fact” of the composer’s “sonic idea”. A score whose identity is “open” is not necessarily a prescription for chaos, but can instead provide the opportunity for a more humanist hermeneutic engagement, a site which demands from its interpreters the full engagement of their judicious skills.

7.2 On the page as an inscription

If one is willing to engage with the score as a site of hermeneutic play, rather than a form of transmission, then its possibilities expand. The composer is no longer held back by the restrictions identified by Nelson Goodman – such restrictions were only necessary if transmission, the romantic hermeneutic, was considered the goal. Instead the construction of the score becomes itself a form of deep investigative play – what is it to mark a page, with the expectation of that page being performative?

To the beholder, the marked page has to be understood, first, as a page.

Once the observer acknowledges the page, the task becomes one of identification: what kind of page is this? Is it a linear text, a map or diagram, or an image? Having done so, the attention moves to the second level – to analyse its constituent marks as sign, symbols, indexes or icons. Only then is the reader able to come to terms with the page, decode, unravel and make use of it.

There are three primary forms of inscription, each with its own phenomenology, and consequent manner of reading. The three categories are:
1) **The linear script**, which is read as a string of symbols, each possessing boundedness, identity (or separateness) and a unique signified. The location of a symbol in the visual field, and consequently the inter-relationship between symbols, is defined by the *line*, which is continuous and unidirectional. This line is of course not necessarily simply one-dimensional; at each instant a depth of symbolic meaning is readable – an obvious example, the alphabetic letter. The musical stave, which appears to maintain several lines running in parallel remains a single line, but one of multiple depth.

2) **The diagram** has the same independence and specificity of symbols as the linear script, yet it brings these symbols together in an integrative, as opposed to linear, field in which multiple directions proliferate endlessly. In contrast to the linear script, which contradicts the spatiality of the visual field, the diagram everywhere indicates and depends upon the topological properties which it possesses. The drawing is often a special case of the diagram, in which measure as well as location can serve an indicative purpose.

3) **The image** exists as a single symbol, whose constituent parts do not necessarily possess separate and distinct meaning. Though they might be susceptible to individual analysis, their individual meanings may only be understood with reference to the over-arching meaning of the image as a whole.

Feldman’s *Intermission No. 6* (1953) for solo piano (see Thesis Vol. II, pp. 202 – 206) can be read as a simple form of the diagram. Individual, bounded and self-referential
symbols for sound production, each of which possesses a single, clear and distinctive signified — much as one would find in a linear script — are arrayed in a non-sequential manner, permitting the possibility of manifold readings. No particular significance is ascribed to the space which incorporates the symbols. One might therefore choose to read the work as also having a tinge of image, by reading the surrounding space as having its own symbolic value. One might take the quantity of empty space which surrounds and isolates the visual symbols to imply an equivalent silence between the events in a performed realization. In addition, if one assumes that the unsymmetrical arrangement of symbols across the page is deliberate, one might also aspire to perform the events with a corresponding lack of equilibrium by varying the duration of the pauses between them in a similarly unstable manner.

Stockhausen's Klavierstück XI (1956; Fig. 41) lacks this imagistic quality. The space between events is deprived of potential significance by the strictness of the instructions which accompany the score, insisting that events follow from one another without pause. The visual signs are also arranged more or less evenly on the page, and the passage from one event to the next is controlled by intermediary functions which define the dynamic and tempo characteristics from one event to the next. The arrangement of elements in the score is purely functional, rendering it a diagram, whose visual appearance — as image — is incidental.
Fig. 45 Karlheinz Stockhausen: Klavierstück XI (1956)
7.3 From reading to performance: four possible approaches to (and one realization of) Roman Haubenstock-Ramati's *Batterie*

Though composed expressly to be read as a musical score, Haubenstock-Ramati's *Batterie* (1969) possesses neither a key to symbols nor indications as to its nature of a text. One can therefore choose to read it as script, diagram or image.

In order to read it as a script, one would need to differentiate its continuum of visual gestures into separate, bounded and self-sufficient symbols each possessing its own signified, then define the path of the line through the visual space. One possible reading as script is illustrated below (Fig. 42). The imposed line provides a series of crossings and inscribed figures which could be read as independent referential signs. There remains the task of devising a glossary by means of which these signs might be translated to sounds or musical actions.

In order to read it as image, it proves necessary to gain some understanding of it as an overall image, and invent some intersense modality through which one might create an acoustic equivalent. One might observe that the circle which encloses the graphic illustrations divides the space into an inside and an outside, and search for a performative equivalent. The image itself contains fragments of language text, direction signs and clumps of similar geometric figures. A translation into performance image therefore might have similar clumping, direction and language referents.

To be read as diagram however, the individual figures would need to indicate more specific sound/performance actualities. One could, for instance read the linear figures
(lines, arrows and crescendo/diminuendo signs) as connective signs, leading the eye across the score, allowing the remaining figures (the clumps of geometric figures, the area shaded by parallel lines and so on) to represent particular sound activities. Reading arrows to indicate tempo change along their length, and the hairpins, dynamic, would complete the process, creating a dynamic, yet congruent, response to the visual object.

In 1999, the percussionist Jan Williams recorded a performance of Batterie on the HatHut label (Blum, Haussman, Willaims 1997). His key perception of the score was as a diagram. He divided the visual space into four quadrants, each of which was to be dominated by a particular instrumental resource, as shown in Fig. 47. This mode of reading successfully defines the range of sound/performance symbols available to each sonic resource. However, his practical realisation of this diagram to performance imposes upon it the act of reading a linear script, reading as he does through the four quadrants in turn. It is impossible to tell from a performance where the boundaries between regions lie, or the mode of his reading once within a quadrant.

There are many further differentiations and analyses possible in the study of these fundamental modes of inscription – the circle for instance, as discussed in the previous chapter, with its multiple start and end points, is an interesting halfway point between diagram and script.
Fig. 46 Roman Haubenstock-Ramati Batterie (1969), read as linear script

Fig. 47 Roman Haubenstock-Ramati Batterie (1969), read as diagram
7.4 On the mark as a sign

However in addition to these overarching formal modes there is also the inherent matter of the marks themselves, those marks which comprise the body of the score, and their recognition and interpretation. For any mark, if it is to be read, must be understood as a sign of some kind.

For Charles Saunders Peirce, these constituent signs of the inscription fall into three broad categories: the index, the icon and the symbol.

An icon functions as a sign by bearing some resemblance to it. An index partakes in some sense of the properties of the thing signified – some actual, or causal, connection to it. A symbol functions as a sign simply by convention, by some traditional or habitual rule which associates the one with the other.

7.5 The scores of Anestis Logothetis

This double-decoding which arises at the point where reader and page meet marks the point from which the mature works of Anestis Logothetis begin. Logothetis’s scores provide no more than a site of reading, a starting point for the interpretative activity which marks the creation of a musical event from a marked page. But this does not indicate an indifference to the page as a marked site, a site designed for reading. To the contrary. Though sharing a common visual language, Logothetis’ scores – in structure – make available the whole ninefold world of possible pages. They thus lay open to us the opportunity for a deeply creative approach to hermeneutic activity. As
Peirce often observed, a sign rarely partakes solely of one particular mode of signage. Instead the mark combines qualities of several signs. Just so, the marked page may, in one page, combine elements of map, image and text. The act of interpretation then is one of play, a moving back and forth between creative expression and intended fidelity to the marks before one.

It is in this light that one begins to understand Struktur-Textur-Spiegel-Spiel. Like Burdocks and Cage's Variations scores, Struktur-Textur-Spiegel-Spiel provides not so much a template for the performance that may occur, as a kit for an ensemble to create a work which belongs to them at least as much as, and possibly more than, the composer. But not only does Struktur-Textur-Spiegel-Spiel, as a work in itself, provide a kit for performers it also, in expanding the score to a point far beyond linear script into a new, more general, codification of signs, presents the beginnings of a conceptual and symbolic methodology from which one might coin a new relationship between the score as a prescribing artefact and the musical performed event.

In almost all of the scores that Logothetis completed in the ten years after writing Struktur-Textur-Spiegel-Spiel in 1959, one sees a rapid movement, an oscillation, across the space uncovered by this new methodology. What seems to concern him initially is the dawning realisation that 'a notation is simultaneously innovative in its explorations of all the latent possibilities of sound, and restorative in its conventional use of the already established' (quoted in Collins and Morton 1992, p. 570). When faced with an expanded range of musical material ('ein erweiterungen des

39 As quoted in Hawkes, pp.126 - 131
klangbereiches im instrumentalen\textsuperscript{40}, a new notational paradigm becomes necessary, one which is able to represent occurrences of sound character ('klangcharacterliche Geschenisse') in one sign-complex ('ein zeich als Aggregatezustand der Musik'). Such a system of representation presents a 'flexible but nevertheless binding script of sound characters' whose 'notation on a single sheet of paper guarantees an overview of the larger form' (ibid.).

\begin{figure}[h]
  \centering
  \includegraphics[width=\textwidth]{fig48.png}
  \caption{Anestis Logothetis Styx (1968)}
\end{figure}

In scores such as \textit{Mæandros} (1963) and \textit{Styx} (1968; Fig. 48), the sequence of sound-complex signs is bounded by a rigorous temporal grid, which makes its way down the

\textsuperscript{40} Quoting, in order, from \textit{Kurze Musikalische Spurenkunde: Eine Darstellung des Klanges}, the instructions to the score of \textit{Odyssee} and the title of a short book by the composer, published in Munich in 1974
page alongside the image, prescribing for each nuance of the aggregate-sound as it
does so a precise time of occurrence. In *Dynapolis* (1963; Fig. 49), the grid and the
image have become interlaced, leading to an openness as to how they relate, an
openness which nonetheless must be prescribed by the interpreters before the score
can be realised to sound. In both *Odyssee* (1963; Fig. 51) and *Labyrinthos* (1965), the
sense of a meandering temporal journey throughout the aggregate sound remains
(explicit in the former, implicit in the latter) though all temporal details have
loosened, or been abandoned. And in *Ichnologia* (1964; Fig. 50), the sound-complex
image stands free, open to all and any reading. What matters in these scores is not the
relative degrees of freedom between them *per se*, but, as a body of work, that they
explore the range of possible freedoms that arise once one is engaged upon a process
of working with, and from, single page images of sound character.

![Figure 49 Anestis Logothetis Dynapolis (1963)](image-url)
What these scores are not, is bases for improvisation; though spontaneity is welcomed, it is always within a prescribed frame. Individual musical details may be ‘created spontaneously moment by moment’ but they are ‘dependent upon the process of transfer from their graphically fixed state to that of fluid sound’. In several of the published versions of his score from this period, Logothetis exhorts: ‘this type of drawing is intended to represent occurrences of sound character. It is not intended as a means of improvisation (‘Diese Art von Aufzeichnung soll klangcharakterliche Geschehnisse vermitteln und nicht als improvisationmittel aufgefaßt werden.’).’⁴¹ I am left with the impression that a casual sixties attitude of improvisation without serious interpretative engagement may often have been the lot of Logothetis’ scores in the time that they were written. This is a shame, because as one studies them, one becomes aware of the intelligence of the sensitivity to modes of interpretative reading

⁴¹ Frequently, in the instructions which accompany most of his scores in this period
Fig. 51 Anestis Logothetis Odyssee (1963), and its accompanying acetate
which underlies them as a body of works. All our possible page-types are there, as are, clearly distinguished, each of Peirce’s signs. Indeed, in his book *Graphische Notationen*, Logothetis himself explains his own signage as a threefold classificatory system which is identical in practice, though not in name, to Peirce’s theoretical understanding. It is an understanding that could be applied to any page as a precursor to musical performance. But in Logothetis’s own scores this quality is brought clearly to the fore. There are, as Logothetis points out, three types of sign in a musical score. (1) The association sign – which represents in some simple and pretty much intuitively obvious way a particular sound type. (2) The action sign, by contrast, is a performance instruction. It prescribes the sound by indicating the kind of action which might generate it. And finally, (3) Logothetis invents his own pitch wheel – a set of twelve symbolic signs which are to be understood as representations of the twelve pitches of the diatonic scale. To each of these musical sign types there is an obvious correspondent in Peirce’s systematic analysis: the association sign is an icon, the action sign is an index, and the pitch sign, a symbol.

Both *Enklaven* (1966) (Thesis, vol. II, pp. 291) and *Odyssee* (1963, Fig. 51), each in its own way, suggest themselves as linear script. That is, they imply a singular directional flow for reading. In the case of *Odyssee*, the flow is explicit – the instructions which accompany the score identify the continuous line on the acetate sheet as an ‘element of motion,’ a ‘path … which runs in horizontal and vertical segments.’ In the case of *Enklaven*, the flow is implicit: the score has the essential form of a grid of lines running from left to right across the page.

---

42 From the instructions which accompany the score
Panel two from *Anastasis* (1969) (Thesis Vol. II, pp. 290) – a composite set of five single page scores – is more akin to a map or diagram, a space through which innumerable equally valid pathways might be routed.

The ensemble page for *Globus* (1978) (Thesis Vol. II, p. 288 – 289) is more in the realm of images – a singular world without textual or diagrammatic status, but defined by four types of figure: the circular ‘frequency pattern’ and the three types of action/association sign contained within it – the “explosion”, the “snail trail”, and the “distorted waveform” (my terms).

Clearly, in each of these cases, other readings might be possible: the issue is not that of seeking the one ‘correct’ reading of the score but of interpretation – the judicious weighing up of the inscription before us in pursuit of a fair reading. This means that whatever reading is chosen in practice needs then to be followed through ‘to the letter’ as if it were the true meaning of the score.

It follows that once an interpreter or group of interpreters elects to work on a score from within one reference frame, remaining details within the score need to be subsumed to that particular frame\(^43\). In the case of the four scores analysed above, details are plentiful.

Once the score of *Enklaven* is read as a linear script, each of the sixty-five lines running across it must have their place in the script and the five ‘enclaves’ which are superimposed upon them need an articulated relationship to this temporality.

Similarly, if panel two from *Anastasis* is read as a map or diagram, each pitch sign needs to be understood in the context of the cluster of pitch signs in which it occurs, and the relationship between clusters needs to be understood within the mapping concept which frames the work as a whole. And though the ensemble part for *Globus* lacks such a clearly articulated iconography it must, if read as an image, be understood within the concept of image: the four symbol types listed above need to be present as sound occurrences and be understood in terms of their participation in an overall sonic image.

Ultimately then Logothetis’s system creates a way of working in which it might not be even theoretically possible – not even for the composer – to trace backwards from any particular performance to the score which provoked it. The matter at hand is fidelity to the score, not to any composerly concept implicit within it.

In interview\(^\text{44}\), the musician and academic Dieter Kauffman – a close friend and collaborator of Logothetis, who worked with him to the end – explained the development of the composer’s thought. A previous interview the same day, with the Viennese musicologist Lothar Knessl, had made clear the level of attention to detail which the composer had expected of faithful realisation of his scores, with particular reference to scores such as *Styx* and *Dynapolis* which employ a temporal grid. In order to realise ostensibly less prescriptive scores such as *Ichnologia*, Lothar explained, the first duty of performer/interpreters was to impose a similar grid of their own devising upon the score before them. When I presented this notion to Herr Kauffman, he chuckled, “Oh no,” he said, “if one member of the ensemble thinks that

\[^{44}\text{Research trip to Vienna, March 2003, organised with the help of Stephen Plaistow, BBC radio producer and music animateur}\]
he can give a fair rendition of this bit,” he gestured towards the pugnacious, messy strokes which seem to emanate from one side of the enclosing disc, “then he may simply choose to attend to that part.”

I realised then that, although Logothetis’s visual style changed little after 1972, he continued to produce scores on account of his own growing understanding of what he had done, letting a kind of libertarian cat out of the bag. This he learned to embrace as he went along, realising that he had created not the next stage in the concert tradition as he had understood it, but a new way of working, one which brought to the surface a vital part of the tradition of music-making from scores, which had lain for some time out of the limelight. I treasure the image relayed to me by Dieter Kauffman of Logothetis, with his co-conspirators, including Herr Kaufmann, driving to a leftfield festival of performance art in Tallinn, with the entirety of an opera, including sets, staging and performers in two estate cars. This seems a step far removed from the concert tradition of composers, agents and symphony halls in which he began his career, towards something more quietly autonomous and rooted in a more personalised concept of the interpretative activity at the heart of music-making.
Chapter 8
Towards a Hermeneutic Aesthetic

'In the future] people will compose in a completely different way from now, namely in such a way that the relationship between the composer and the reproducing artist will be a much freer one, that the player, the producing artist, has a much less determinate role, that he can be much more productive and will have much greater scope.' 45

I am seeking to engage with the world of musical performances from prescribing scores as fully as possible. That is, I am intent on becoming more than the transparent performer, some kind of means whereby. I wish to bring the full range of my being to bear on the project – my aesthetic judgement, my hermeneutic delight, my physical presence, my particular musicality. That does not mean that I intend to extend the performance beyond music, nor does it mark an insistence on making work which is solely rooted in performance. It implies a dual aesthetic which, whilst maintaining a commitment to interpretative fidelity, balances this fidelity against celebration of the physical and historical fact of the performed event.

To imagine that music is pure sound, and only sound, and detach it from the culture of music making in which it is embedded is to devalue it as a human activity. In her essay, Software for People (Oliveros 1984, pp. 185 – 201)), Pauline Oliveros described her development as an artist as one of expansion; having worked with electronic means for some time, Oliveros found that by the end of the 1950’s, ‘the whole field of sound and time’ had become her ‘material’. ‘In the nineteen sixties my interest had again widened. I wanted to include visual, kinetic and dramatic elements in my music. I began to feel continuities in sonic, visual and kinetic elements. These

45 Rudolf Steiner Das Wesen des Musikalischen, complete works no. 283, Dornach 1969, as quoted in Kurtz. P. 239
elements then began to be interchangeable for me. A sonic rhythm could be continued or played against a visual or kinetic rhythm. My works became theater pieces. My perceptions of the visual environment became as interesting to me as the sonic field. I charged myself to be aware of everything all the time (Oliveros pp. 183–184). It is in this time that she composed such works as Crow 2 (1974) and Rose Moon (1977). Still clearly understandable as the work of a musical composer, these works nonetheless display an inevitable theatrical (visual, kinetic) aspect. The mandala in each score serves a musical function, distributing sounds around the space, and defining their movements through it. The sense of musical performance as a ritual however—a factor which is always present, but often hidden by the similarity of musical ritual in any concert tradition—is in these pieces brought to the fore by its distinctiveness in their case.

Fig. 52 Pauline Oliveros, Crow 2 (1974)
However, I would argue that these works can be understood as *not* music theatre, insofar as they are not the grafting together of two media. Once the positioning of sounds becomes of musical concern then what performance activities there are can be derived from this concern, rather than imposed upon it.

The musical event has seven aspects which are not simply sonic nor can be simply ascribed to the prescribing ‘score’. These qualities are:

1) The setting of the event as a visual tableau, and
2) The performance of the event as theatre
3) Or ritual;
4) The sonic realisation as more than transparent, as also authentic presentation of the performer’s own musicality;
5) The inherent decisions in bringing the work in question to the public forum, as a matter of personal “expression” through the means of individually discerning judgement, of “taste”;
6) The particular interpretative decisions involved in realisation as a further manifestation of individual discernment;
7) Idiomatic sound.

One might reduce these seven aspects to a fundamental triad:

1) The event of the performance as theatre and ritual
2) The inescapable acoustic and sensual differences between the experience of a sounded event, and the notional sound prescribed by a score, and
3. The matter of personal judgment in terms of what one chooses to present, and how.

In three works which I presented between 2005 and 2006, each of these supra-notational aspects was brought to the fore in a number of ways. Cornelius Cardew’s *Memories of You* (1964) (Thesis Vol. II, pp. 279 – 281) – which I first performed at Dartington College in June 2005 – is a fully notated score which indicates the position of three sounds (of the player’s own choosing) with respect to a fulcrum piano which is silent throughout. It is the position of sounds which marks the pertinent feature of the work. There is an inevitably theatrical dimension; as the piano is never actually played upon it dominates the tableau in a visual, theatrical manner, not a performative, musical one. Nonetheless, the performance has musical necessity at its heart – music which however has opened itself to the reality of the musical performance as an *event*.

In *The Extended Shakuhachi* (2006; Thesis Vol. II, pp. 282 – 284; DVD, track 2), the already broad sonic palette of the shakuhachi is further expanded by the addition of an accelerometer, a pressure pad, and live digital sound-processing software. The traditional Hon Kyoku music of the Zen shakuhachi tradition is a notated one (Hon Kyoku means ‘book of music’). However, on account of the internal sophistication of much of its sonic vocabulary, the music is far from securely rooted in its notational practice: much has to be leaned from teacher-pupil contact by hearing and copying. This sonic sophistication is interwoven with the instrument’s design – a wide, cigar-shaped bore, and a mouthpiece design which is both rudimentary and highly sophisticated, requiring particular embouchure technique to complete the fipple – has
created an instrument which responds to the position and movement of the instrument with respect to the performing musician with a wide range of timbres. The Extended Shakuhachi takes these positions and movements one step further; though again driven by musical requirements, the performance activities demanded by the extended shakuhachi lead the work into a necessarily theatrical dimension. Moreover, this expanded sonic vocabulary, and the capacity provided by the instrument/computer interface to deal with streams of sound which are continuously evolving mean that, thought it proved possible to devise and rehearse works which were essentially through-composed, it appeared impossible to devise a method of notation which could do more than provide mnemonic support. The works, in other words, would, as sonic events, always flood beyond any attempt at their prescription by writing.

In The Logothetis Project (2006: Thesis Vol. II, pp. 285 – 297; CD 3) all three factors came into play: the theatre of the event, the overflow of sonic richness, and the re-centring of the work in the interpretative decisions of its performer/interpreters. By the time we had finished developing the sound materials for the third of the three works (Enklaven, Logothetis 1966), the whole performance could have been rendered entirely to disc; the choice of which elements to retain as live were based at least as much on performative criteria as musical ones. Anastasis (Logothetis Project no. 2; Thesis Vol. II, p. 290; CD 3, track 2), as we performed it, could – like Alvin Lucier’s I am Sitting in a Room (1970) – only take place in a performance setting; it is a dialogue between the act of performance and the acoustics of the space in which that performance takes place. Throughout the project, the choice of works, the mode of

46 By the time of the second outing of the Extended Shakuhachi, at the Plymouth New Music Festival in February 2007, we has taken the logical next step and redesigned that computer’s operating system so that that became quite literally the case: the system operator was given real-time access to patch parameters – the very nature of the sonic processing was now also susceptible to real-time modification.
presentation (live performance, plus pre-recorded sound, plus projected images), the choice of instruments and sonic materials was our own, despite an obsessional attention to detail – one could point to any moment in the performance, and the players would be able to indicate which movement of Logothetis' pen it realises.

None of these three concert events is exhausted by the event of performance; in each case some kernel of identity precedes the event. Yet each one presents a different stance with regard to the notional ideal of the work. Memories of You has the largest foot in the transcendental camp: there is sufficient information in its score that it would be recognisably the same work in another performance, despite the score's failure to specify instruments, or sequence of events. Each of the three pieces which comprise the Logothetis Project also retains a fixed score, in the sense of marks on paper, though an audibly similar family of related performances would be harder to discern on account of the interpretative openness of the scores in question. The Extended Shakuhachi manages to be both on the one hand more fixed than either of the other two, and on the other more mutable. The performance presented at Dartington College was rehearsed as a sequence of sound gestures, melodic fragments and digital patches. There is even a written score of sorts (little more than mnemonic sketches on paper: hard for anybody to decipher, even the author after a few weeks); however, all that truly remains as the kernel of identity is the idea – as noted above, by the time of the second performance even the software had been further developed.
8.1 Initial impulses

I arrived at Dartington in 1999 knowing that my own creative work had reached an impasse. This first work, *Slow Glass* (Thesis Vol. II, pp. 2 – 14), turns out to be a valedictory gesture: farewell to the tramlines and tadpoles as a focal means for score-making, with all the assumptions about transmission and identity which they entail. The next two scores (*Fall, Rain, On This Dry Earth* (Thesis Vol. II, pp. 34 – 41) and *The Hero* (Thesis Vol. II, pp. 15 – 33) in the list were composed before arrival at Dartington, but realised here; it is from these two that the lead into the future was indicated.

It is the fourth score in this collection, completed at Dartington in 2000, which marks the beginning of a new direction. *Pronouncements and Ruminations* (Thesis Vol. II, pp. 42 – 89; CD 4, track 1) went through three incarnations before settling in this form. The first, *Neumes and Epigrams*, consisted only of thirty-six visually similar pages which form the backbone (the *pronouncements*, or most of them) of the final work. I was unhappy with the epigrammatic nature of the work as it then stood; the remaining pages (the *ruminations*) gave me an opportunity to expand the musical logic. They also heightened my awareness of matters of openness – as they depended upon a degree of player autonomy – and visual design, which provided the background and the future direction of both the written thesis and of my creative output.

The experience of working with an ensemble on a concert which combined *The Hero* with two other open works (Christian Wolff's *Septet* (1964) and Cornelius Cardew's
The Tiger’s Mind (1967)) and of regular sessions with the Dartington College improvisation group – an ensemble who practised in the space between improvisation and score-realisation – led to the composition of Generative Texts, a collection of 36 text scores, each of which presented the kernel from which, by improvisation, a work might be generated in performance (Thesis Vol. II, pp. 136 – 156; CD 1).

8.2 A new methodology

It was really after this first batch of projects that I began to think of the relationship between score and performance as itself the heart of compositional activity and an awareness of this relationship as the inevitable and necessary starting point for a composer’s (for this composer’s) thoughts. It was with this in mind that I created The Madonna without Mercy (Thesis Vol. II, pp. 157 – 195), a score which is deliberately minimal – the pages are blank – but nonetheless a score, in the sense that it renders the performer essentially unfree, and engaged in a task, the presentation of a work, in the Goodmanian sense, despite the fact that the material is necessarily the performer’s own.

The themes which occupy the remainder of the works presented in the thesis originate from this point. In conversation, Frank Denyer asked whether The Madonna without Mercy could be described, with Cage’s 4’ 33”, as a dead end. Not necessarily – The Madonna without Mercy indicates the space which arises from the incommensurability of musical event and written score.

Standing in this space, alone and for a long time, three key notions became apparent:
1) As it is possible to produce music by improvisation, what does writing do to music? Music-making seems to me a pretty basic human activity, one which changes its flavour at the introduction of a score – any score that is, a plan, an instruction, whether written, or verbal.

2) Hermeneutic play as the kernel for a performed work.

3) Once the relationship between score and performance becomes so open that it is not possible to back track and (even theoretically) deduce the score from the performance which arises from it, there is a place for works which display score and performance together.

8.3 Two realisations

From here, Earle Browne's Folio looks like a masterpiece. The variety of score types provides an intelligent introduction to the matter of writing’s incursion into music. As a suite of images, it provides for that exquisite balance between player autonomy and faithful hermeneutic play (Thesis Vol. II, pp. 196 – 201; CD 4, tracks 3 – 9).

Feldman’s Intermission 6 opens up the incommensurability, the space between musical event and written score. In doing so, in the elegance of its design and indeterminacy of its duration, it allows for the possibility of a work which brings that space and the co-presentation of image and event to the fore (Thesis Vol. II, pp. 201 – 206).
8.4 Scores reflecting on performance

*Interfaces* (Thesis Vol. II, pp. 93/94 and end pocket), like the *Madonna without Mercy*, specifies no musical material. Instead, it articulates the web of interactions between players' strands of musical activity. The material, once again, is their own. It stands in the middle of the sequence of three works which began with *The Fame Space* (Thesis Vol. II pp. 90 – 92) and concluded with *Cardweb* (Thesis Vol. II, pp. 95 – 113; CD 4, track 2), which reduces the original sequence of 116 panels to a set of 70 archetypes, from which players produce their own sequence.

*Placing Studies* (Thesis Vol. 2 pp. 230 – 243, CD 5, tracks 1 – 9) is a series of nine panels from which a work might be constructed. The accompanying notes provide clear instructions as to their interpretation, allowing for a work whose sound world is quietly limited by the necessity for a certain kind of performance which is attentive to details of co-ordination, beginnings and endings.

*On the Constituted Object* (Thesis Vol. II, pp. 244 – 260) takes the same intricacies of social interplay, but applies this approach to pre-composed material – in this case Schoenberg's *Sechs Kleine Klavierstücke*, partly out of homage to Schoenberg and his work. It seemed that Schoenberg's sensitive and complex counterpoint with its juxtapositions of contrasting lines, shifts of mood and lightness of touch could be well brought into relief by the resetting of these simple pieces as a work for two pianos. Moreover, distributing the material between two players, and allowing occasional doubling of lines, produces a work that celebrates the intimacy and challenge which
distinguishes the miracle of performance from the simple platonic ideal of the work in the score, as it were.

*Four Reading Trance Documents* (Thesis Vol. II, pp. 221 – 229) provides a kit in which numerous possible modes of sight-reading are indicated. It allows each performer to create their own score and devise their own way of reading that score to a solo performance.

In *Hexagram* (Thesis Vol. II, pp. 261 – 262), as in the realisation of Feldman’s *Intermission 6*, the score was once again presented alongside the performance. Projected on the wall behind the performers, it inverted traditional relationships. It was the musical material which was occurring there and then, at the point of creation. The score was that which became secondary – reflecting on, and interpreting the original sonic material which preceded it.

### 8.5 Revisiting the site of writing

I needed to find an historical point at which writing makes a first incursion into music-making. I found it in the late ninth century in the activities of Romanus, Notker Balbulus and Tuotilo at the Monastery of St. Gall in Switzerland. This led to the creation of *Prima Fuit Rerum Confusa (Homage to Notker)* (Thesis Vol. II, pp. 298/298 and end pocket; CD 5, track 12), a combined calligraphic image and sound recording.
Remembered Fragments (Thesis Vol. II, pp. 276 – 278; CD 5, track 11) explores what happens when a minimum of pre-composed, and rehearsed, material is thrown into the site of performance.

Miyajima Gates (Thesis Vol. II, p. 264; CD 2) takes five fully notated pieces, standard repertory works from the western classical tradition, and plunges them like pillars into a sea of spontaneously improvised material. Each of the five works reflects in a different way both upon the way writing affects the musical flow, and also on features that on reflection I find manifest themselves in my own improvised material. The five works were:-

1) J. S. Bach’s Prelude and Fugue no. 21 in B flat major (BWV 865/66), for its manifestly written counterpoint, and its toccata-like prelude,

2) Morton Feldman’s Extensions 3 (1952), for its implicit stress upon touch and the straining out of a work from a minimum of musical material,

3) Rachmaninov’s Prelude in B major (Op. 32 No. 11), for the touch and placing of its chords,

4) Luigi Dallapiccola’s Quaderno Musical Di Annalibera, No. 8: Ritmi (1952), for the violent angularity of its melodic writing and

5) John Cage’s Two Pieces for Solo Piano (1946), on account of their gamut process, certain chords rotated in time.
8.6 Reading as performance (a visual document)

*Waterdrawing* (DVD, track 1) was a collaboration with the filmmaker and visual artist, Jenni Wittman. I read the almost abstract but constantly changing image that she had made from film footage of moving water as if it were a score of some kind.

8.7 Towards a hermeneutic aesthetic

Perhaps it is only the continuous pressure of the avant-garde project – that each generation should renew the artistic tradition by bringing to the fore what its predecessors had neglected in order to underwrite both the past and the new work as part of a continuing, living cultural trajectory – which brings these issues to the fore at this time. Ric Royer, following the arguments put forward by Philip Auslander in his book *Liveness*, however, in *Just Do It: The Poetics of the Open Score*, suggests that this contemporary focus can be just as well understood as a mirror of the times we are living in: ‘in this society that is both technologically advanced and overly concerned with an efficiency that machines can provide, the human element of interpretation becomes charged with greater significance’ (Royer 2005, p. 69).

Why then work from a score at all?

I find that music created by improvisation can have the most magical moments, but dreadful half hours. And that the world of working from scores can sustain the interest for long periods, but can also have such deadening woodenness and inauthenticity. Working from an open score has the possibility of steering between Scylla and
Charybdis. It creates a format within which the performer’s own musicality is not submerged, yet simultaneously the interpretative play which goes into the preparation of an open score ensures that the music which results possesses identity. That is, (1) such a work arrives at a point where it carries its own distinction within its own local environment of adjacent works and (2) the event, rather than drifting formlessly between moments of magic, possesses the formal charms of narrative, and internally articulated identity.

I recall the comment of the rock star performer David Byrne “The reason we put words to the songs is so that you can listen to the music for longer”\textsuperscript{47}. One can extend this truism – the reason one composes form is to enable the listener to attend to the noise for longer. One could almost make that a rule of thumb for distinguishing noise from music – perhaps noise is sound that one cannot listen to for very long, whereas music is sound that keeps the willing attention.

The score ultimately acts as defender of the moment of performance as a ‘work’ – the event as more than mere doing, but as realisation of a task. Why is this important? I think that this issue has two sides and both are reflections of Gadamer’s stress upon the ideal of fidelity. One of them is to do with the display of “skill”: skill being no more than the outside show of a practice of dedication, of fidelity to the work and its materials. The other is to do with identity: fidelity to a work signifies that a work is taking place. The arguments presented in chapter 2 sustain the notion that a score sustains the identity of a work in two ways: it creates a boundary, albeit a potentially hazy one, between events which are not the work and those which are. Secondly, it

\textsuperscript{47} From the liner notes to \textit{More Songs about Buildings and Food (Talking Heads 1987)}
sustains the idea of the work across time and space, so that some events may be
grouped together as belonging to the same family – the family of realisations of the
prescribed work.

It is this thorny issue of fidelity which ultimately keep bringing me back to the world
of scored works. In its sacred space it holds fast for us some of our more vulnerable
cultural and thus by necessity personal issues – the issues of identity, authenticity,
fidelity and annihilation. Composed music as an art form is able to reflect on the issue
of fidelity in so many ways, through its variety of possible scorings, and its range of
possible responses to scoring, that it is the ideal forum for reflecting on these matters.

One might object that the tradition of ‘closed’ musical works which we have inherited
in the Western tradition has provided such marvels and such a reliable source of
aesthetic experience that it is unnecessary to look to its margins. That, for instance,
using the score as a site through which the performer might explore their own creative
needs leaves the concerns of the listener at the door. When the contract is centrally
one which lies between composer and audience, with performer as intermediary, it at
least keeps the listener near the decision making process (if we don’t like a work, it is
unlikely to reproduce itself much on the concert platform). Moreover, when works
can be ‘pre-known’ the listener has a good idea what they might get and can trust that
they will not be much shocked or disappointed with the result.

The rejoinder to this is twofold.
Firstly that as music expands to include a broader and broader range of sound, the problem of notation increases proportionately until, it seems, notation can no longer contain all that artists may wish to make sound. Secondly, that the refocusing of the work on the centrality of the performer is not an abnegation of responsibility for the quality of the event but a transposition of it, from composer to composer and performers in tandem. That an ‘open’ approach to notation leaves the concerns of the listener at the door is certainly a fair criticism: there is a reasonable certainty of success with a composer led work that has succeeded before; in works that open out the dialogue between performance and score there is more risk, as the variation in performance may be greater (not simply a variation in success/failure quality) – the onus is placed more definitely on the performers who realise the work. It is for them to remember the audience.

Where finally, if the work is no longer, to paraphrase Hoffmann ‘sealed into the score by the composer using magical power’48, if the performers interpretative acts have become so significant that even the composer’s closest supporters cannot recognise the work in its realisation, has the work gone to? In its opening out, it can no longer be identified with a clear sense of singularity; the work is no longer exhausted by the event of the realisation of a score. Instead, the event becomes a site where two streams meet: the composer’s oeuvre, as maker of scores, and the performer/interpreter’s, as a sequence of performances played through the lens of an idiomatic style.

48 ‘The genuine artist lives only for the work, which he understands as the composer understood it and which he now performs. He does not make his personality count in any way. All his thoughts and actions are directed towards bringing into being all the wonderful, enchanting pictures and impressions the composer sealed in his work with magical power.’ (E. T. A. Hoffmann, Beethovens Instrumentalmusik, quoted in Goehr 2002, p. 4)
The work expands to include both the score and the moment of performance. So the layout of the score, even if unknown to the listener, remains integral to the work. Not simply because the work as a whole has expanded, but because the identity of the work is no longer closed — it is no longer a singular identity, transmitted, but an expanded field, a site of hermeneutic play.
Appendix 1
Bibliography


Appendix 2
Works Cited

Recordings


Scores

Appendix 3
Anestis Logothetis: Principal Works 1944 – 1994

1944 – 1959 more than fifty works in traditional notation

1959 Struktur-Textur-Spiegel-Spiel

1960 5 Porträts der Liebe, ballet: Katarakt I + II, Verkettungen I + II, Cycloide I + II + III
1960 Fantasmata
1960 Katalysator
1960 Agglomeration for violin and orchestra
1960 Koordination for five orchestral groups

1961 Kulmination I + II + III
1961 Interpolation
1961 Meditation
1961 Tonbündel Quantitativ, Tonbündel Qualitativ
1961 Tonclusters
1961 Impulse Quantitativ, Impulse Qualitativ
1961 7 Kooptation

1962 Kleine Parallaxe
1962 Vibration
1962 Mäandros for orchestra

1963 Odyssee, ballet
1963 Dynapolis for orchestra

1964 Kentra
1964 Dispersion
1964 Ichneutonologia
1964 Cuneiformi
1964 Seismographie I, Seismographie II

1965 Labyrintos
1965 Reversible Bijunction
1965 Desmotropie for clarinet and piano
1965 Orbitals
1965 Spiralenquintett
1965 Entropie
1965 Enoseis for solo and orchestra
1965 Diffusion for solo and orchestra
1965 Linienmodulationen for solo and orchestra
1965 Optionen

171
1966 Integration for orchestral groups
1966 Diptychon for piano with or without orchestra
1966 Enklaven for orchestra and soloists

1967 Karmadharmadrama for puppet choir (?)
1967 Oasi for orchestral groups
1967 Desmotropie for orchestra
1967 Emanationen
1967 Kollisionen
1967 Syrrhoi
1967 Polychronon
1967 Rondo
1967 Rondeau Dynamique
1967 Starte

1968 Evektionen
1968 Sublimationen
1968 Konvektionsströme
1968 Tabulaturen I, II, III, IV, V for piano
1968 Styx for string orchestra

1969 Zonen for solo and orchestra
1969 Anastasis music drama for radio or stage
1969 Mensuren for chamber orchestra

1970 Komplementäres for two orchestral groups
1970 Mantratellurium music drama for radio
1970 Nokrologlog short radio play for a speaker
1970 Styxische Flüsse for choir and orchestra

1971 Kybernetikon music drama for radio
1971 Fusion for any performers

1972 Musickfontäne for Robert Moran
1972 Klangräume I + II + III, for orchestral groups
1972 Wellen for orchestra
1972 Volant for orchestra
1972 Kerbtierparty music drama for radio
1972 Sommervögel oder Schmetterling music drama for radio

1973 Emanation for clarinet and electronic instruments

1974 – 1975 Menetekel or Das Bombengeschäft music drama for radio

1975 Appolonion for Konstantinos Doxiadis
1975 Ghia Tin Ora (Pour l'Heure) for orchestra

1976 Geomusik 76 for solo and orchestra
1976 Klanfelder und Arabeske for piano with or without orchestra
1976 Im Gespinst – Geh! Spinnst?! concert/radio play
1976 – 1978 Daidalia or Das Leben Einer Theorie multimedia speech-opera
1978 Globus for vermeulenflöte or other solo instrument with or without orchestra
1978 Hohelied for organ and voice

1979 Rondo for orchestra
1979 Chor II + III for mixed choir

1980 Vor!Stell!Unk! music drama for radio
1980 Bienen' Binom music drama for radio

1981 Wellenformen 1981 computer-composition
1981 Brunnenburg-Hochzeit-Symphonietten for chamber ensemble
1981 Meridiane I und Breitengrade for orchestra and soloists

1982 - 1984 Aus Welchem Material ist der Stein von Sisyphos multimedia opera

1985 Doppelspirale
1985 Zentrifugales in Zeitlupe

1986 Paysage du Temps

1987 Kyklika

1990 Bagatelle for clarinet and tuba

1992 Kassandra Duo for harp and bass clarinet