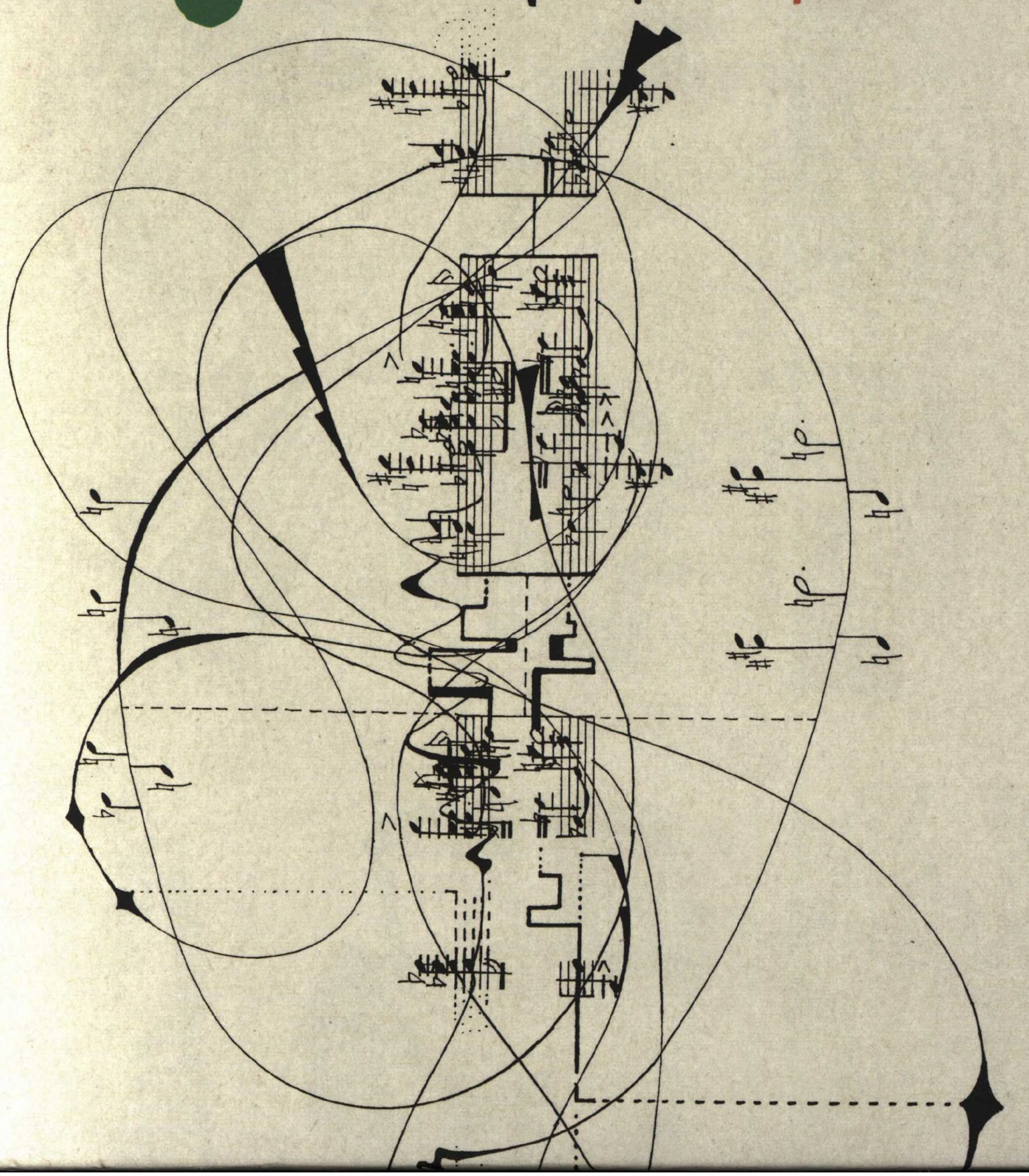
BY THERESA SAUER

NOTATIONS 121



Notations 21 is dedicated to my daughter, Christine Tisano Washburn. Without her hard work, perseverance, and joy, this project would not have occurred.

I also dedicate this book to all of the composers who made it possible, whose insight and genius have kept the innovative spirit of John Cage alive.

Great thanks also belong to so many of the other amazing contributors to the *Notations 21* project: Mark Batty Publisher, Buzz Poole, Christopher D Salyers, Nina Colosi and the Chelsea Art Museum, Alison Knowles, Alana Esposito, Eli Peterson, Sylvia Smith and Stuart Saunders Smith, David Badagnani, Aida Garcia-Cole, Daniela Hofer, Regula Ruegg, Paul Konye, Jennifer Ward, Kate Maxwell, Zoe Knight, Aygun Lausch, Kathinka Pasveer, Keren Rosenbaum, Carl Bergstroem-Neilsen, David Schidlowsky, Una-Frances Clarke, Jon Szanto, Russ Rocknak, Tony Martin, David Evan Jones, Pui Lee Chiu, Tom Hall, Tone Mo, Anne Risager, Bernhard Woehrlin, Jef Chippewa, Paul Schick, Joel Chadabe, Todd Vunderink, Julia Logothetis, Eleanor Rufty Carlyon, Morgan O'Hara, Wendy Burch, Jeffrey Noonan, Earl Batchelor, Mimi Johnson, and especially my family, and Brian Hulten for his never-ending support and encouragement.

NOTATIONS

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THERESA SAUER

MARK
BATTY
PUBLISHER

Notations 21
by Theresa Sauer
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Art Direction & Design: Michael Perry
Design: Katharina Reidy
Design Intern: David Maron
Production Director: Christopher D Salyers
Editing: Buzz Poole
Typefaces used: Locator by Eric Olson & Hussy by Damien Correll

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Library of Congress Control # 2007937348

Printed and bound in China through Asia Pacific Offset

10 9 8 7 6 5 4 3 2 1 First edition

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This edition © 2009
Mark Batty Publisher
36 West 37th Street, Suite 409
New York, NY 10018
www.markbattypublisher.com

ISBN: 978-0-9795546-4-3

Distributed outside North America by:
Thames & Hudson Ltd
181A High Holborn
London WC1V 7QX
United Kingdom
Tel: 00 44 20 7845 5000
Fax: 00 44 20 7845 5055
www.thameshudson.co.uk

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PREFACE

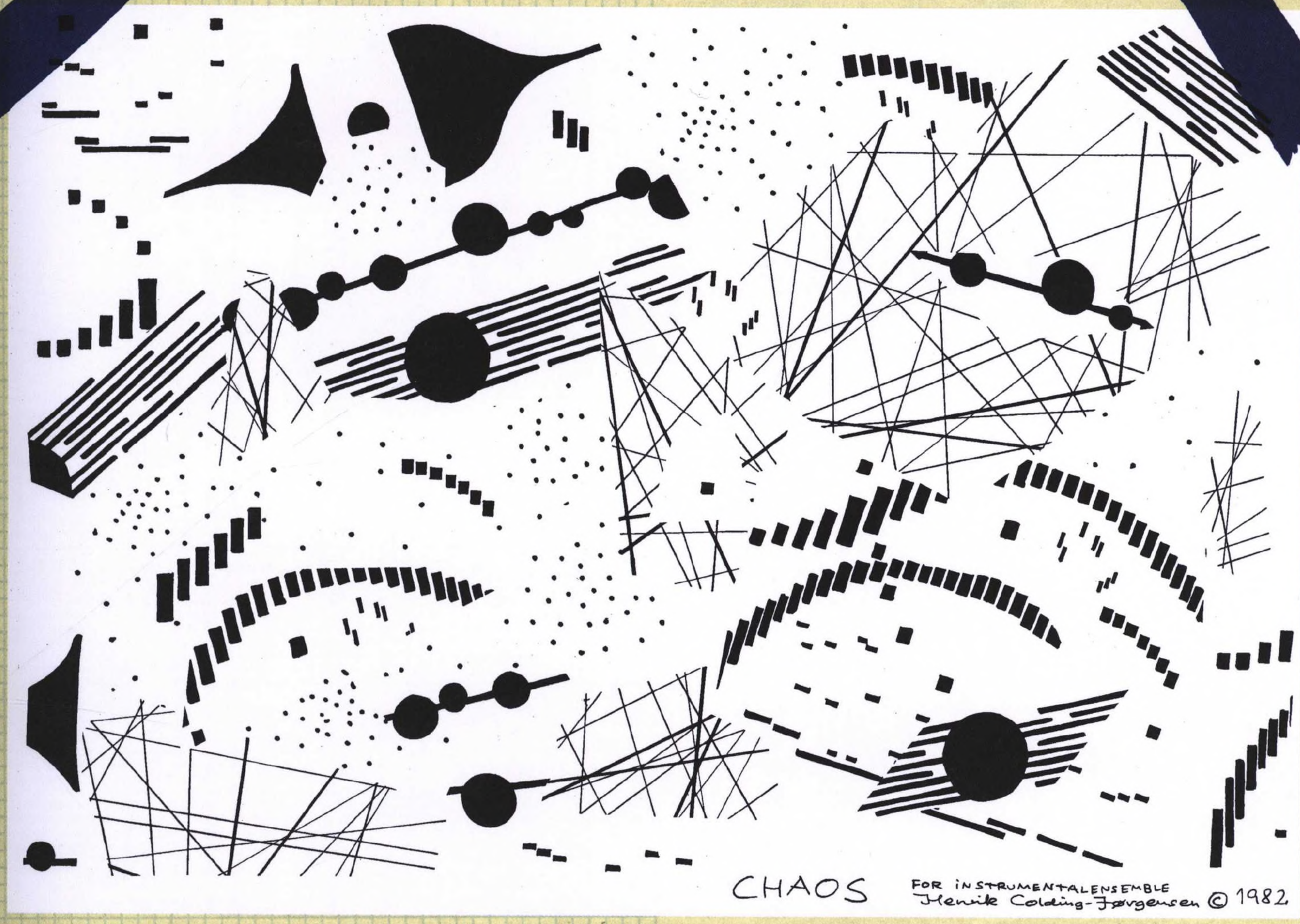
Much like John Cage in his book *Notations* (1968), I find it necessary to explain the nature of this book and its layout. This book also hopes to explore the new developments in musical notation just as Cage's book did. Every score/image contained within these two covers was submitted to me by composers, publishers, or families of composers for the explicit purpose of coexisting in this anthology, arranged not by type of music but alphabetically. Composers were asked to contribute partial samplings of one or more compositions. It was their option to include a statement or description with their composition for the reader.

Scores without composer statements, with no text, just titles to accompany them, truly stand on their own as works of aesthetic beauty. In the true spirit of Cage, I collected works of creative freedom, and indeed the possible perceived randomness of the collection has a far greater visual interest and cohesiveness truly furthering Cage's initial concept of showcasing these extraordinary compositions.

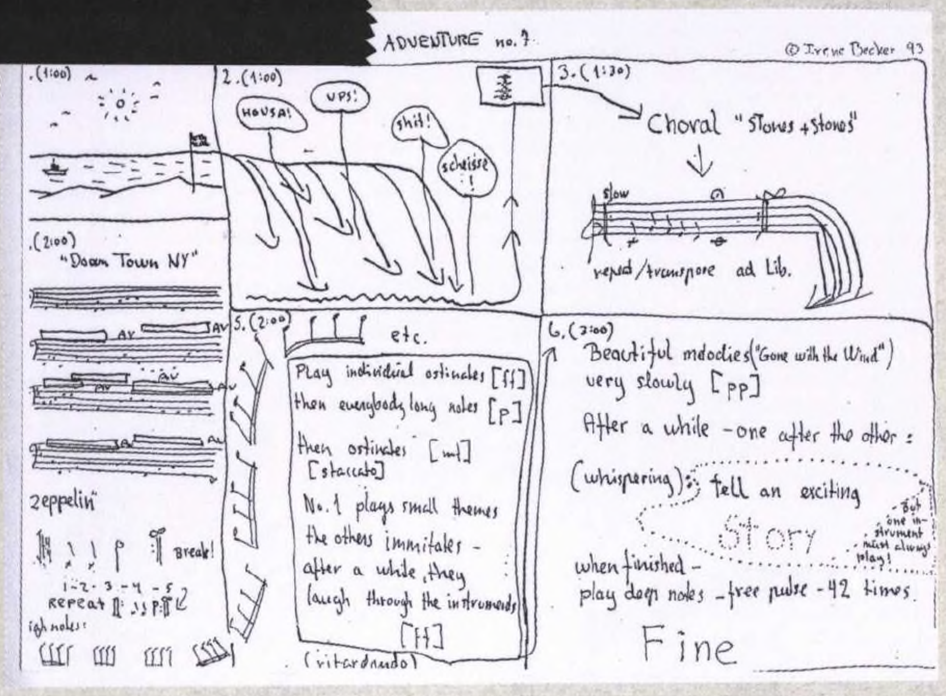
Some of the participating composers were commissioned to write essays for *Notations 21*. They were asked to use this book as an open forum, and no length or topic was specified, except that it relate somehow to notation, contemporary music, graphic scores, or the compositional process. I received a wealth of documents: all completely fascinating and unique, true testaments to the artists that they are.

I sincerely hope that this book motivates the reader to further research contemporary music and the artists that compose it, to seek out their recordings, attend performances, and support the arts in education. We live in an incredible time in music history—here is only a small sampling of the evidence.

Theresa Sauer
2008



Henrik Colding-Jørgensen; *Chaos*. For instrumental ensemble. Used by permission of Henrik Colding-Jørgensen, © 1982.



FOREWORD

The music history taught to Western scholars typically impresses the idea that creativity and innovation in composing have held infinite possibilities while confined to the clef and staff of traditional notation. However, in the 20th century, particularly in the post-atomic age, new notational forms began to emerge, and composers were challenging the idea of the score. Earle Brown, one of these first innovators, described his understanding of these new notational developments in the following way: "There must be a fixed (even flexible) sound content, to establish the character of the work, in order to be called 'open' or 'available' form. We recognize people regardless of what they are doing or saying or how they are dressed if their basic identity has been established as a constant but flexible function of being alive." [1] In other words, the identity of notation comes from its purpose for the creation of music, a phenomenon that can allow for spectacular variations in musical scores. I have examined this phenomenon and the impact it has had on performance, as well as our collective consciousness as consumers of art and music. My own research has led me in many directions, to many different composers, and their varied styles; the results of this research comprise *Notations 21*.

Composers from over fifty nations are represented in this book, from Denmark to Korea, from Uganda to Mexico. Many are world travelers, truly cosmopolitan in their understanding and appreciation of the world's cultures; their music reflects both their existence in the modern global village and their own heritage. No longer limited by the knowledge of their teachers, a composer today can learn from or collaborate with a contemporary who lives half a world away. Like R. Murray Schafer suggests, people "echo the soundscape in language and music," [2] and now, the soundscape has expanded to include the entire globe.

The backgrounds and personal histories of the composers also imprint themselves upon the compositions they create. Many composers rely on their scientific minds, using the latest computer technologies to expand the definitions of music. Others come from the improvisational traditions of jazz. Some are inspired by modern pop culture: films, rock music, even comic books. They may be visual artists looking to create music, or composers looking to create visual art. Poets and avant-garde performance artists seek to translate their unique messages into visible sound. For some, their scores are products of their quest to use music as therapy. There are musicologists, educated by the greatest schools or self-taught, whose analyses of the most ancient (or most recent) musical developments reveal themselves in their creations. Genius takes many forms, especially, so it seems, in the production of innovative scores.

Indeed, composers who choose to make innovations in the field of notation or graphic scores represent various compositional ideals, as reflected in their philosophies. Their philosophies encompass the desire to improve communication amongst composers, performers, and audiences, to develop a wholly different language, to encourage creative improvisation, and to challenge the way we understand music and sound. Some seek to create from the viewpoint of function, and others from the viewpoint of aesthetics. Still others seek to unlock the secrets of the human mind, the spirit, or the natural world through the forms of their music—to heal, and to enlighten. These many fascinating philosophies result in an amazing variety of scores and notational styles. Not only do they look different from the scores of traditional Western notation, but they are also performed differently with different mindsets, different structures, or even different sounds. To quote Sylvia Smith, the passionate curator of the long-running Scribing Sound exhibition of music notations (1952-1984): "Even scores that may appear similar may actually be extremely different in their notative function as different notative systems can use the same symbols in much the same way that different languages can use some

of the same letters in their alphabets." [3]

With the development of graphic scores and innovative notation comes an expansion of artistic freedom. Very frequently this freedom leads to new developments in the field of improvisation: to musical forms that are not static and predictable in nature. To quote John Cage on improvisation: "My favorite music is the music I haven't yet heard. I don't hear the music I write: I write in order to hear the music I have yet heard. We are living in a period in which many people have changed their mind about what the use of music is or could be for them." [4] Interestingly, this greater freedom of expression can reveal so much about the composer as an artist and individual. As you may note as you experience each composer's score, some compositions are given a detailed instrumentation, some are noted as variable instrumentation, and some do not specify instrumentation at all; each composer was asked about instrumentation, and many preferred to allow for flexibility, not only in terms of improvisation, but the performers themselves.

It has been noteworthy for me in my research for *Notations 21* the ways in which I have come to understand the work of these composers. Like the ethnomusicologist Steven Feld, I have found myself faced with not only what influences composition, but humanity itself. Feld describes eloquently this experience: "We jump off that cliff to study how human experiential patterns and practices construct habits, systems of belief, knowledge, and action we call culture. And we study it everywhere and anywhere we can. Our ultimate concern is with people, with adequately and evocatively representing their experiential worlds, their voices, their humanity." [5] As neither the individual nor the environment is a static entity, music and art become also fluid, changing under different circumstances, developing organically in new ways, both visual and aural. These changes are, in the opinion of Cage, "necessary in order to keep minds flexible. Otherwise, the mind becomes paralyzed..." [6] The innovators presented herein have maintained the flexibility of their minds, in keeping with the changes we witness in our global culture.

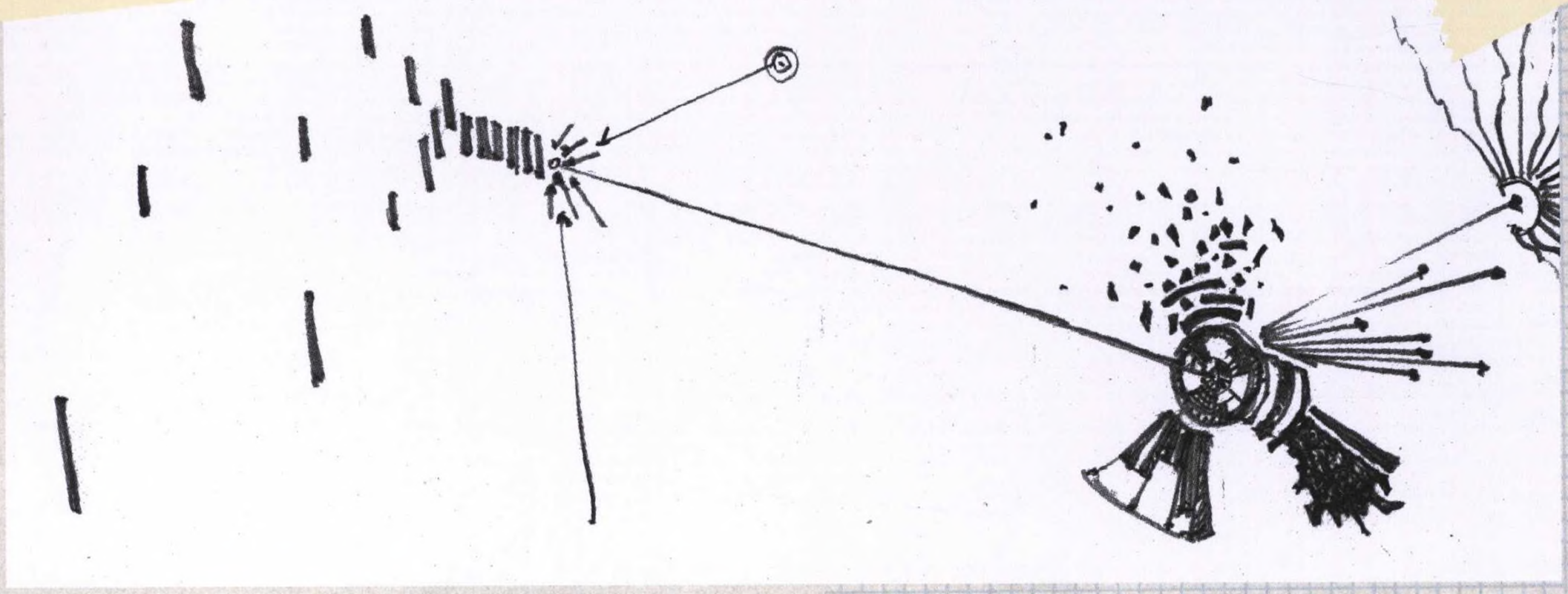
When I began to contact composers to participate in *Notations 21*, I quickly discovered that Cage's *Notations* from 1968 was an influential and inspirational force in their lives. The encouragement I received from all of the composers with whom I communicated was truly remarkable: it was time for another collection. My endeavor is not only to introduce people to the fascinating world of innovative notation and graphic scores, but also to provide a forum for composers, a new way of bringing awareness of their compositions and philosophies to the forefront of the musical collective consciousness, aided by new technologies and media not available to Cage in the 1960s.

I would like so much to thank all of the composers who participated in *Notations 21*. I owe everything to you and your endless supplies of talent. This book was completed in an impossibly short few months, an exhilarating whirlwind of discovery, contact, collection, and creation, in order to be in print for the 40th anniversary of *Notations*, and I could not have managed without your patience and cooperation. However, since this project was completed so quickly, I regret not being able to contact and include more composers. I hope to create more editions of graphic scores and innovative notation, now the focus of my life's work, and humbly request that, if you are a composer who is not included in this book, to please accept my apology and to please submit your scores to me. The publication of this book is not the end of the *Notations 21* project, but just a beginning.

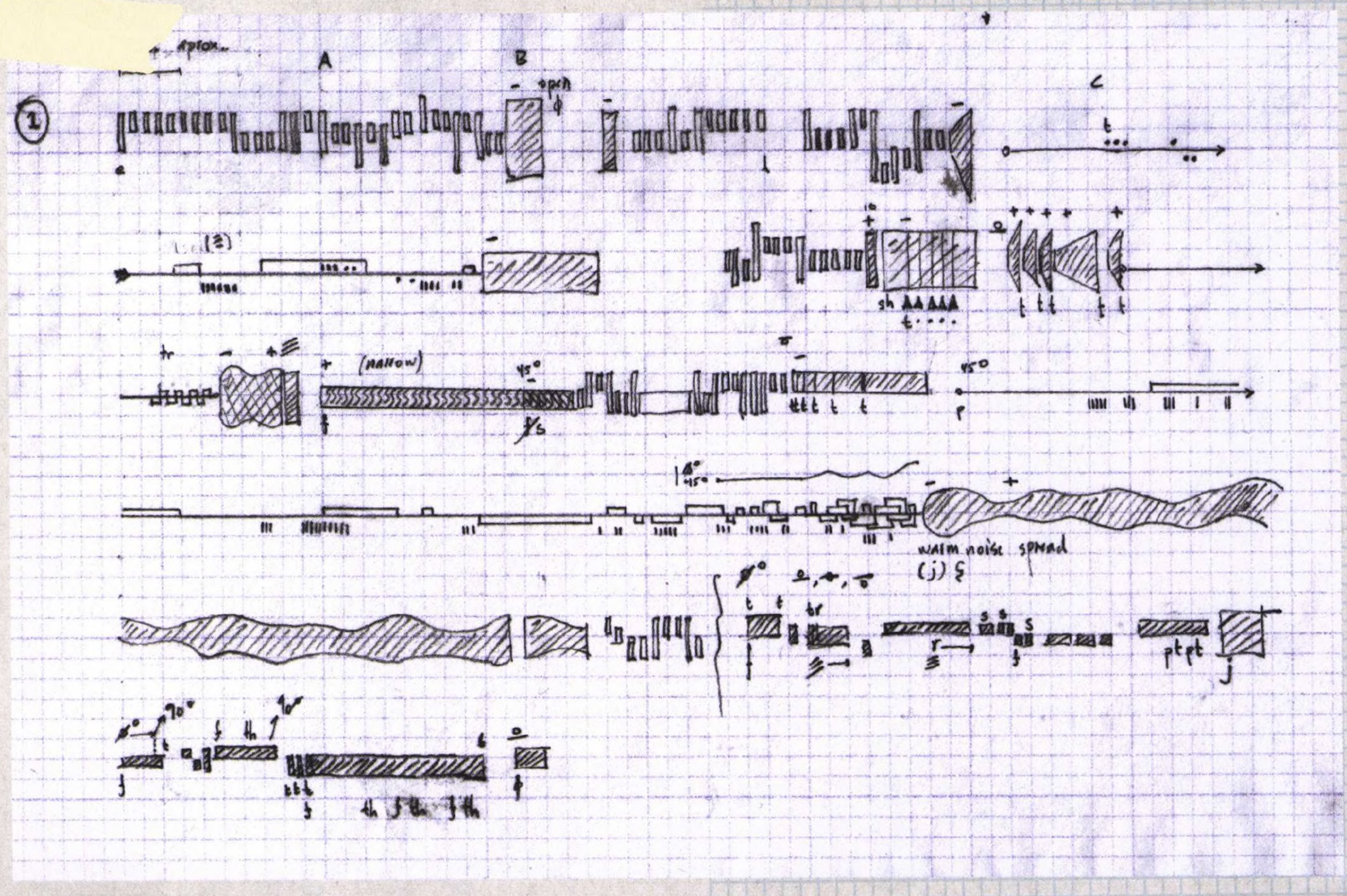
1 Brown, Earle, and David Ryan, on Brown's Available Forms 1. Contemporary Music Making for Amateurs (CoMA), 2006.
2 Schafer, R. Murray. The Tuning of the World. Knopf, 1977.
3 Smith, Sylvia. "An Introduction to the Scribing Sounds Exhibit."
4 Cage, John. John Cage, Anarchic Harmony: Ein Buch Der Frankfurt Feste '92/Alte Oper Frankfurt.
Cage, John, Stefan Schadler and Walter Zimmermann. Schott, 1992.
5 Feld, Steven. "From Ethnomusicology to Echo-Muse-Ecology: Reading R. Murray Schafer in the Papua New Guinea Rainforest."
The Soundscape Newsletter, Number 08, June, 1994.
6 Cage, John, and Peter Gena. "After Antiquity: John Cage in conversation with Peter Gena." Major Byrne's New Music America, 1982.

TO STANDARDIZE NOTATION IS TO STANDARDIZE PATTERNS OF THOUGHT AND THE PARAMETERS OF CREATIVITY. OUR PRESENT ABUNDANCE OF NOTATIONS IS AS IT SHOULD BE. IT MAKES OUR DIFFERENCES MORE CLEAR.

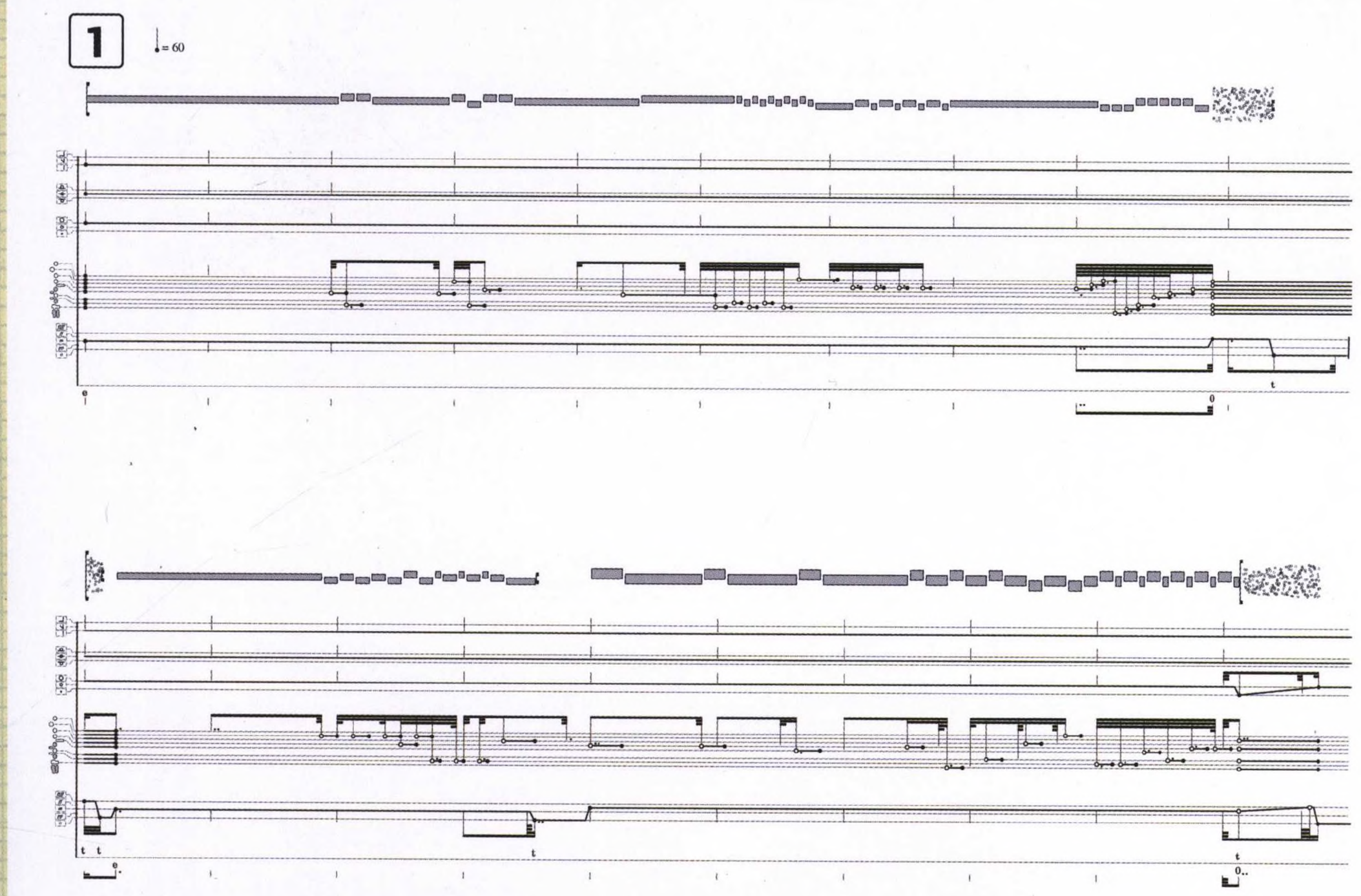
– SYLVIA SMITH



Work sketch by Victor Adan.



Work sketch by Victor Adan.



Victor Adan; *La espiral quebrada* [*Multiplexor III*]. For amplified prepared flute. Used by permission of Victor Adan, © 2006.

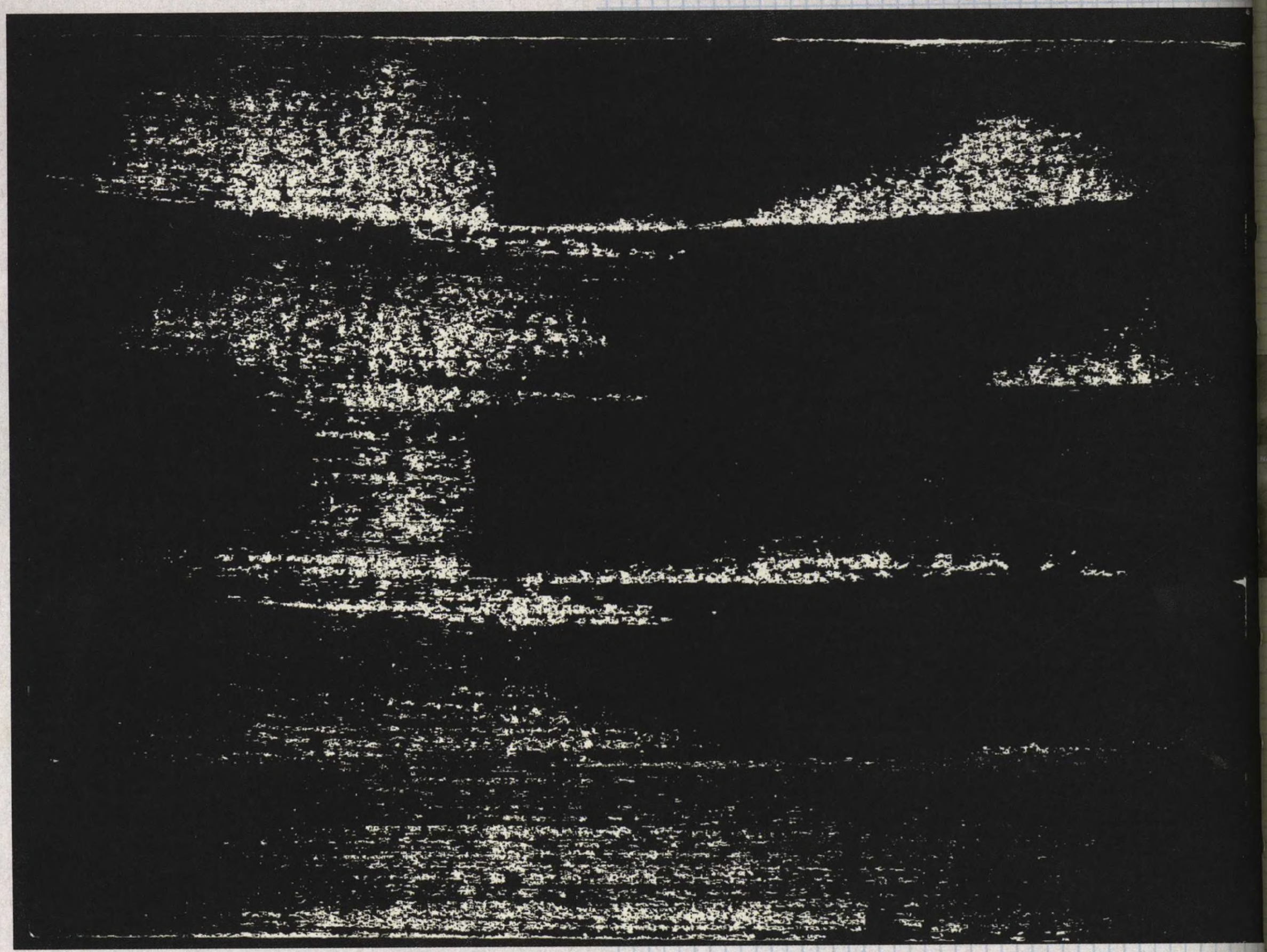
Multiplexor is really two scores in one. The main and most important score is, like a traditional score, an analytical separation of the relevant musical parameters. The second score, located always above the first, is a graphical synthesis of the musical parameters involved. It is not a substitute for the first, but rather an aid, a complement. Thus, the analytical score should be followed with the greatest precision. This second score is intended to fulfill two purposes:

1. To serve as a kind of "aerial map," useful as an aid in understanding the overall structure of the piece during its study.

2. To serve as an analogue, although very coarse and almost cartoonish, of the general sounds resulting from the execution of the analytical score.

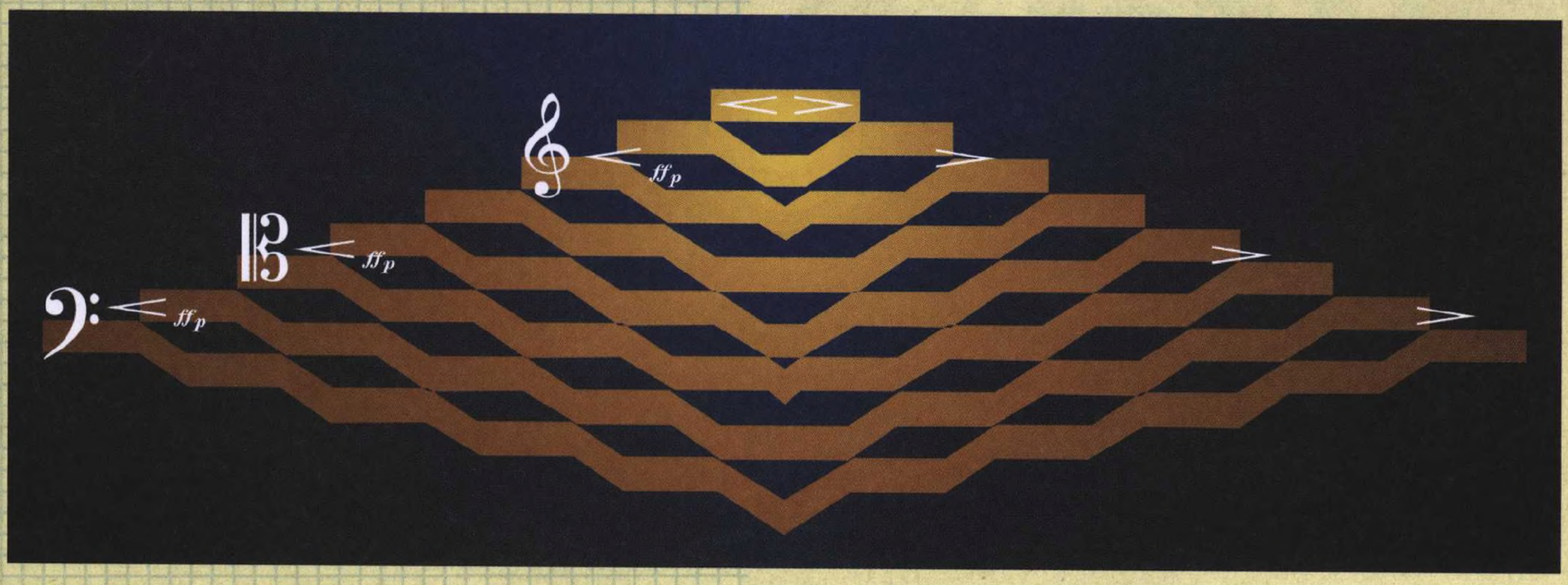
I leave to the performer the task of discovering the correspondences between the sounds produced and the various graphical icons.

BETH ANDERSON

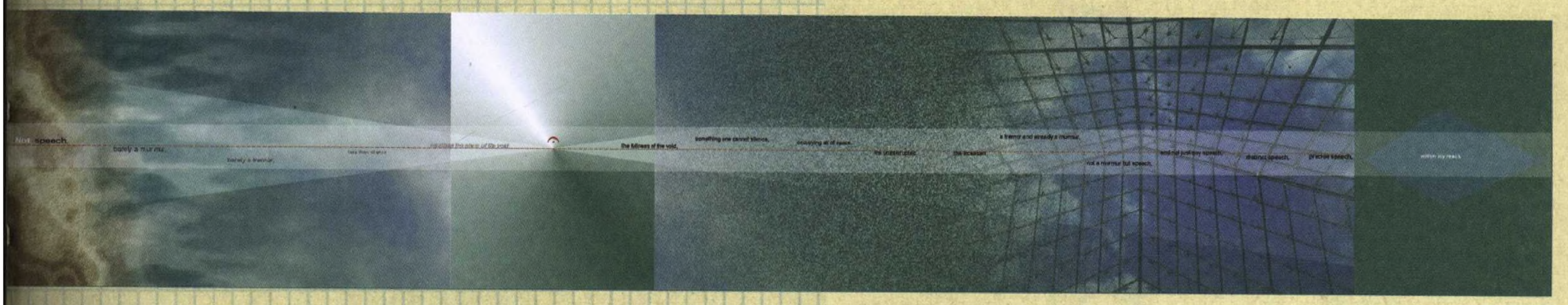


Beth Anderson; *Tower of Power*. For organ and quad tape. Used by permission of Beth Anderson, © 1973.

Tower of Power: Hold as many keys and pedals down as possible, using only your body, at as loud an amplitude as possible, using both your ears and your equipment to decide, for a minimum of five minutes, using yourself and your audience to decide, changing timbres a minimum of five times, without letting any notes up, avoiding any sharp contrasts, allowing your organ to dictate the possibilities. Four rehearsals of the piece are to be taped and played back in exact synchronization with the performance through four speakers placed symmetrically around the church, taking into consideration the origination of the organ sound. All should blend. Prepare your spirit, mind, ears, body, family, but avoid any discussion of the sound.



Kerry John Andrews; *The Weight* (1995/7). For large ensemble. Used by permission of Kerry John Andrews, © 1997.



Kerry John Andrews; *Versus* (1997). For solo voice and piano. Used by permission of Kerry John Andrews, © 1997.

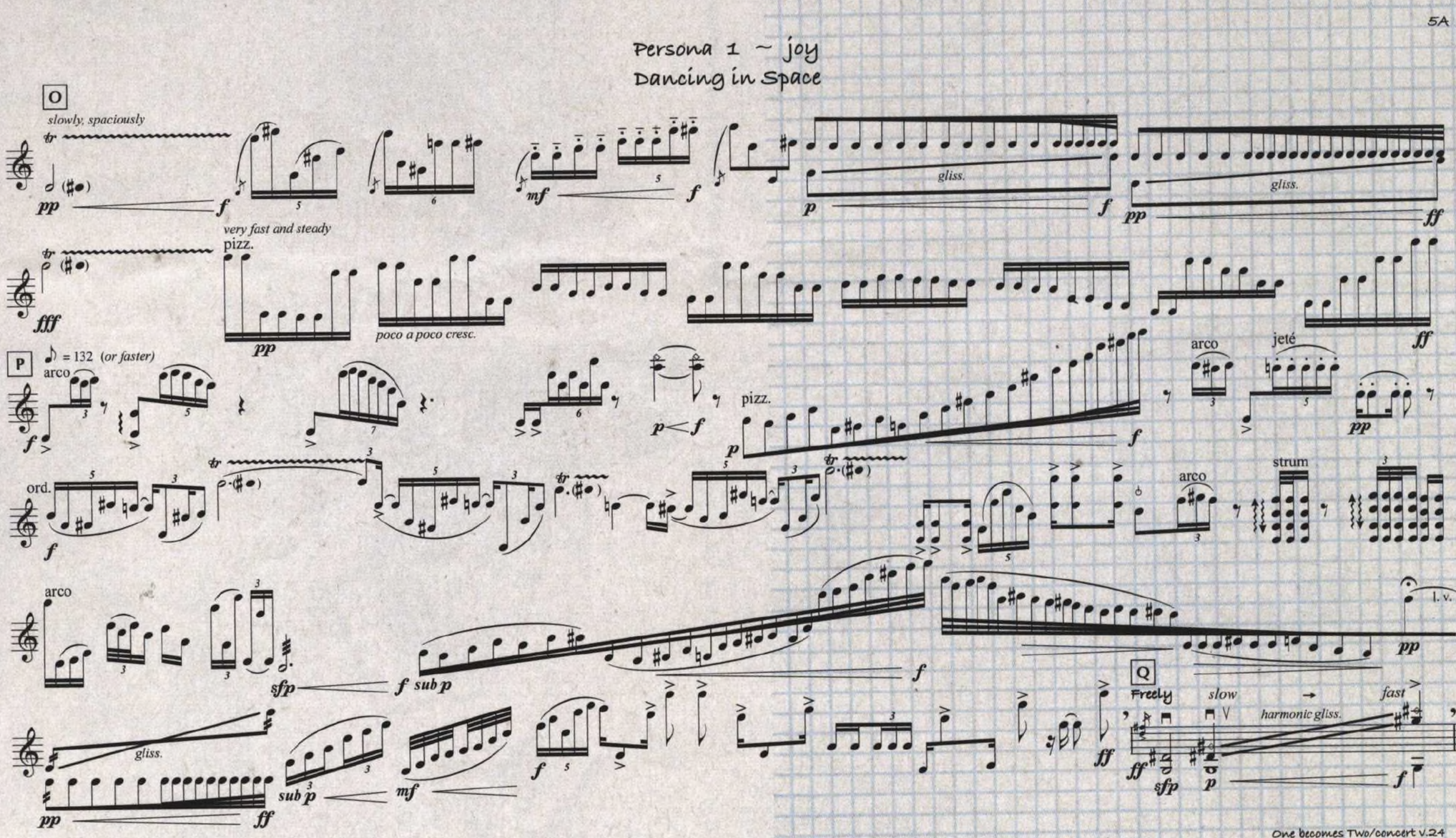
The Weight and Versus: As a visual artist I became interested in listening to New music, finding that it liberated ways of internally visualizing images. In the mid-1990s I started to compose music to understand what that process was doing and how it worked. Since then my work has explored the similarities and differences between visual, aural, and textual forms, what is inherent to each specific medium and what is transferable, or shared.

The graphic scores that I have produced have considered several lines of enquiry. They have looked at the ideas of linear time, stasis, and a more visually based field form. They have also explored the idea of the sound object as an image of the whole sound piece. The stand-alone visual images I make have taken their form from music mixed with textual and visual forms. These ideas have also been developed as sound installations.

My graphic scores have sometimes related to images, mostly digital prints. They range from modified traditional scores (for large ensemble, solo instrument, and recorded sound) to images with text (for voice) and a more directly diagrammatic place in between (large ensemble, voices, and recorded sound), though I essentially consider all my works to be diagrams.

Versus was created as an image as well as a score for voice (which included a separate traditionally notated piano part). I was intrigued by Maurice Blanchot's writing style where, as Foucault says, his "fictions are, rather than the images themselves, their transformation, displacement, and neutral interstices." *Versus* uses a line from *Celui qui ne m'accomagnait pas* which, though a sentence, seems to be a static thought becoming; words layered on top of each other, rather than a descriptive passage. It is this tension between onward movement and non-linear, multi-directional, layered "narratives" and how that reflects on our sense of time and place that underlies much of my work.

STEVE ANTOSCA



Steve Antosca; "Persona 1 ~ Joy: Dancing in Space" from the major work *One Becomes Two*. For violin, viola, or cello.

Used by permission of Steve Antosca, © 2007.

One Becomes Two was inspired by a passage in C.G. Jung's writings where he symbolically describes the process of transformation:

> *... when the bud unfolds and from the lesser the greater emerges, then One becomes Two and the greater figure, which one always was but which remained invisible, appears with the force of a revelation.*

The metaphor of the bud opening into a flower has always fascinated me. Jung's depiction of the process in relation to transformation and his incorporation of Nietzsche's phrase "One becomes Two" is captivating.

In *One Becomes Two* the expansion of the bud into flower is represented by the flowing of the melodic line from a single voice to a second voice, first making an appearance as a pedal tone, then as double stops and eventually as multiple stops. Ultimately this leads to the presentation of the dual paths on page 4 of the score. The violinist must choose to perform one of these paths. Within those paths, each passage has a distinct set of non-determinate performance choices.

These non-determinate techniques used in *One Becomes Two* provide an opportunity for the performer to contribute to the outcome of the piece by making some of the rhythmic and pitch choices in the composition.

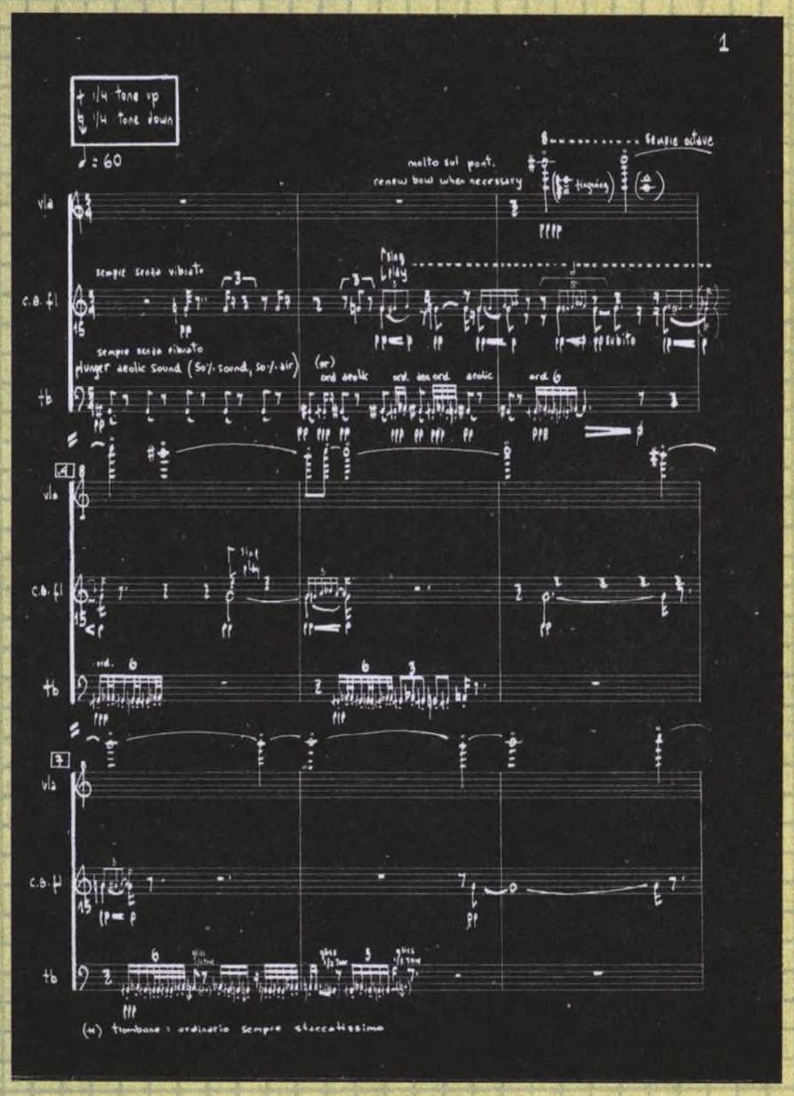
The element of indeterminacy continues in the piece when, at the end of this section, the performer must choose among four personalities: joy, passion, duality and enduring spirit, each with its own unique performance characteristics. In the "Joy" section, sub-titled "Dancing in Space," indeterminacy is created by notating specific rhythms, gestures, and dynamics, but with no pitch material, only pitch gesture. This is created by simply notating the passage without staff lines; leaving the performer to replicate the pitch gestures assures that the indeterminacy is guided by the emotion of the moment. In this way, no two performances of the piece will be the same.

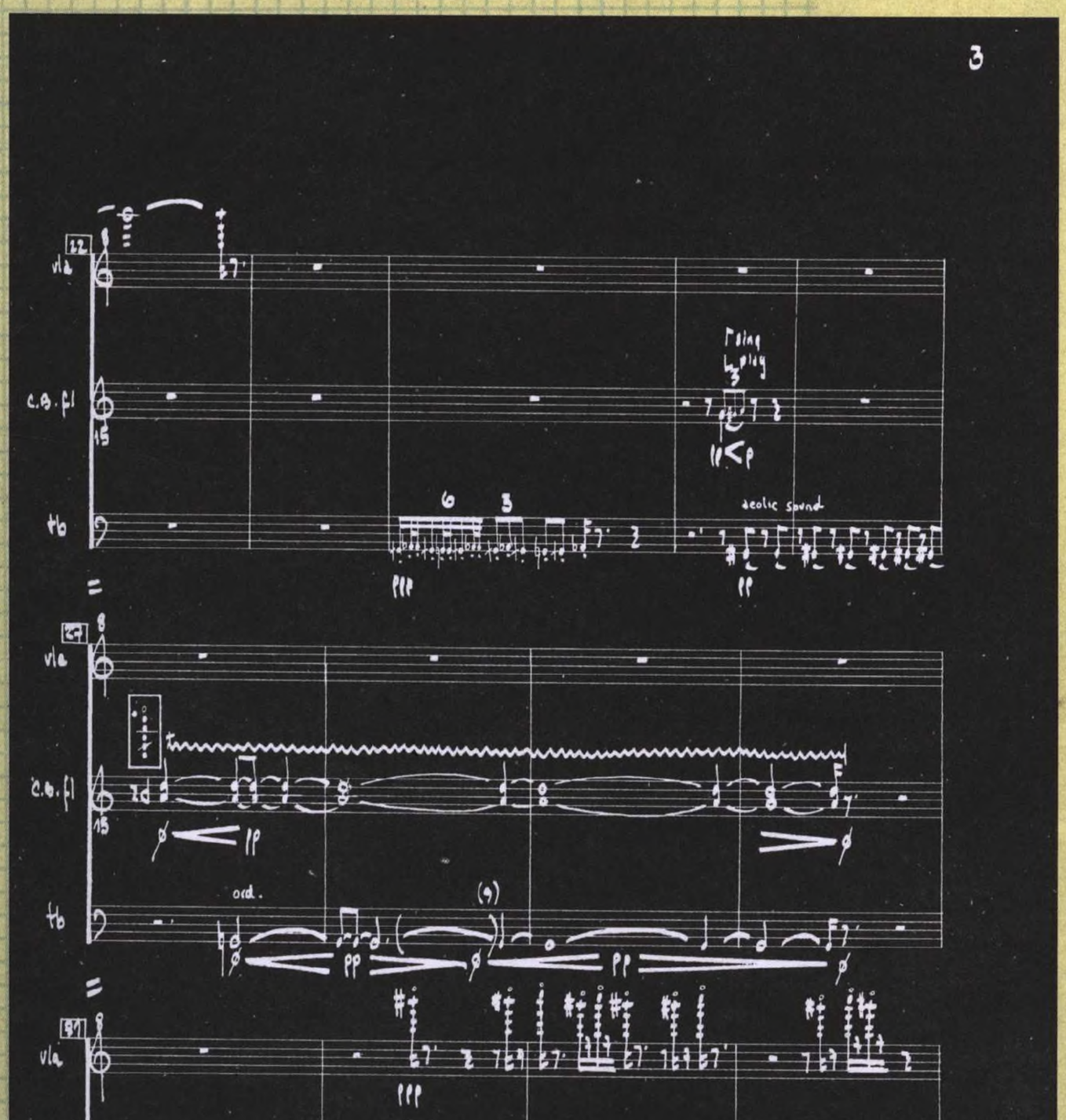
CECILIA ARDITTO

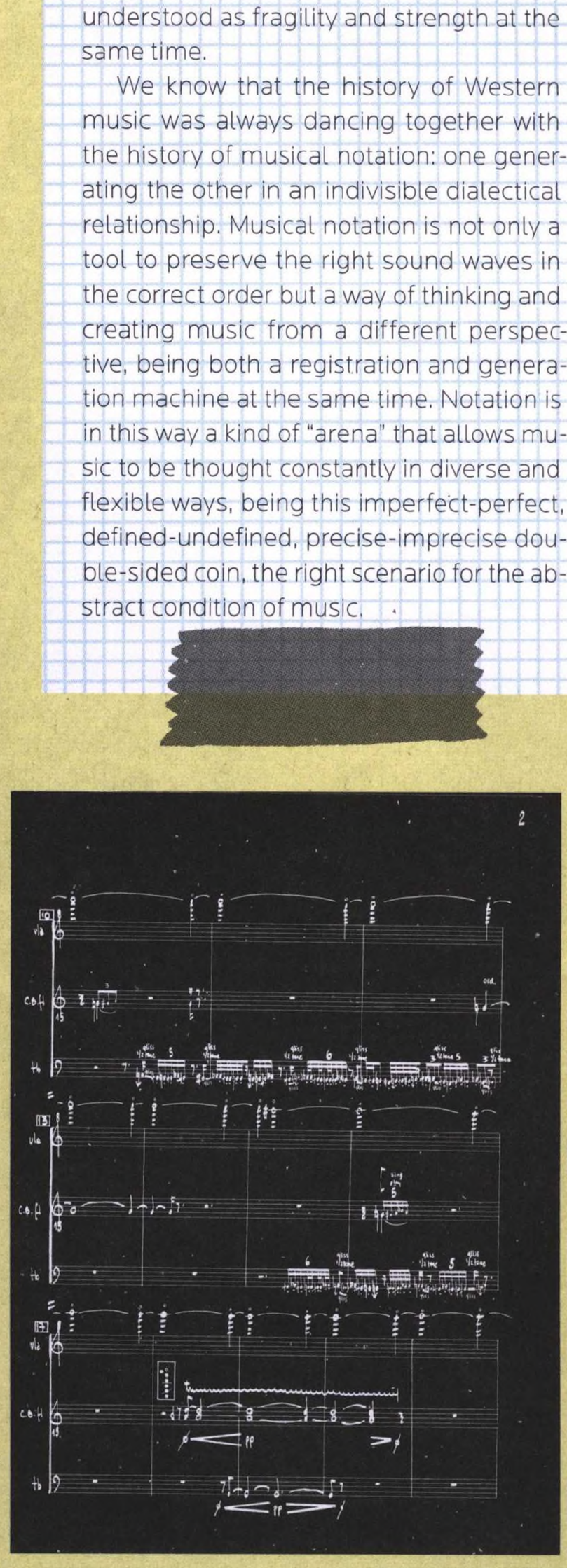
I like to think about music (I am talking about written music) as an object that regenerates itself every time it is evocated. Different from other arts where the physical object previously exists, in music the work of art "pops up" every single time music is performed, following the recipes of a score.

Music chooses a foreign language to express itself that is not sound waves but rather graphical signs. This synesthesia—that is when one type of stimulation evokes the sensation of another—prints to musical thought an ambiguous feature, ambiguity understood as fragility and strength at the same time.

We know that the history of Western music was always dancing together with the history of musical notation: one generating the other in an indivisible dialectical relationship. Musical notation is not only a tool to preserve the right sound waves in the correct order but a way of thinking and creating music from a different perspective, being both a registration and generation machine at the same time. Notation is in this way a kind of "arena" that allows music to be thought constantly in diverse and flexible ways, being this imperfect-perfect, defined-undefined, precise-imprecise double-sided coin, the right scenario for the abstract condition of music.



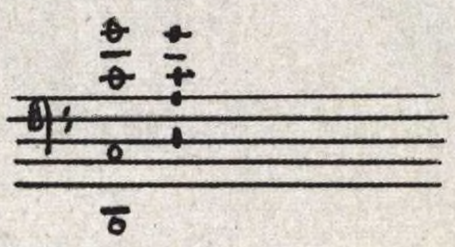




Cecilia Arditto; *Música invisible—Libro tercero*, #1, 2 and 3. For B♭ trumpet / flügelhorn. Used by permission of Cecilia Arditto, © 2005.

	Tom	Joan	Sam	Jackie
269	4/4 Click			
270	/ I never ..	/ ---	/ ---	/ ---
/	/	/ I never ...	/	/
/	/	did ...	/ He never	/
/	/	/	did it ...	/
271	/ ---	/ ---	/ ---	/ She never
/	/	/	/	did it with a ..
/	/	/	/	/
/	/	/	/	/
272	/ I never	/ I never	/ ---	/ ---
/	did it with a	did it with a	/	/
/	/ uhn (cont.)	/ uhn (cont.)	/	
/	nnnnn --	nnnnn --	/	/
273	/ before	/ before	/ ---	/ ---
/	/	/	/	/
/	/	/	/ be-	/ be-
/	/	/	fore what?	fore what?
274	/ ---	/ ---	/ ---	/ ---
/	/	/	/	/
/	/	/	/	/
/	/	/	/	/

Segue to ASYLUM



	Bob	Jackie	Sam	Joan	Tom
275	4/4 Click				
276	/ That was a ---				/ ---
	different song				/ ---
	/ ---				/ The same
	/ ---				idea.
277	/ I be-				
	lieve				
	you are not				
	speaking cor-				
278	rectly.	/ ---			
	/ ---	/ That is a			
	/ ---	common accu-			
	/ ---	sation.			
279	/ O	/ ---	/ ---		
	says that?		/ ---		
	/ ---		/ If		
	/ ---		you are de-		
280	/ ---		termined to be		
	/ ---		happy,		
	/ ---		nothing can be		
	/ ---		wrong.		
281	What's wrong with			/ ---	
	that?			/ ---	
	/ ---			/ If	
	/ ---			you are de-	
282	/ ---			termined to be	
	/ ---			happy.	
	Isn't that			/ ---	
	splitting hairs?			/ ---	

Segue to Song #8 RECENT ATTENDANCE

Robert Ashley; *Celestial Excursions*: "Act II Asylum (Song #7—Before What?)." Opera: for solo voices, orchestra, and electronics.

Used by permission of Robert Ashley / Visibility Music Publishers, © 2002.

Celestial Excursions: Old people are special because we have no future. The future is what to eat for breakfast or where did I leave my shoes. Everything else is in the past. Is this understandable?

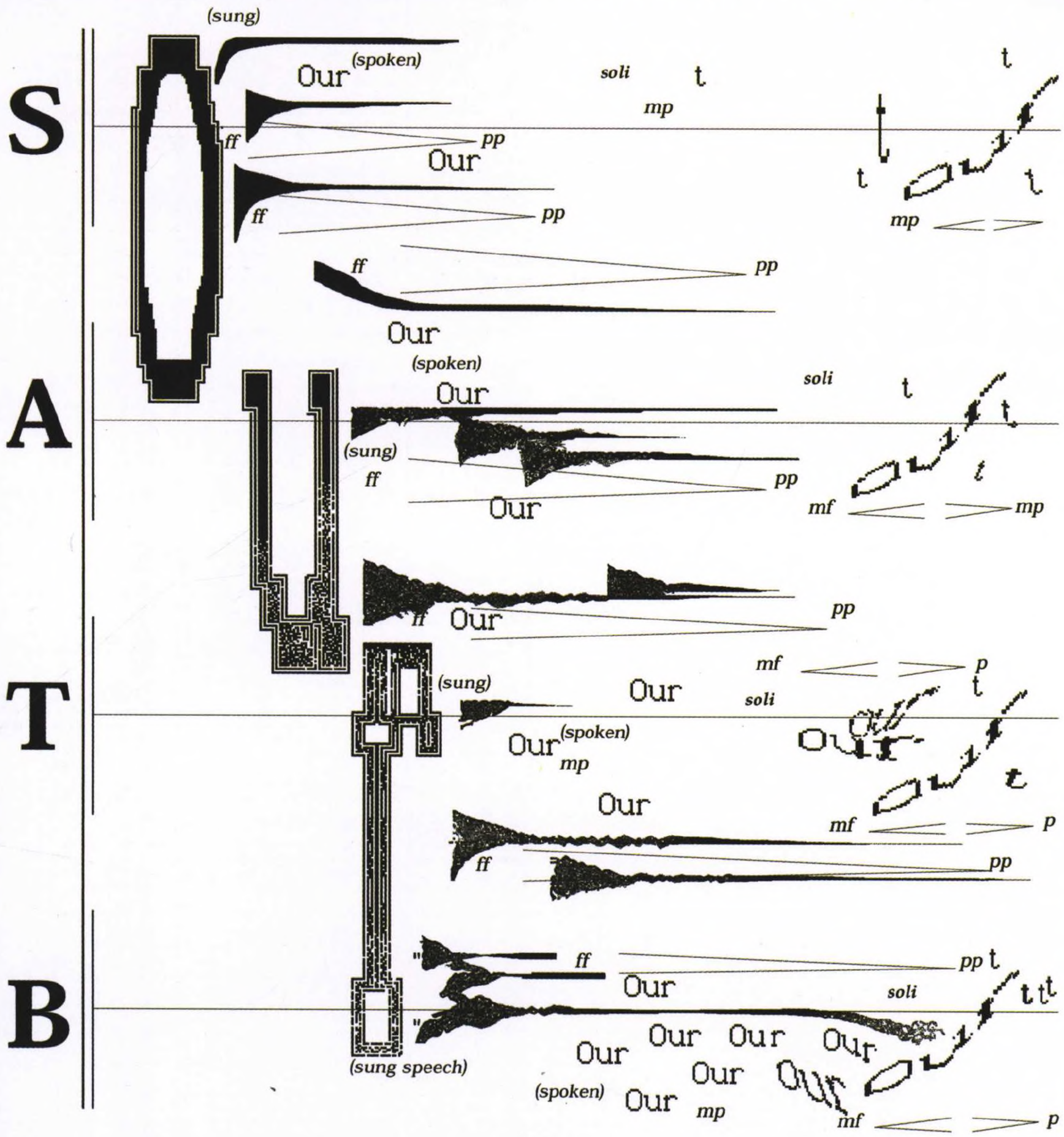
So, sometimes old people break the rules, especially the rules of conversation and being together. They laugh a lot. I mean real full laughter. Did you ever notice that? They break the rules because, for one reason or another (illness, anger, damage, enough of that, whatever), the rules no longer apply for them. They are alone. Sometimes they are sad. Sometimes they are desperate. Mostly they are brave. Mostly they have given up on the promises of religion—life after death, immortality, etc. Mostly they are concerned with dignity. Living with dignity. And, like all of us, eventually dying with dignity.

But they are still obliged, as human beings, to make sounds. They are obliged to speak, whether or not anyone is listening.

"Act II (Asylum)" is a dialogue between four guests at The Assisted Living Facility and the counselor, who is trying to explain to them that the burden they feel, which might seem to be explained in words, is not to be relieved by finding the word of escape, and in fact will never be relieved. Occasionally the guests break into song to relieve the tension.

Oordah

for mixed choir, with optional slides

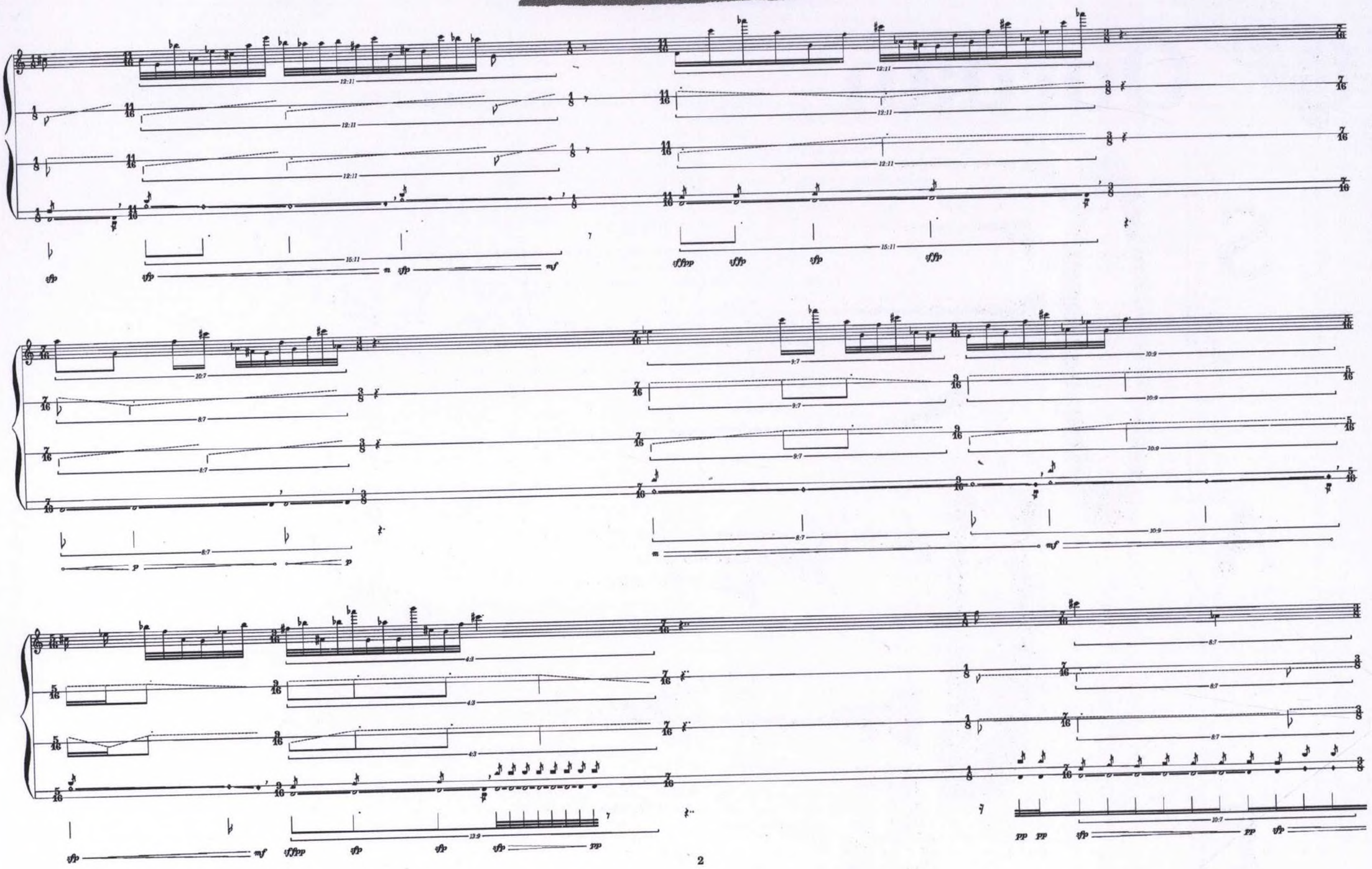


Kevin Austin; *Oordah* (page 1). For mixed choir, with optional slides. Used by permission of Kevin Austin, © 1985, 1991. Image quality reflects the era's technology.

Oordah began as one of a group of text-sound compositions from the "concrete poem" from 1984 called "Sporas." The file was created on a Mac Plus, in SuperPaint 1.

Many of the sound ideas and techniques are borrowed from the tape studio tradition in which I developed, and these are today much more easily and precisely realized in sound software. In some sections the nature of the sonic outcome can be rather easily deduced from the score, but often the score will require that the conductor and choir work out "on the spot" how to realize a graphic image, and the resulting sound may have little direct relationship to the score, except that the score was a "map" for production, rather than a "picture" to be realized.

TREVOR BAČA



Trevor Bača; *Sekka* (2006-2007). For flute. Used by permission of Trevor Bača, © 2007.

Sekka: The Japanese flutist Reiko Manabe asks for the piece in Darmstadt. It is August 2006. Some weeks pass. Reiko is home in San Diego; I am home in Austin, and writing starts. Snow. A shifting multiplicity. Cut with the tongue—or with the lips, or with the throat—the breath here stops and starts in frozen stillness. Bright / too-bright attacks affricate whispered *s*, whispered *š*, whispered *Đ* with *t*, *p*, *k*. Not a poetics of the breath. Rather an enactment of the breath. Where sibilants *s*, *š*, *Đ* swell and then go away, labiodental and interlingual *f*, *th* force motion altogether differently. The teeth in *f*, *th* try but fail to cut off the rushing-on of breath. (If there is a normative breath then *f*, *th* are not it. Japanese *fu* with two lips, no teeth is a different story.) But our *f*, *th* here bite lips and tongues and cut quiet rivulets in our sound. Shining white sounds. An intense and sculpted whisper. Decidedly unvoiced. Because breath in every instance precedes the voice. Signs and symbols. How to notate a shining assemblage? Four staves—pitches at top, breath at bottom, and two special staves between. (1) What of the pitches? There are patterns. And the patterns filter. And beyond the filter, irreparable deletion. (2, 3) And the two intervening staves? Small motions rising here and falling there, closer here and farther there—the body of the flute in space, moving carefully in Reiko's hands. Pitches, in both cases, bend, and, sometimes, glow. No (explicit) microtones. Our ups and downs, motions towards and away take care of that. Pizzicati and tongue rams likewise fall out of the notation as (inescapable) consequences rather than (special) effects. (4) Breath below, and in three parts. Stops and continuants, attack and release. Dichotomous labels capture nothing and letters carry uncomfortable meaning. Breath here ... no lyrics, no text. So shapes instead. Triangle, square, semicircle for types of attack. Vertical staff positions for everything else. Read the breath at an instant, top to bottom; read the score in an evening, bottom up. Baptism. Reiko: "Come to New Orleans." It's New Year's Eve. The streets are cold and the fireworks are bright. "But what type of snow?" she asks. "Well, what does Japanese give us?" After the streets there are coffee and beignets. And then 2007 starts. "What do you think of Sekka?" Snow plus flower. But better maybe to read the other way 'round—Japanese flowersnow. There are two *hana* and so we pick the bigger, lusher of the two. Later, John translates. *Sekka* combines *l'idéogramme japonais figurant la neige avec un des deux idéogrammes figurant la fleur. Cette combinaison évoque une chute douce et calme do flocons de neige, comme des pétales tombant du ciel.* Two friends take the breath apart. Bright white flashes and the quiet of a still-falling snow.

for Seth Gordon

Lunar Cascade in Serial Time

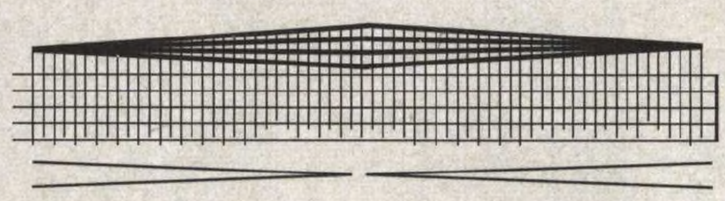
February

Dennis Báthory-Kitsz

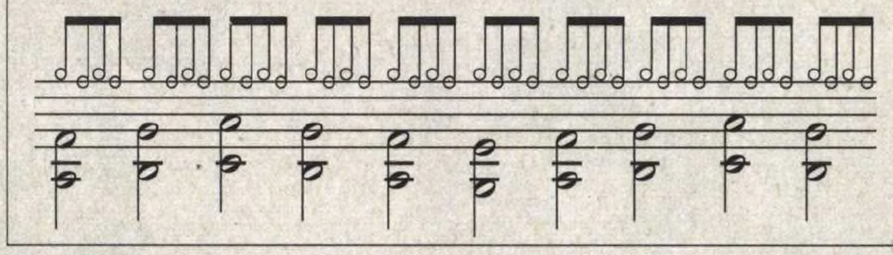
sections, continuous — no break
crossfade technique & modules

p

brush

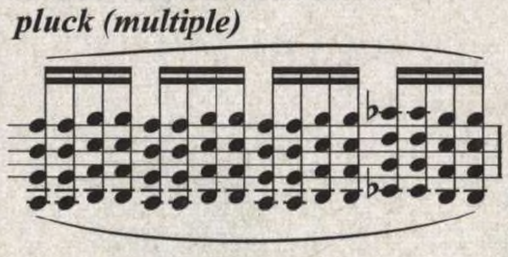


irregular pick (/bow)



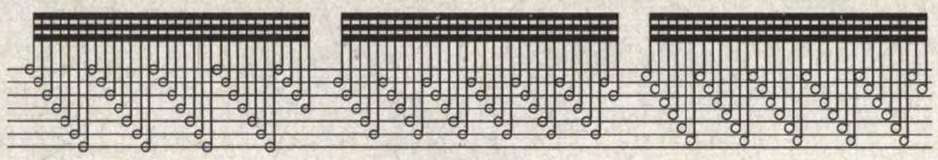
loop on

pluck (multiple)



loop xfade

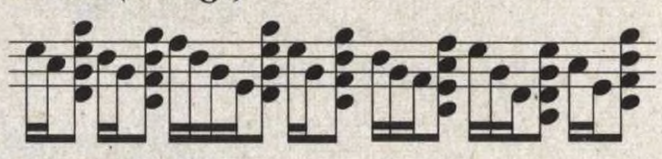
brush (scrape)



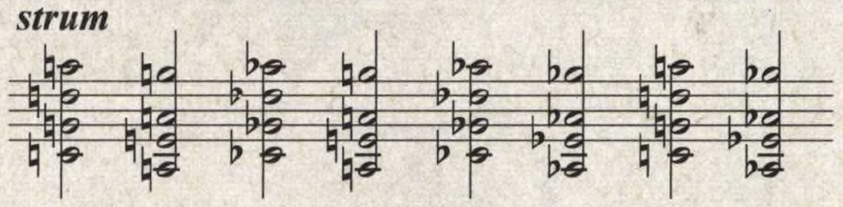
Northfield Falls,
Vermont
February 17, 2007

loop restart

knock (strings)

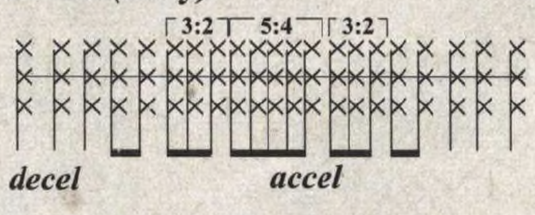


strum

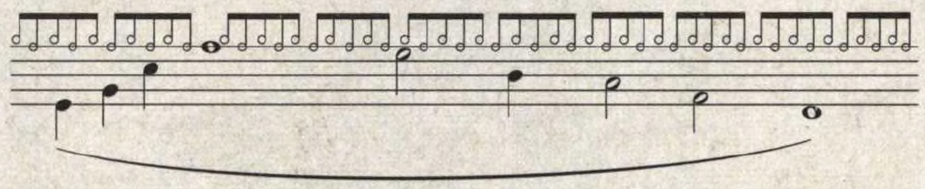


loop fade

knock (body)

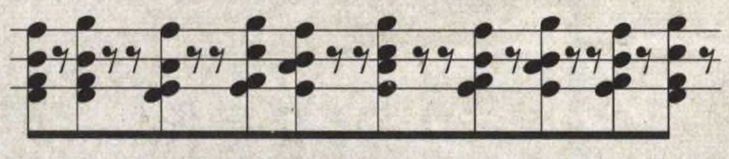


slide (nails)

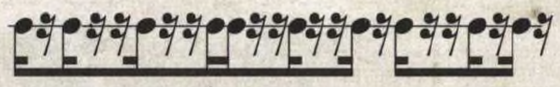


loop restart

pat (strings)

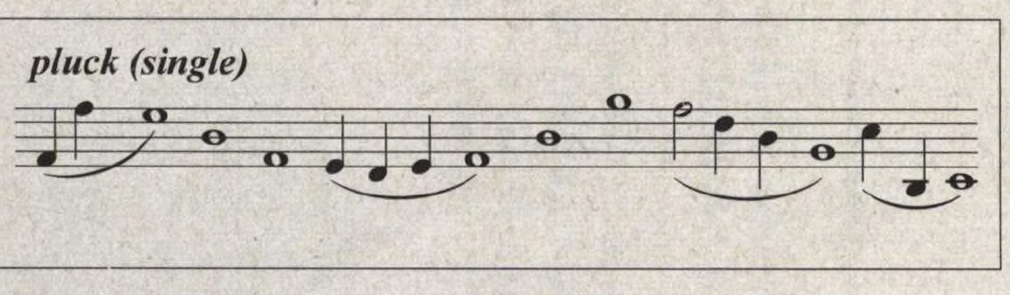


pat (body)

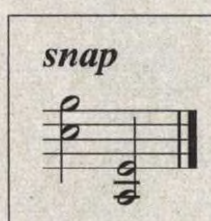


loop cont'd

pluck (single)



snap



loop out

Dennis Báthory-Kitsz; *Lunar Cascade in Serial Time*. For tenor guitar. Used by permission of Dennis Báthory-Kitsz (Westleaf Edition), © 2007.

Dennis Báthory-Kitsz

To Anticipate the Forgetfulness of the Future

Reflections as Composer and Copyist

I.

For clarity and exactitude and imagination, the traditional notation system is broken.

The mass of published repertoire tells musicians all is well because the marketplace follows the money, casting aside the new for the old, the exceptional for the mundane. Notes and lines, please, and scrub the weird stuff.

So there is a crisis in coding sonic expression. Current notational advances have stagnated while the previous half-century's advances were rejected. Inertial reluctance, regression of choice and marketplace fundamentalism are at work. Common symbology is limited, compact and conservative; software in a mass marketplace is conservative, too.

The collective effect leaves composers in notational twilight, picking up bits in the shadows and asking themselves, *Will this work?*

II.

Music notation is reconfigurable for meaning, but lacks embedded mechanisms for internal re-design. It also differs from text. Because text is recursive, it can tell about itself. Oh, and "a picture is worth a thousand words" uses words as a measure.

More an instruction kit than a language, music notation is extensible but deprecates to text when symbols are unavailable—or made unavailable. Industrial publishing scrapes them away, using commodified symbols to recast old publications and restyle manuscripts. Musics of diverse cultures and times are read through the identically ground lenses of 19th-century Berlin or Rome or Paris—and their digital doppelgängers today.

This is a crisis of clarity into the past—as well as into the future's past. Composers use notation to communicate sound and ideas, and expect them to sustain. Yet their instructions are distorted through these foggy lenses.

It's been said that one learns an artform by copying the masters. But nascent composers copy from foggy, published, secondary works, editions where they study and integrate the shapes of the composer's writing—the curves, architecture, phrasing, emphasis—that have been mutated by editorial changes, technical adjustments, and an engraver's choices of balance and legibility. The original recedes. Implications are forsaken.

As a student, I earned tuition and upkeep by copying arrangements and parts, as well as copying scores to study. Then Cage's *Notations* was published; the world—I believed—had changed. I was wrong.

III.

Ambiguities intrigue and irritate composers and performers differently. Composers, like writers, weigh the mysteries and implications of grammar and syntax. Performers, like actors, weigh the revelations of sound and presentation. After two-hundred years of shared notational practice, the mysteries and the revelations have been pried apart by commerce.

Traditions pressure composers and their copyists and publishers. Common accidentals, for example, carry multiple implications and conflicting meanings and playing techniques—whether identifying a note, showing its significance in the melodic and harmonic scheme, being part of a larger set of 12 or 19 or 43 or more symbols, or including implicit direction. Composers involved in grammatical authenticity spell accurately—and expect, however futilely, that those who read their scores will grasp their choices. Whether using a plethora of elusive verbal descriptions (What do andante or espressivo mean? How about Cage's screw and bolt?) or the markings performers are accustomed to changing (such as tempi, string phrases, or dynamic levels), composers employ a grammar and syntax—a style—within their music that is as open or mysterious as a composer intends, but externally ambiguated by time and place, after which editing and typesetting add value—or a veil.

Notation progressed like a giant ball of dust,

picking up flecks of visual usefulness as it rolled onward from the neumes of the first millennium to the serialists nine-hundred years later. Industrial publishing captured the dustball at the end of the 19th century—even as composers began to adapt symbols more diligently, recasting notation.

Some composers threw industrial notation over for mnemonic transmission, words alone, or oral tradition, while others advanced graphics, with expressed notes withdrawing from the main task of compositional cohesion. Circles and spirals and modules and trajectories appeared. The expanded musical vocabulary (chronicled in *Notations* and cataloged in Erhard Karkoschka's *Notation in New Music*) replaced the tortured manipulations of exhausted 19th-century notation with an elegance and clarity.

Examples: *Binky Plays Marbles*, *LowBirds* (menu score), and *Lunar Cascade in Serial Time: June*. Each presents notational issues not addressed in 19th-century notation. The *Binky* duet has separate, staggered time signatures and the double bass has three sets of alternating actions to play. The *LowBirds* performers have a menu score and individual menu parts whose contents are played within the symbols. In *Lunar Cascade*, the performer's grasp of improvisation within a 75-year aleatoric tradition is anticipated.

IV.

Music notation engenders disagreement and passion because it is so tightly bound to legibility, meaning, and especially physicality. Save for concrete poets, the placement of words does not strongly effect how they read or signify; book designers may increase legibility or create visual style, yet the clarity or ambiguity of the words are unchanged. But how one spells—and the publisher engraves—a given symbol has implications to both legibility and meaning.

Moreover, there is a distinction in purpose and practice. We do not speak or read or hear or write words in even the simplest counterpoint; our understanding may be informed by ambience, but (save for concentrated interleaved listening) we obtain only one meaning-stream. (The vacant look at a restaurant table? The person opposite has switched streams to eavesdropping.) Music offers itself through a collective meaning of sounds. A simultaneous, "love of my life," "lice in the bed," and "minding your cat" make only a clatter of sound, meaning obscured. But the simultaneity of C-G-C, F-D-E, A-B-G creates melodies and a chord progression and an orchestration and a socio-artistic implication. That microscopic module contains greater implication than a Danish prince's lament over his being or nothingness.

V.

As composer and copyist, I seek both authenticity and compromise, standing in defense of composers' methods while finding the most effective route to successful performance.

Composers create documents of musical and sonic ideas, sufficient but incomplete maps of compositions and the instructions needed to render them into sound. Where assumptions are made through other documentation—jazz rhythms as recorded, Baroque ornaments as described or extrapolated, *vibrato* or *portamento* as handed down—instructions are absent.

Since assumptions belong to the composers' own times and places, guidance may be sparse. Techniques vanish into history, instruments go obsolete, mnemonic devices change. Notational ambiguity is unclouded by historical knowledge and present history.

So as historical knowledge—and repertoire—build up like silt behind a dam, composers anticipate the forgetfulness of the future, and provide that future with increasing information. A pattern of notes on lines, once adequate, is now meager. Manners of articulation are specified, speeds communicated exactly, and techniques indicated. An extended library of musical symbols aids in disambiguation.

Many composers also believe that music's meaning is best conveyed if it looks like it feels, appears as it sounds. Yet the composers' manuscripts are transformed by publication—or today's equivalent of publication, as more manuscripts are directly computer-entered. The character of notation and the composer's chosen details matter far more than a mere sequential count

of pitches and durations.

Directors assess documents for content, structure, and ideas that can be discerned from the composers' evidence. These are challenges. Composers may not have notated all the content, editors and publishers may not have rendered the content faithfully, cultural differences may create false cognates, and directors may not have time or ability to perceive and re-create musical coherency. That last matters. Directors should be—but often are not—conversant with the styles of new compositions. Nonpop can be without precedent, and so very personal.

With fifty years of notational variations from the avant-garde through minimalism to postmodern classicism to a distorted capitulation to older publication styles, directors may chafe at notational practice in endless transformation from 19th-century methods—as well as the investment demanded to learn a notational style that may be used just once. Yet can one interpret that which one cannot read?

Reading performers—the mechanics-driven (using notation as instructions for placement of fingers and methods of presenting the sound), the music-driven (using notation as a guide to the sound), and body-driven (bringing abstract notation into their muscles to articulate)—demand notational attention.

Ensemble and solo performers differ psychologically, as composers learn painfully; leaders and team players are as distinct in the musical world as they are in business or politics, with passive-aggressive behavior easily engaged by unfamiliar notation. And professional instrumentalists resent ambiguity, appreciate clarity, and expect efficiency. Compromise may be required. Instrumental notation is idiomatic, and composers who notate outside conventions—accidentally or deliberately—risk artistic dismissal and miserable performances.

VI.

Music, a real-time activity with symbolic representation, begins on the page and ends as sound, proceeding through recognition, short-term memory, biological and mechanical action, external interpretation, acculturation effects, and feedback—placement, expression, tuning, and interaction with other performers—all driven by a constantly changing stream of symbols. This delicate process is perturbed by illegible printing, dubious symbols, poor placement, cramped pages, or broken page turns.

It would seem that professional engraving software would facilitate the entire process. Ironically, software has not brought with it an increasing awareness of legibility, placement, visibility, and convenience. And techniques of page clarity and balance learned through hand-copying have fallen away, before software has caught up with the past or the present. Just as notation software has set in motion a process—and dependency—similar to that which obviated such disparate tools as long division, spelling, typesetting, and stick-shifting, in this period of transition of both notation itself and notation software, a plethora of awkward scores drained of visual meaning are being made.

VII.

A century's resentment simmers between composers and music publishers. Publishers are businesses, and their interest in art is engaged only so long as it coincides with profit. In a corporatized environment, social commitment to artistic creation is evanescent.

Profit comes into play because coincident with the hyper-capitalistic trends came the fastest and deepest development of notational practice in the history of written music. Though it has continued to evolve since Karkoschka's *Notation*, the most explosive developments took place between 1920 and 1970. The 2005 *SoundVisions* (Möller, Shim & Stäbler) shows that development since has slowed.

Examples in Karkoschka and Cage are largely hand-written manuscripts or hand-inked fair copies, as one would expect during an era when typography was expensive and music was still engraved on metal. However, save for traditionally notated music, *SoundVisions* shows little change from the hand-inked era—despite twenty-plus years of computer music engraving.

What has happened? Nothing. Absolutely noth-

ing. Software adopted symbology and techniques straight out of the 19th century—measure-based, horizontal, graphics-free, note-bound workflow lifted right from the engraver's plates. It is as if the 20th century never happened. And it has an effect.

VIII.

Notation and engraving software are fundamentally distinct. A graphical notation program has few limits, but efficiencies are gained when software handles tasks natively and musically, with a fluid interface, where sonic and musical information can be entered in sonic and musical ways—even with respect to graphically intense scores—and where proofing, playback, and studio features are available.

Confirmation that notation programs are still based on 19th-century models can be seen in the list of symbology weakly or not supported. Percussion notation, modern articulation symbols, tone clusters, circular accidentals, and alternative noteheads require supplementary fonts. Stemless notes, feathered beams, beaming over barlines, and variable staff lines are kludges. Staggered barlines, beams breaking over objects, beamed flags, fractional or interwoven tuplets, angled stems, drawing on curves, time-based notation, circular or bent or angled staves, grid notation, arbitrary continuation lines, curved or broken arrows, and half-slurs or half-ties are all graphical kludges. Quarter-tones are marginally supported and microtones hardly at all, nor are dimensionable symbols, stretchable elements, and scores in color. Equitone, Klavarscribo, and the entire universe of graphical notation are simply absent.

This catalog of near-impossibilities is stunning. And creative people are not immune to their tools' limitations. When software defies working with contemporary techniques natively, and as composers come up through composition using computer notational tools, they will be inhibited by the enormous inconvenience of working outside of 19th-century conventions. Imagination may stretch well past tools, but in practice, one produces practical materials—under duress, temporal or economic. Among those in a forward-looking musical community, among friends, or where a reputation is such that performers are willing to (or paid to) spend time and energy creating a piece from hand-drawn materials, the tools—paper and ink, say—are no barrier. But materials move out of the circle of acquaintances. Publishers take them on, reprinting composers' manuscripts or hiring calligraphers and engineering drawing experts and specialists working in a combination of programs to create fine graphical renderings.

But the economics of publishing militates against hiring graphic artists, instead requiring scores to be submitted in digital format, camera-ready. (One of my engraving clients is a well-known composer whose publisher expects ready-to-print pages. He refuses to learn software and pays for engraving, with the joy of performance his only profit.)

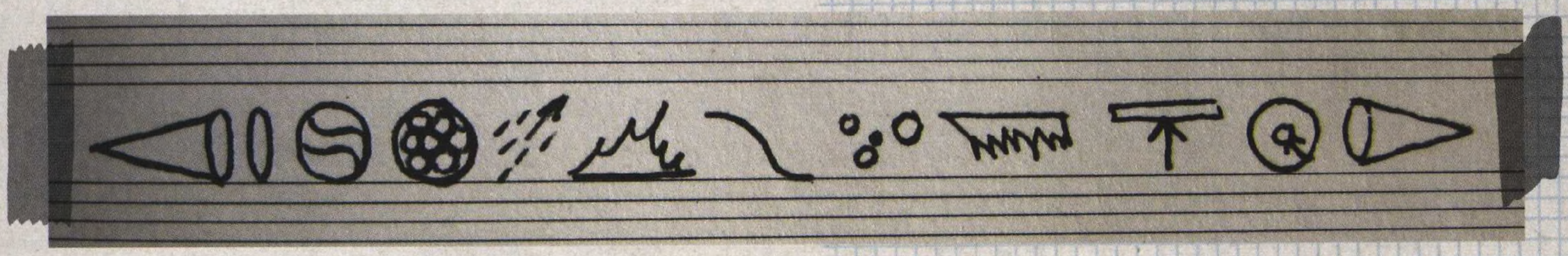
IX.

This limitation may injure subsequent generations of composers. Software suggests—demands—ways of working with a score, even of conceptualizing it. Experienced artists can reject this or work around it, but nascent composers raised within software's commercial limitations are at risk of pre-emptive forgetfulness. Directors and performers are disinclined to assist the development of symbolic vocabulary. Ultimately, composers will have to re-build an advanced notational consciousness.

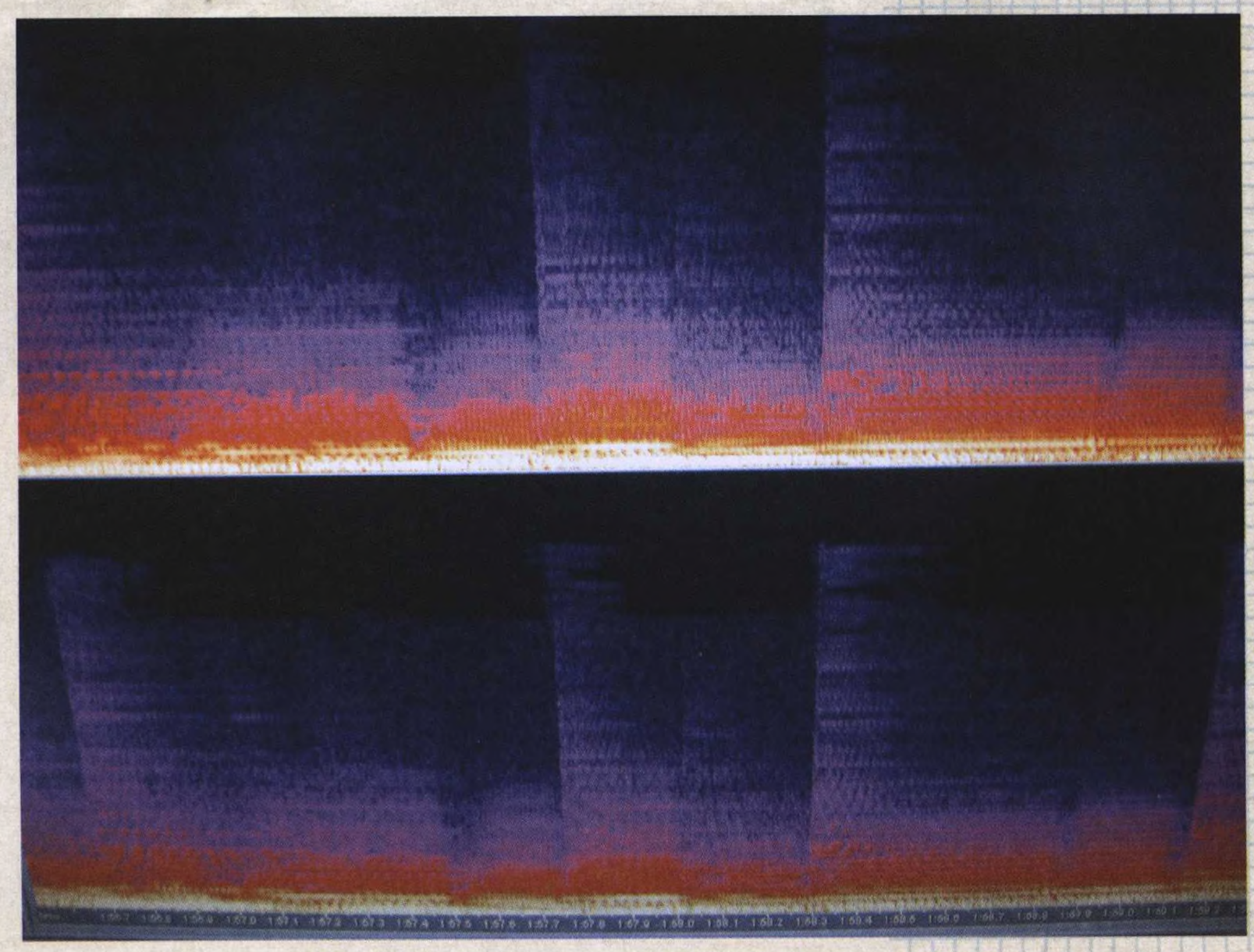
And then party like it's 1949.

Northfield Falls, Vermont, August 2, 2007

STEPHEN BECK



Stephen Beck; *CYCLES*. For video/electronic synthesizers. Used by permission of Stephen Beck, © 1974.



Stephen Beck; *Radhe*. Used by permission of Stephen Beck, © 1991.

CYCLES depicts a visual theme and variations as a visual allegory of the eternal cycles of life. The composition process included merging and fusing of 16mm color film positive with Beck Direct Video Synthesizer images with a collage combined in a process I call "Editation." I composed and performed the sonic music component to the final edited visual composition, which has a run-time duration of approximately 10 minutes.

RADHE postulates that we are entering a "post-digital" era in which tools for image making, sound, music, and communications are mature and ubiquitous. How do we use these tools wisely, and what might be their implications and consequences? What becomes of visual language, sensory and optimal perception? Will diffusion of analog motifs result? For me, creative necessity propels artistic realizations and explorations via hybrid electronic technologies. My artistic and technical innovations in luminous dynamic, emitted light span the transformation from the analog world of the 1060s to today. My work has investigated visual tools and visual language, archetypal modalities, internal imagery, spiritual technology, and compositional structures in video, music, animation, light sculptures, and games.

Stephen Beck

Mycology, Musicology, Harpsichords

Electronic Music and Video at the University of Illinois in 1969

John Cage was a visiting composer in residence at the University of Illinois, Champaign/Urbana, in 1968-1969; his visit culminating in a weekend of multimedia magic with the world premiere of *HPSCHD* in the flying saucer stadium there in May of 1969, barely two months before the first man walked on the moon.

HPSCHD was composed and produced by Cage, together with Lejaren Hiller, founder of the University of Illinois Electronic Music Studio. It was my good fortune as a young student of age 18 to play a part in the visual and aural realization of this most magical and transformative performance.

HPSCHD included seven harpsichords, computer-generated music, electronic music synthesis, visual projections of film and slides, and a whole array of new music meets media concepts.

The Stadium at the U of I looks like a giant flying saucer that just landed in the middle of the cornfields at the south end of the campus. The stadium was primarily built for basketball games, a passion of colleges in these parts. The opportunity to transform it into a glowing, pulsing, sonic stadium saucer for *HPSCHD* was probably a once-in-a-lifetime chance.

The circumference of the saucer rim was comprised of large, ten-feet high plate glass windows. By projecting 35mm slides and 16mm films from the inside out onto thin translucent screens hung on the windows, the entire saucer edge became a light show of pulsing, throbbing, lyrical, and dynamical images.

As you approached the stadium from afar, it was a sight never before seen. The stadium sits in a large, clear and flat parking lot—flat, wide-open space is plenty available in these parts—so the visual effect was magnificent in the evening darkness.

Some of the neighboring farmers looked on with astonishment and curious wonder, and we invited them all to come see the performance—and a few came!

Upon entering the stadium the sounds of parallel harpsichords with electronic audio amplification, dozens of other audio speakers playing tape-recorded electronic music generated by resident composers using ILLIAC computers and other electronic synthesis, a cacophony filled the air.

(Max Matthews at Bell Labs had recently released MUSIC V, his software program for generating precise frequencies, tones, ADR, and other basic music parameters. To use MUSIC V involved a multi-day-long process of composition and design, then punching hundreds of IBM data cards on the mechanical key punch machines, delivering the huge and heavy box of cards to the computer center; getting a few bad runs with bugs, you would sort through reams of print out paper with your program code to find and fix the bugs; finally, a rare and singular low-performance digital to analog converter would output to audio tape and you received a 1/4-inch reel-to-reel tape to listen to your composition.)

As you progressed down into the stadium, color lights swept the interior; this was the beginning of Light Show technology of the 1960s.

And there standing at center court, beaming his huge smile and dressed in an all white suit like a jovial ice cream man was Cage himself, basking in the joy of the creation.

The date was May 16, 1969, and even Andy Warhol had sent one of his surrogates with the trademarked white long hair wig to join the fun.

As a young student in electrical engineering at the U of I, this event was an opportunity for me to get a job with James Beauchamp, Jerry Hiller, and Herbert Brun, to study electronic music and composition while helping to build the Electronic Music Studio.

Housed in the attic of a small bungalow across the street from the main Music Department Building, the Stiven House was the antithesis of high tech appearance. Yet up in the attic was the huge collection of harmonic tone generators, oscillators, patch cords, reel-to-reel audio tape recorders, and the second Moog music synthesizer ever built.

It was there we could find Cage and other com-

posers, including Dr. Hiller and Dr. Brun, and the wonderful Sal Martirano, who was so cool and friendly with us undergrad students. Everyone was always smoking cigarettes or pipes with tobacco, so the music filtered through a hazy cloud of smoke.

Gordon Mumma, Edwin Kaplan, Maggie Payne, Jim Cuomo, and myself, we were all up in Stiven House at all hours of the day or night, trying to get a few hours booked in the studio to generate a minute or two of tape. Professor James Beauchamp and I were the only two renegades from the Electrical Engineering Department to wander across campus to mix it up with these "out there" musicians. Dr. Hiller was formally a chemistry professor, but he got the electronic music bug in the 1950s and began to develop the Electronic Music Studio, beginning in 1958. He was wise enough to bring in great talents like Dr. Brun and Jim Beauchamp, and it was primarily his diligence that led to Cage coming to be a composer in residence that year.

Among his many talents, Cage was also an accomplished mycologist—mushroom hunter—and one time in the spring of 1969 he invited a group of us all to go hunting out in the forests near Urbana with him.

Indeed, after some spring time rains, there appeared an abundance of wild mushrooms under the oak trees and other forest foliages. Cage would inspect a find, make a determination if the mushroom was edible or toxic, and we would collect the good ones in baskets.

Back in Champaign we all headed over to Sal Martirano's home for a roasted mushroom feast. Sal and his wife (a violinist) were very kind, and were always inviting students and faculty over to their home for working social events. We would eat, smoke, play music, talk circuits, and jam it up. (No, none of the mushrooms collected were psychedelic, though those could be obtained from other local suppliers.) The feast was delicious, and while there was a slight chance the mushrooms might have been toxic, we all shared a dare in eating them, trusting that Cage had made the correct collections. (He did NOT employ I-Ching methods in selecting the mushrooms.)

It was here that in late 1968 Sal Martirano began to design and construct his own personal electronic music synthesizer, the SalMar, using Heathkit's new digital electronics modules. He was not only a magnificent and innovative composer (one of his interesting creations included *L's GA*—Lincoln's Gettysburg Address performed with an actor wearing a gas mask with microphone feeding real-time audio voice processing, accompanied by taped music and a live improvisational mix by Sal, all set to a film background by Ron Nameth), but he was also an amazing jazz piano improviser, but now took on a new task of mastering electronic circuits to make his instrument.

In the midst of all this creative energy, we had a war in Vietnam to protest, and many of us young men collectively gathered and publicly burned our military draft cards. (Women were not allowed in the military then for the most part, and were not in danger of being drafted and sent to Vietnam. But they showed their support and affection for us in other nice ways....)

This environment inspired my concept of creating a video synthesizer as an extension of the concept of a music synthesizer. The idea of a personal visual instrument, in the lineage of Thomas Wilfred's Lumias and Oscar Fishinger's abstract animations, with a dose of The Whitney Brothers mixed in, and a dash of Jordan Belson added for good measure, came to me at this time.

These works that inspired me were all 16 mm films being shown at Undergound Movie nights on Saturdays on campus.

At first I was only working with the monochrome oscilloscope in the Electronic Music Studio, developing complex Lissajou patterns using audio frequencies from the multiple oscillators that I also recorded to tape. Playing oscillators and waveform generators in real time, I could get some nice three-dimensional line images going.

In late 1968 I collaborated with film professor Ron Nameth and we used his 16 mm film camera with some color gel filters to film many minutes of my first oscillogramics. (Later I learned that the pioneering film artist Mary Ellen Bute had explored this territory some ten years before, yet I had never seen or heard of her then—a pity for me!)

Some of my films were projected on large screens at the *HPSCHD* event in 1969. This was first real public performance, as part of the work of a Master—John Cage!

Some years later, Ron Nameth made a trek to India with the films, and told me he had left them there with a guru in an Ashram in Kathmandu. I wish I had some of them now!

In 1969, thanks in part to Ron Nameth and Sal Martirano, I was able to obtain the donation of a 27-inch color television set from Zenith in Chicago, where I had worked at a summer job the previous summer on a laser color TV projection system.

Once I had the color TV I was able to modify the red, green, and blue video circuits and sync circuits to feed in external "direct video" synthesis from a small analog console I built.

This was very exciting in 1969 because computer graphics at that time were very primitive, consisting mainly of only a monochrome oscilloscope or cathode ray tube with special long-persistence phoshors onto which the computer could draw a dot, or a series of dots, in a very slow, non-real time process.

My first Beck Video Synthesizer #0 was capable of real-time, full-color video with motion, shading, textures, and forms, based on my invention of the voltage to position converter circuit for horizontal and vertical locations. This design was inspired by Bob Moog's voltage to frequency circuit in the Moog music synthesizer.

Another aspect of this first video synthesizer was to feed audio source signals into the colorizers, which then displayed them in real time on the CRT color screen.

At the first video salon held in my small apartment on Bash Court, over a dozen friends and musicians crowded in to watch my video performances, including my feeding stereo audio signals from a turntable playing vinyl records of all sorts of music—Pink Floyd, The Beatles, Mozart, Stockhausen—which produced amazing, never before seen images on the color screen.

Soon I was composing specific audiotapes in the Electronic Music Studio with the analog waveform generators and the Moog Synthesizer designed to playback into my video synthesizer.

While audio signals were interesting on video, certain frequencies and pitches were more interesting than others, due to the frequency heterodyne of the video horizontal and vertical scanning rates.

In order to obtain even more precise controls of pitch and amplitude I then proceeded to program MUSIC V so as to obtain the most precise control for optimum video as per my aesthetic.

I still have those 1/4-inch reel-to-reel tapes in my archive, someday to reincarnate the earliest video experiments.

At this time at the U of I the multimedia work was exploding, and at the kind invitation of Sal Martirano, who invited me to join his live performance group with the SalMar, we often would lug the 27-inch Zenith color TV from my apartment to various venues on campus to give live electronic music and video performances.

Sal invited me on tour with his SalMar Performance Company to The Art Institute of Chicago, the University of Wisconsin at Madison, the University of Iowa, and other locations in the Midwest. It was a lot of heavy lifting of the Zenith, which weighed almost 100 pounds, and the SalMar. But nothing ever broke on all this travel and we played to hundreds and thousands of people during the winter of 1969-1970.

As the concepts for my video synthesizer developed a basic model of modules generating four basic elements or ingredients of the moving image emerged: color, form, texture and motion.

During a very brief period of time I designed dozens of circuits for all of these functions, based on a constructivist approach to video synthesis. This was in 1969-1970.

Another good friend of longstanding, and fellow student at the U of I, was the cinematic genius Ted (Theodore) Timreck. We had met up in Rob Fisher's Multimedia class and became very good friends. Ted is a musician, writer, animator, filmmaker, and all around talent.

At that time I was also doing stage lighting for modern dance companies at Champaign, including the Willis Ward Dance Company. My specialties included dichroic color lighting, gas discharge strobe lights, sequencing, and other goodies that

I designed and built myself.

Modern dance companies were great to work with since there were many lithe, young, lovely lady dancers to mix it up with!

Ted asked me to do some special effects lighting for some of his experimental films, including a scene where we lit dichoric color on a ritual cutting open of a nude woman wrapped in aluminum foil.

Ted was filming in 16mm with a Bolex camera, so I invited him to come over to my studio apartment to film some of the early video synthesis images. There was no access to videotape at that time, so film was the first and only method available to record my video performances.

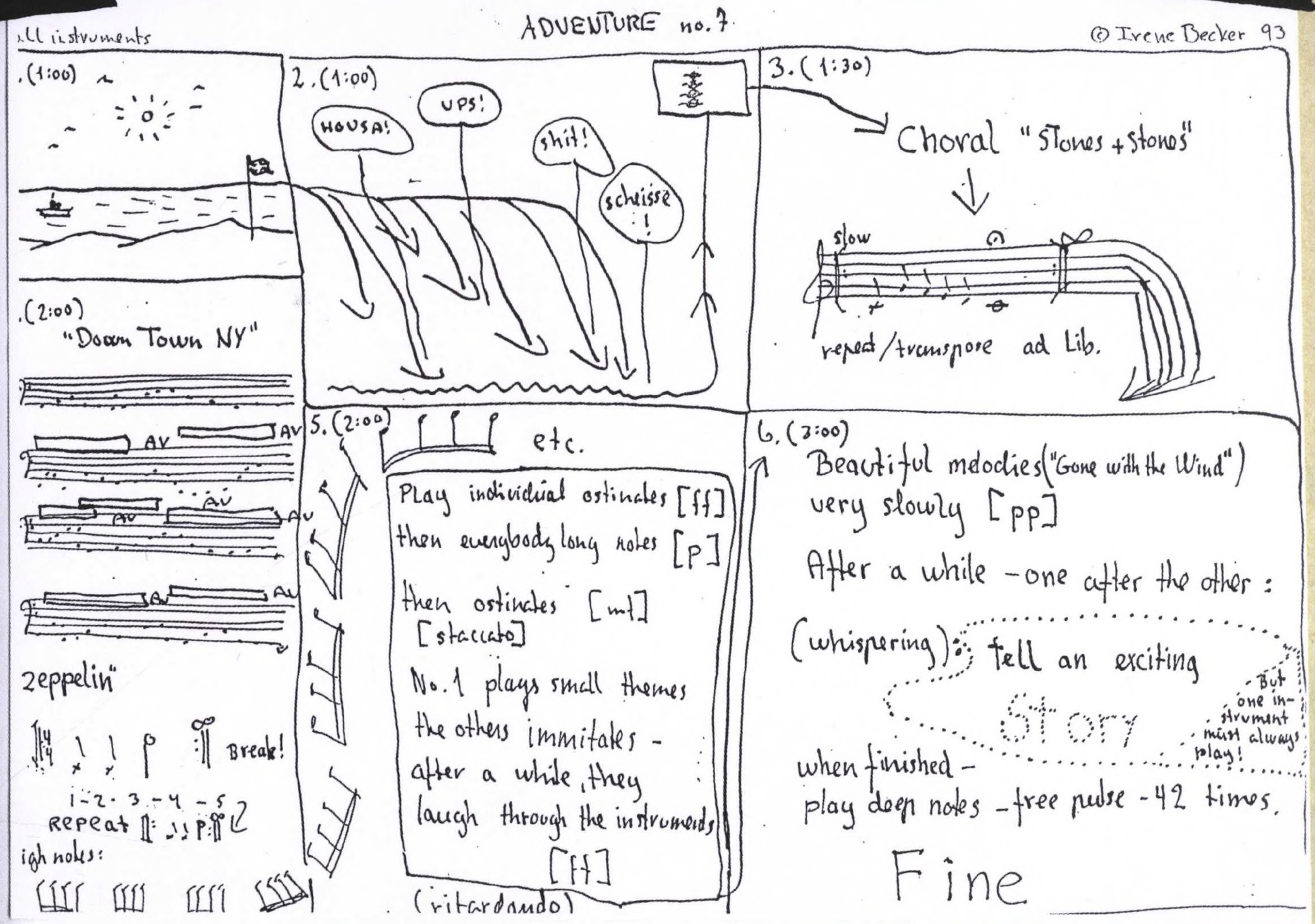
The results were very nice, and we shot hundreds of feet—tens of minutes of film—of which today I would love to get my hands on.

At the dawn of the 1970s we all collaborated with Rob Fisher in the production of a Rock Opera that premiered in January 1970, at the Krannert Center. Entitled *!* the multimedia extravaganza featured dancers, musicians, artists—all the new talent at the U of I.

We projected my video on film on a giant screen on stage, in front of which dancers and jazz musicians performed. I also had designed and built a sixteen-channel sound sweeper, and performed it live on stage as this hippie techno guy was sitting over on the side.

We all lugged A7 speakers up and around the hall, and with the sound sweeper I could place and move sounds in and out, around, far and near. One scene put the hall totally in the dark and I performed a six-minute sound space beginning with a thunder and lightning storm that was amazing.

The effects obtained by fading sounds, then music, in from far away behind the audience, bringing the sound up closer and then spinning it around, up and out the stage were great.

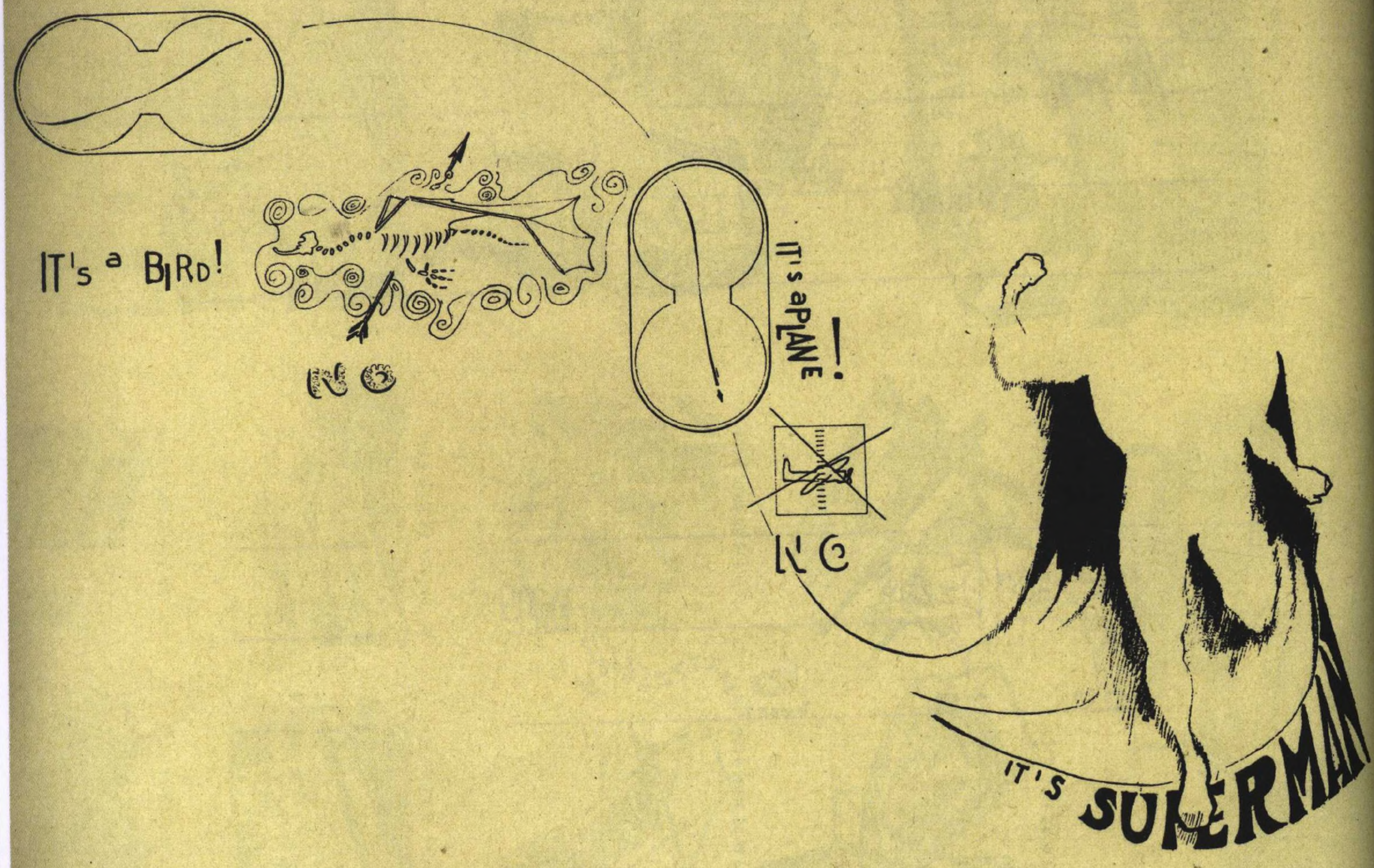


Irene Becker; *Adventure No. 7*. For ensemble/voices ad lib. Used by permission of Irene Becker, © 1993.

By Carl Bergstrøm-Nielsen

Adventure No. 7: How to do the piece? In a letter from Irene, she writes: "You have of course your freedom to interpret the piece. However, I can well hear inside me—in the fourth 'picture'—the French horn playing the lower 'part'—a fast walking-bass in free jazz-style—but now I say no more! Of course, time measurements are approximate. Have a nice trip!"

From this it can be deduced that the composer enjoyed hinting at some musical styles, but she nevertheless considers it important that the group makes its own interpretation. Make the experiment yourself and have a good talk on how you feel like doing each section—this is how it should be in an "adventure." And of course, the concrete details described with words in sections 5 and 6 must be followed.



Cathy Berberian; *Stripsody*. For solo voice. Used by permission of the Estate of Cathy Berberian, © 1966.

The score should be performed as if by a radio sound man, without any props, who must provide all the sound effects with his voice. The three lines represent the different pitch levels: low, medium and high.

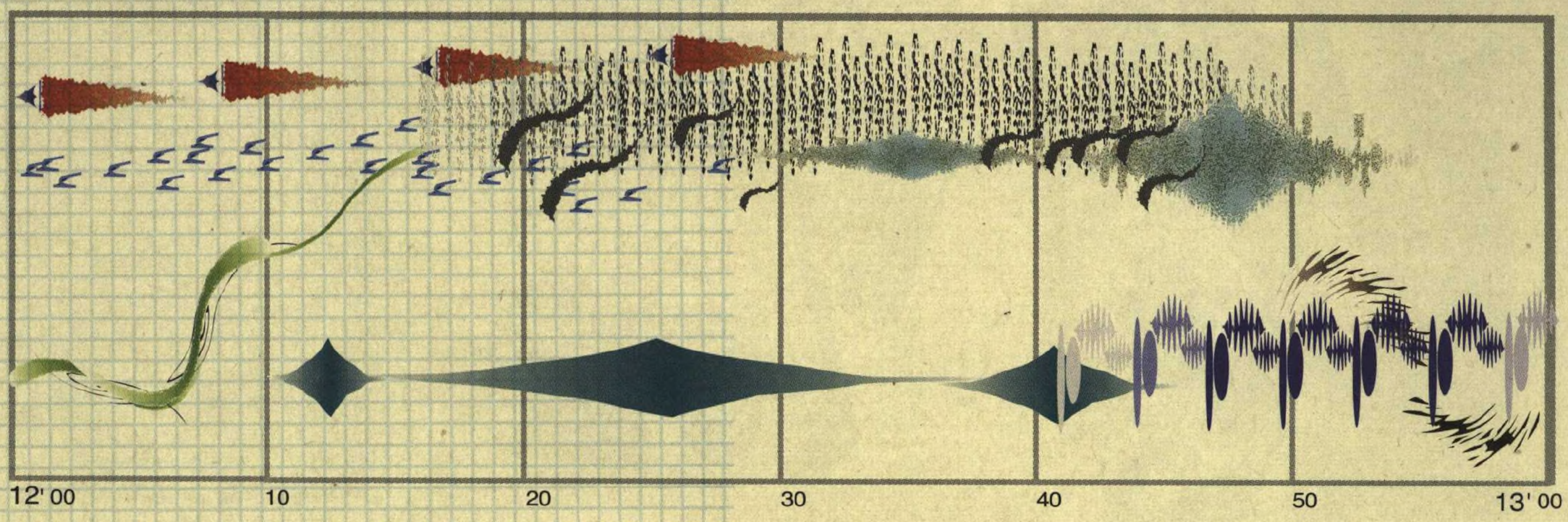
The lines enclosed by bars are to be performed as "scenes" in contrast to the basic material which is a glossary of onomatopoeia used in comic strips.

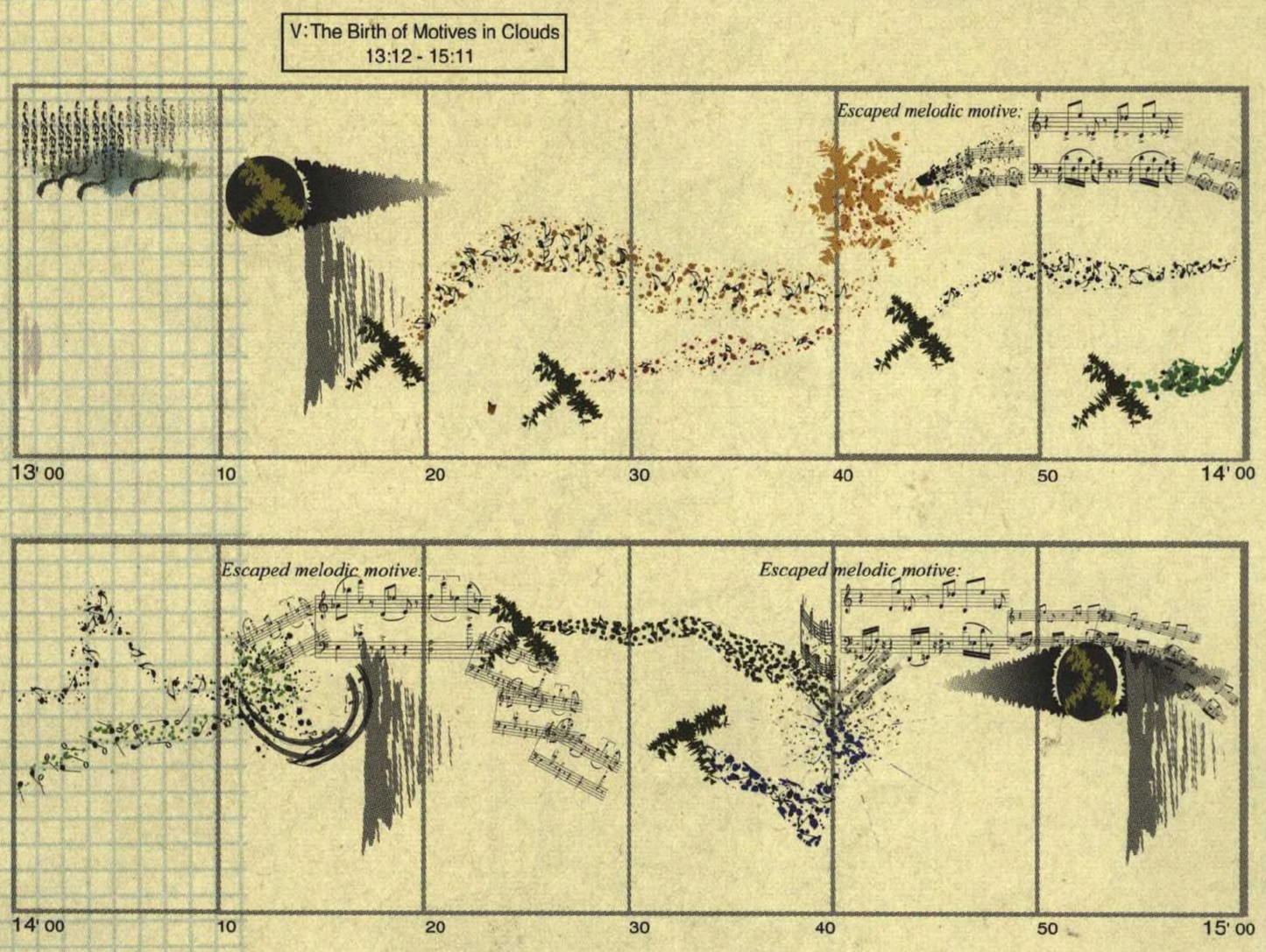
Whenever possible, gestures and body movements should be simultaneous with the vocal gestures.

On page 10 is a child's figure which represents a silence in which the performer places her thumb in her mouth and cups her other hand to her ear.

Basically, the spacing of the "sound words" indicates the timing. In performance, the entire work generally takes 6 minutes.

This work was commissioned by Hans Otte on behalf of the Bremen Radio for the Festival of Contemporary Music of May 1966 and was first performed on that occasion.





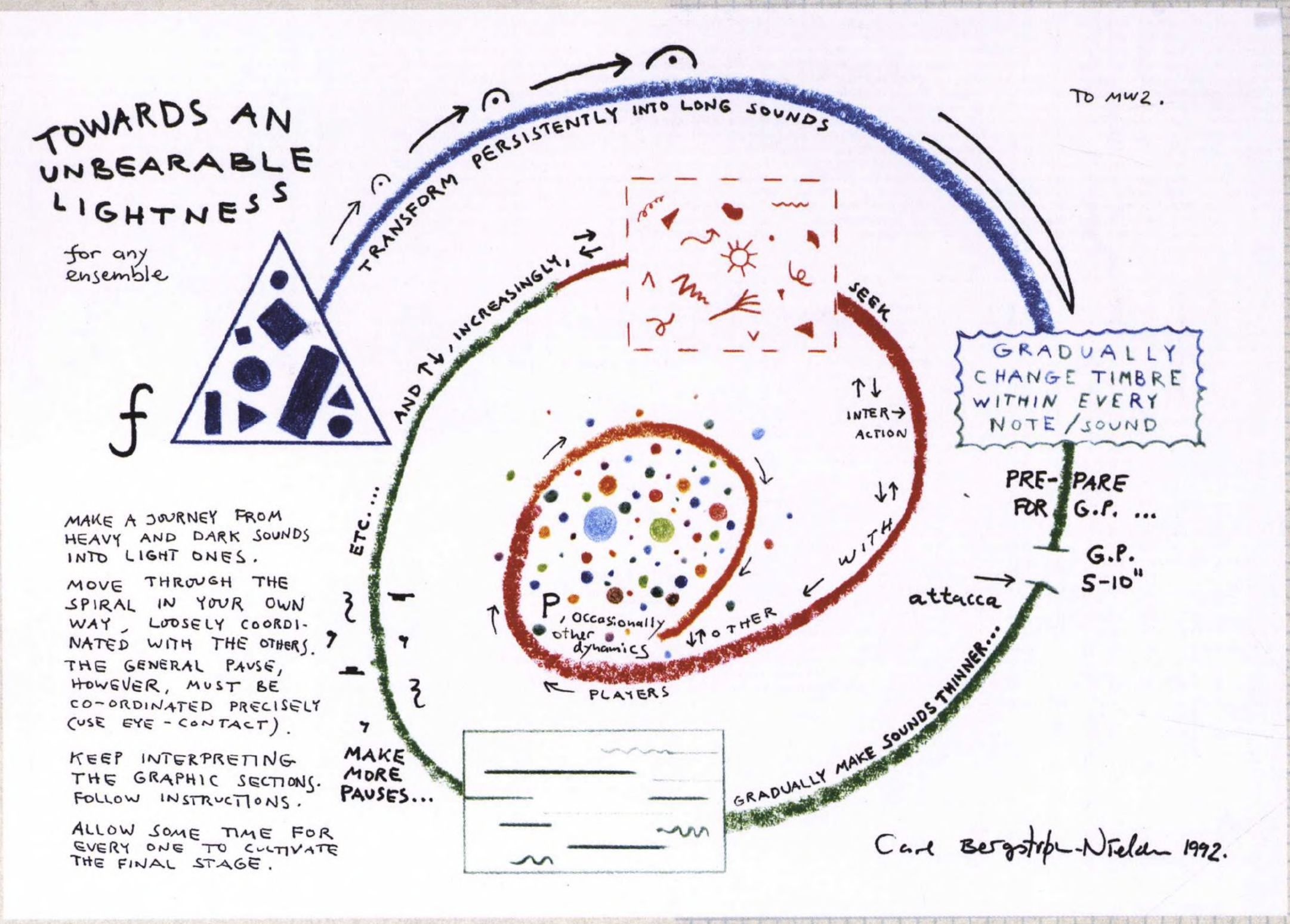
David Berezan; *Unheard Voices, Ancient Spaces*. For naturally occurring sound sources.

Used by permission of David Berezan, © 1999.

Unheard Voices, Ancient Spaces consists of recordings made of naturally occurring sound sources in wilderness areas of southern Alberta, Canada, including sub-alpine mountain regions, lake areas, grasslands, and parkland areas. This material was analyzed, manipulated, and composed within the studio. The title of the piece, *Unheard Voices, Ancient Spaces*, refers to the deep spiritual connection I feel with nature-spaces and the desire to give a characteristic voice to these natural environments through the composition of evocative textures and gestures. *Unheard Voices, Ancient Spaces* is divided into two distinct geographic regions: mountain and grassland. The mountain region consists of 4 smaller sections: "I: Gathering*," "II: Emerging," "III: Running," and "IV: Dawn/Microcosm*," and the grassland region contains "V: The Birth of Motives in Clouds," "VI: Struggle," "VII: Dusk/Aftermath," and "VIII: Scattering." Each section is unique in its characteristic use of environmental sound source, transformation, behavior, and diffusion. The integration of instrumental sounds in the composition ranges from purely textural material developed to blend and relate to the natural sounds, to the suggestion of pitch centers, and finally to the emergence of foreground motivic material. The structure of the work on this level can be seen to suggest a progression from a coexistence of nature and "pre-technological" human activity, to a gradual assertion of human motivic expression, eventual "competition," and finally, the supremacy of nature over humankind. All of the pitch material in *Unheard Voices, Ancient Spaces* is derived from a single bird song, not revealed in its complete and original real-world context until "Dusk/Aftermath."

This piece was realized in the electroacoustic studios of the Department of Music at the University of Calgary, Canada. 8-channel/8-speaker diffusion was completed using the Richmond Audio Box, a real-time diffusion and processing control environment, at a New Adventures in Sound residency program in 1999 at the Banff Centre for the Arts, Canada.

As for the score, each section consists of 6 "panels," each representing 10-seconds duration. Each system represents 1 minute of music. Placement within the y-axis corresponds to frequency (the higher the frequency, the higher the placement) and the darkness of images, or intensity of color, represents amplitude. In both cases, the representation is relative to the graphic's immediate surrounding material. In other words, there is no absolute grid or scale. Placement within the x-axis corresponds to elapsed time in minutes:seconds format. The score was made using Adobe Illustrator and it was created primarily to function as a listening score, though it may also be useful as a sound diffusion score and as an aid to analysis.



Carl Bergstrøm-Nielsen; *Towards An Unbearable Lightness*. For any ensemble. Used by permission of Edition Samfundet, © 1992.

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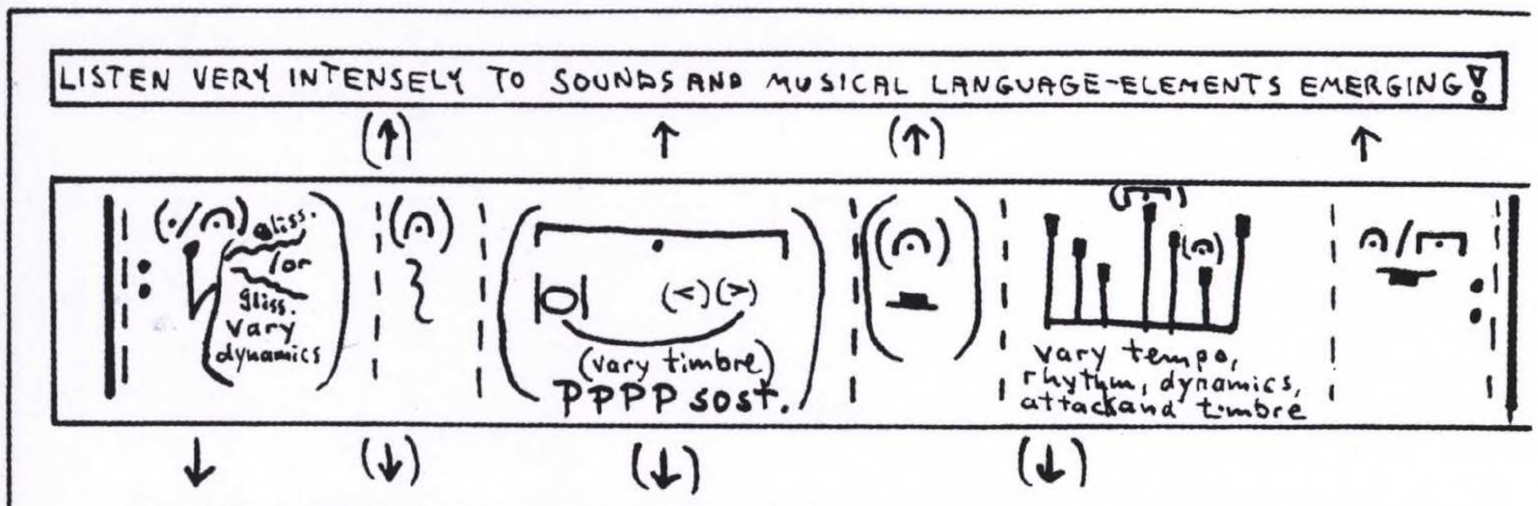
POSTCARD-MUSIC

Improvisational piece for an ensemble of preferably different voices/instruments.



Repeat in your own rhythm in at least 70 different ways.

© By Carl Bergstrøm-Nielsen, Borrekrattet 17, DK-2800 Lyngby, phone (02) 87 76 17, Denmark, Scandinavia. Short-hand version of INTEGRATION which can be obtained for 1,50 Dkr. or one international reply coupon each at the adress above. No charge of postage to those who report of a playing experienc with Postcard-Music.

Carl Bergstrøm-Nielsen; *Postcard Music*. For an ensemble of preferably different voices and instruments.

Used by permission of Edition Samfundet, © 1992.

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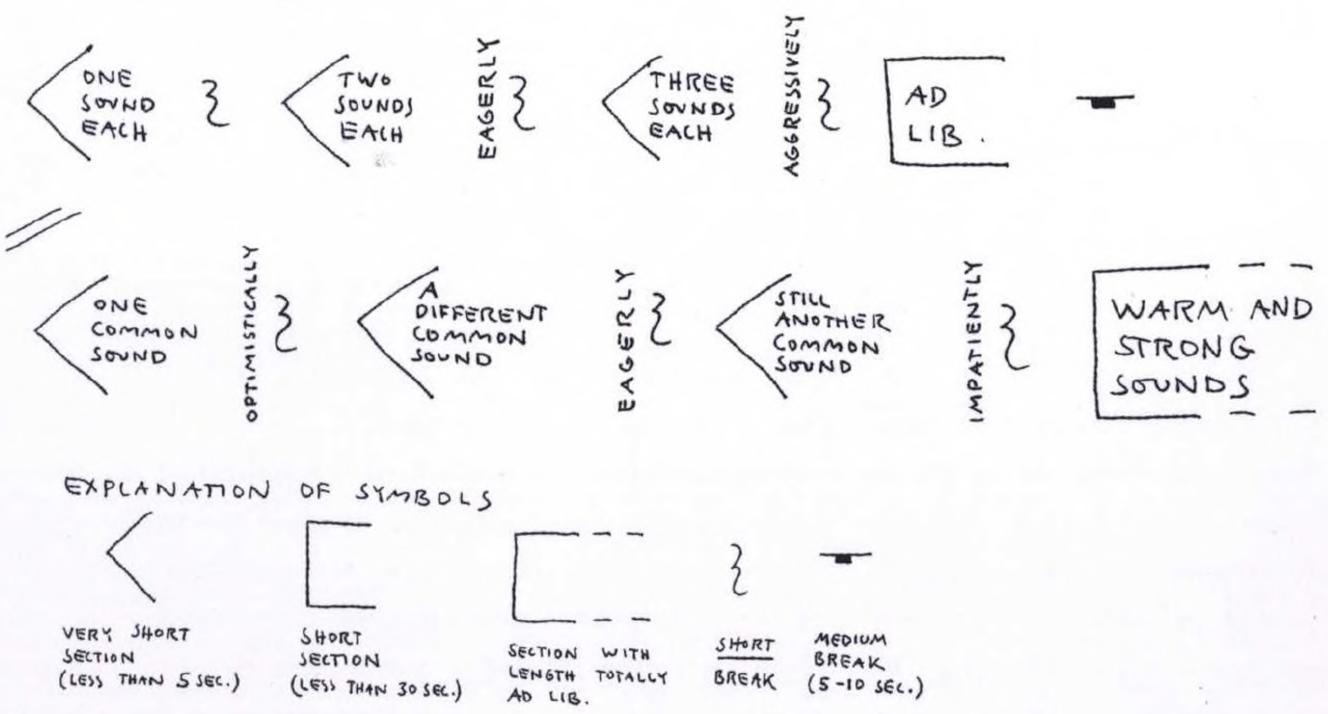
FRAMEWORKS 2



Carl Bergstrøm-Nielsen; *Frameworks 2*. For variable instrumentation. Used by permission of Edition Samfundet, © 1992.

"Night-time"

Philip Blackburn

for 29 solo voices (Sopranos : 12
Altos : 6
Tenors : 5
Basses : 6)

Text: Night, but five stars shine: joy-moaning, do glide over

Transcription: naɪt bʌt faɪv staz ʃaɪn dʒɔɪ mOnIŋ du glaɪd Ova

Buttermilk Way, eyes data-full of dust, bust horizons, time.

bʌtəmIlk weɪ aɪz data-fUl ɒv dʌst bʌst hɒraɪzənz taɪm

Duration: 4:00
(longer if instru sections are add

Performance notes:

- Throughout the piece; S.A. sing 𝄞, T.B. 𝄢
- Time-length between cues is constant - c. 3" (ie $\frac{3}{4}$ d. ♩=60). Singers should divide the space into corresponding time-points.
- Singers breathe when necessary.
- Generally, sing without vibrato.
- Do not match vowels/dynamics with other singers.
- In the slow transition of glide-vowels certain plateaux will result:

  eg ɔɪ = ɔ ɒ a eɪ

  aɪ = a eɪ These should be borne in mind when determining rate of glide.

- The piece should be performed in a resonant acoustic to enhance the harmonics.
- Singers may stand in a circle
- Instrumental doublings/replacement may be arranged, with or without an instrumental drone prelude.
- Exact coordination of articulations is not required
- Chorus enters at 2:00 into the instrumental prelude.

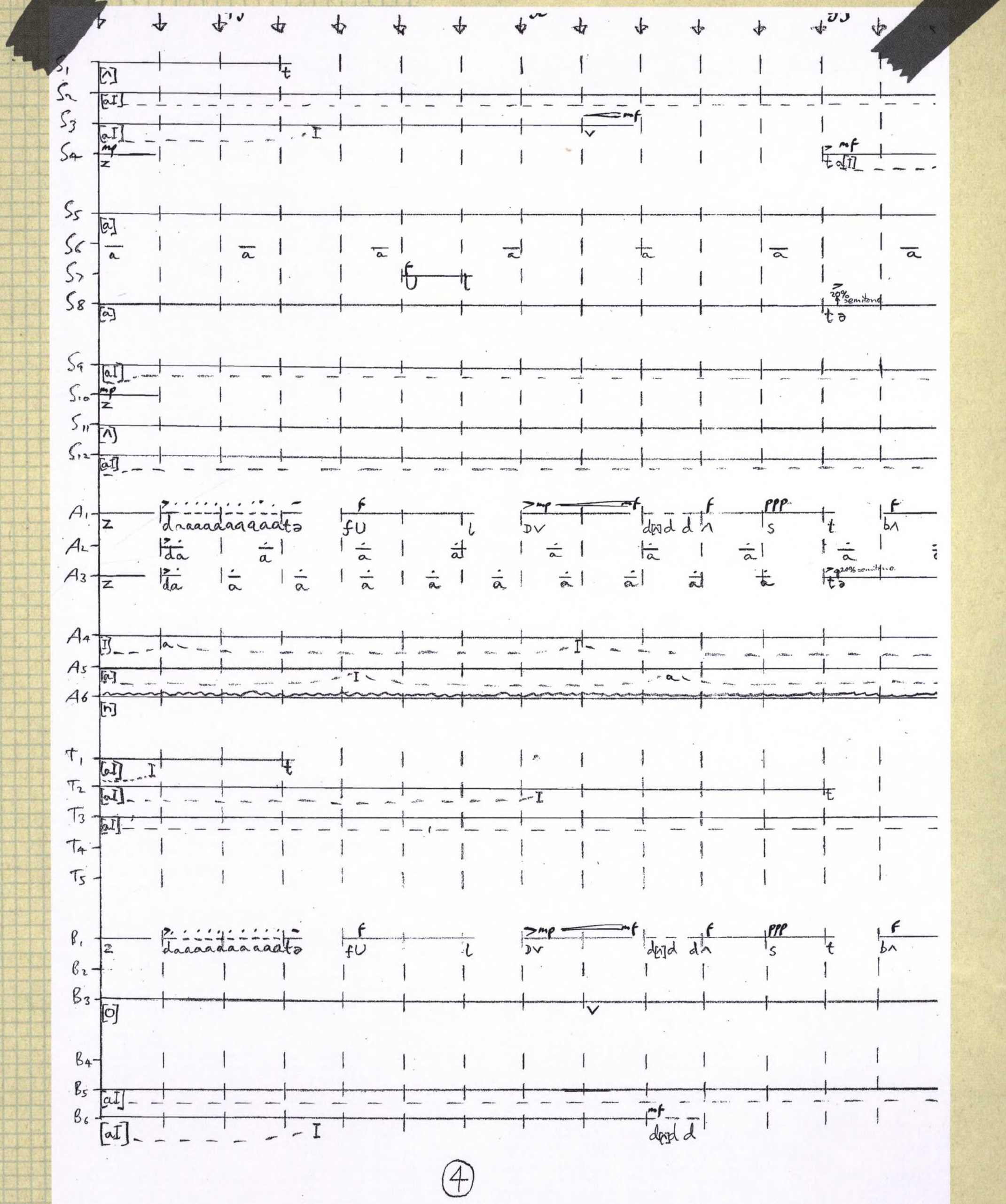
Night Time: Night, but five stars shine: joy-moaning, do glide over Buttermilk Way, eyes data-full of dust, bust horizons, time.

Night Time brings the worlds of Tallis's *40 Part Motet* and Scelsi's single-tone pieces together. It is performed by solo voices in a circle (originally sitting on boats on the River Cam) around the audience and explores the spatial and timbral effects produced by shifting formant frequencies. Having done phonetic transcriptions and analyses for previous works, this time I began by creating a text from a set of phonemes. The structures of these also determined the performance decisions.

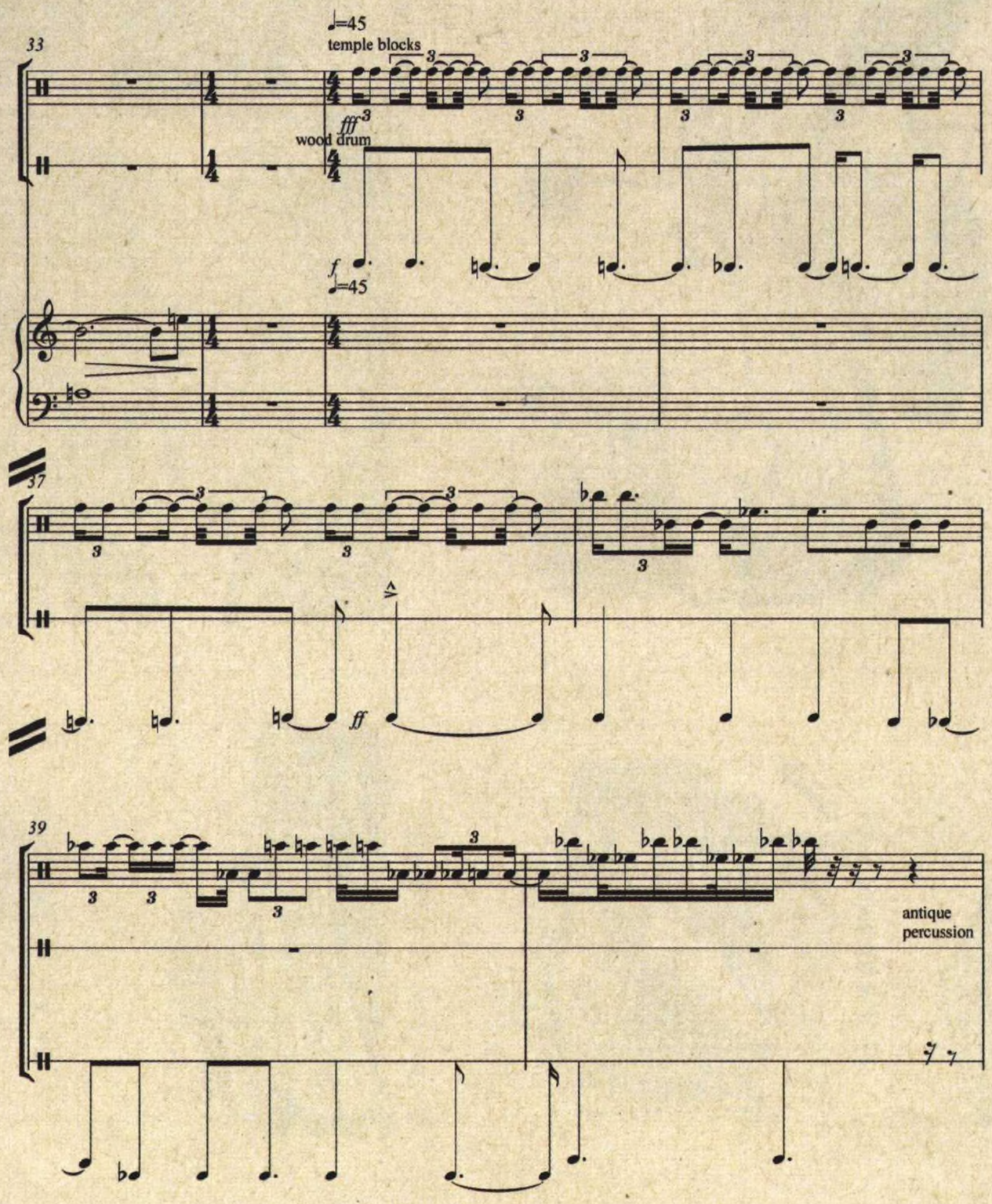
Thus, "night" and "time" are homonyms with palindromic aspects; "but," "butter," and "bust" are imaginary comparatives and superlatives. After the first note, intelligibility rapidly goes out the window, but patterns emerge in the spatial distribution as a result of particular consonants cutting through the texture.

There is no need to use standard pitch notation—everyone is singing a G—since the piece trades on timbral and dynamic changes. The piece also acts as an exercise for training singers to maintain pitch (the tendency is to go flat) and pay attention to independent articulation, tuning, and not getting lost.

The conductor acts as a timekeeper; there is no perceived sense of pulse when listening. He/she must trust in the performers' ability to self-critique since there is no way of discriminating the individual parts from the podium.



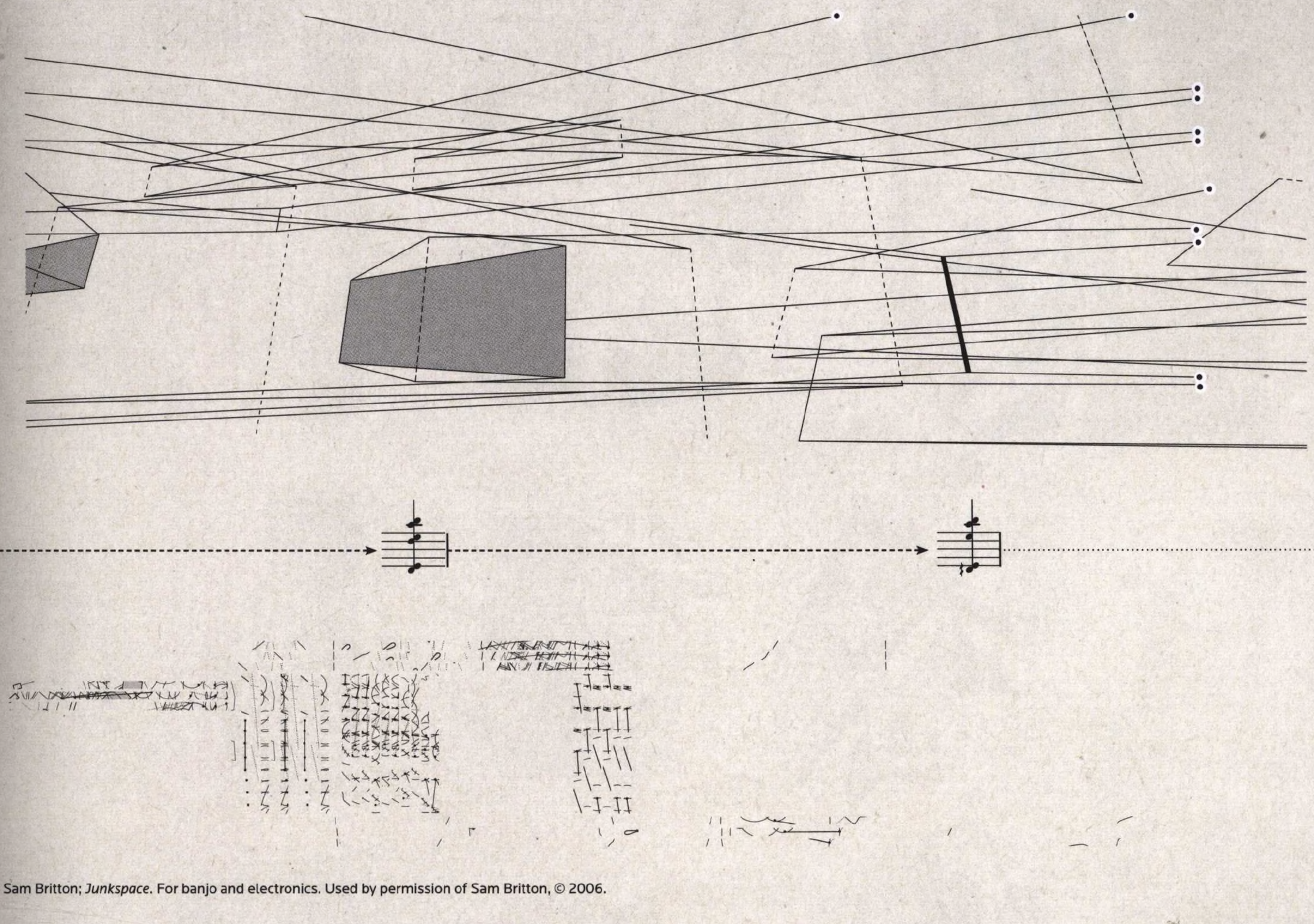
Philip Blackburn; *Night Time*. For 29 solo voices. Used by permission of Philip Blackburn, © 1982 Lynceus Press.



Benjamin Boretz; *Downtime*. For piano and percussion. Used by permission of Benjamin Boretz, © 2005.

Music, as music, adds a significant dimension to experience and cognition. When music is assimilated explicitly to extramusical modes of cognition and experience, that otherwise nonexistent dimensionality is lost, or at least significantly diminished. That everything interpenetrates with everything is certainly true, but doesn't handle the issues here: the question is, in what form, in what degree, to what purpose, with what desirable self-conscious cultivation—or, conversely, with what unavoidable pervasion—and—perhaps most poignantly—to what effect, with respect to both music and extramusic does that interpenetration lodge? Why is it normal to think that some phenomenon, some utterance, is just what it is within its own language, even though we know at the same time that everything is interpenetrated with everything, while in the case of music it seems necessary to identify it explicitly with things and phenomena outside of its own linguistic-phenomenal space, not being comfortable with the implicit interpenetration but needing something, some reference, some analogy nailed down? For example, "structure" in music is clearly an extramusical reference imposed on music as a *sine qua non* while no one feels the same need to explicate structure for every verbal or pictorial phenomenon. To "open" music by tying it to a complex of explicit other issues seems more like closing it by reduction than if it is supposedly "closed" by being just whatever it is, leading just wherever it leads, creating who knows what otherwise illogical or even irrational mélange of awareness and associations. It makes me think about reincarnation, how people always imagine themselves having been someone important or famous, having done something "officially important"—rather than just "someone," someone who just "lived." The latter seems to me much more "open-ended" in addition to being more realistic and less paranoid.

So, when you say that something is "relevant to music experience" how is that determinable by more than music experience itself? It is understandable to me that music as extramusic is part of everyone's world (like childhood or personal relationships, or historical associations and their attendant inner feelings)—but that is epistemologically trivial (everything and anything can and does have that kind of network—a rock, a book, a face, a house, a bird, anything). So what does actually "deepen" music, and what actually "shallows" it—and do we valorize "depth" and demonize "triviality"—or not—and, either way, why, or rather, in the service of what?



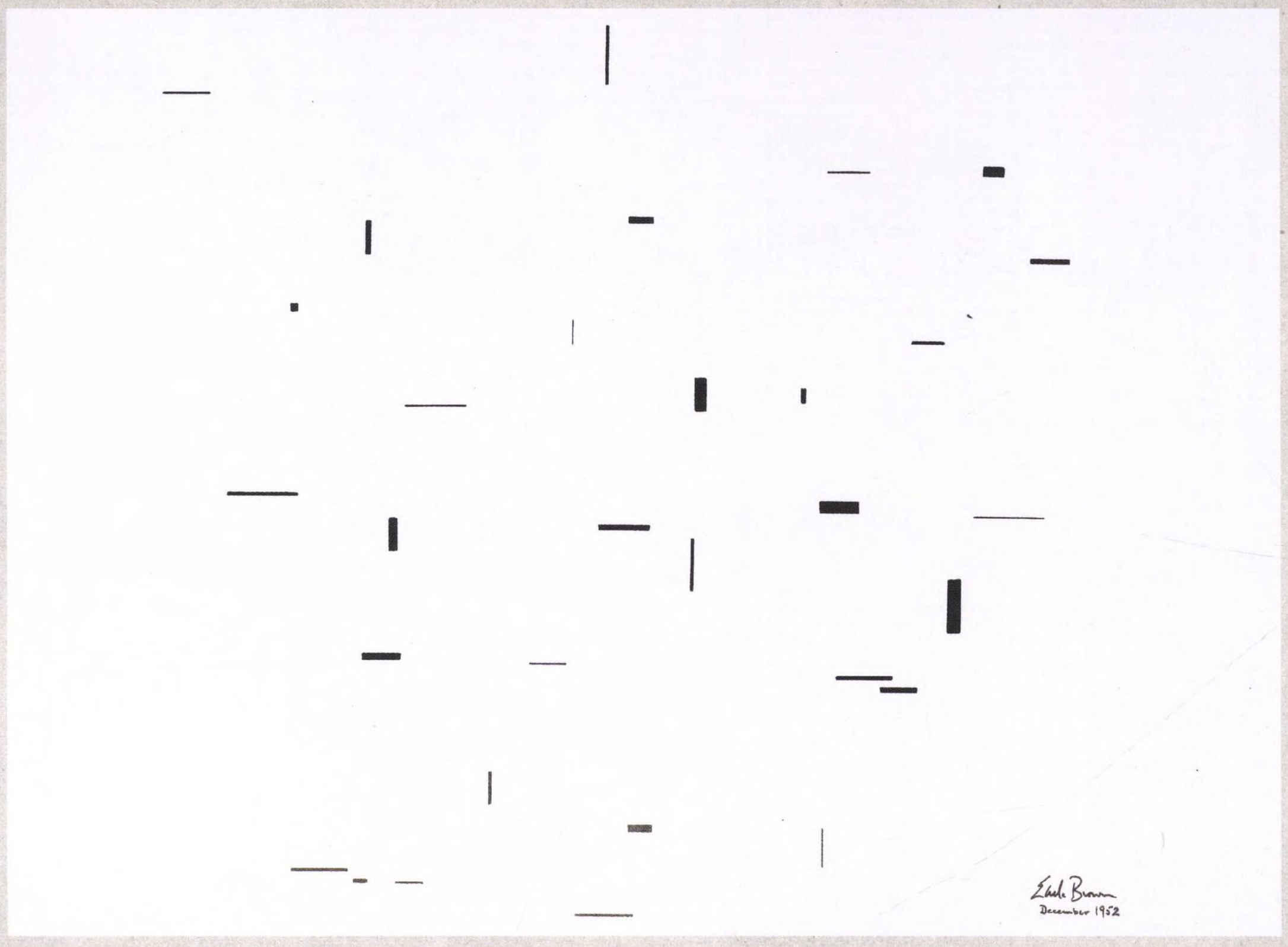
Sam Britton; *Junkspace*. For banjo and electronics. Used by permission of Sam Britton, © 2006.

Junkspace:

This is an excerpt from the Rem Koolhass essay "Junkspace," originally published in The Harvard Guide to Shopping *(Rem Koolhaas, editor). Tashcen (2001). Used by permission of Rem Koolhaas.*

If space-junk is the human debris that litters the universe, "junk-space" is the residue mankind leaves on the planet. Junkspace is what remains after modernization has run its course or, more precisely, what coagulates while modernization is in progress, its fall-out. Modernization had a rational program: to share the blessings of science, universally. Junkspace is its apotheosis, or meltdown...although its individual parts are the outcome of brilliant inventions, lucidly planned by human intelligence, boosted by infinite computation, their sum spells the end of Enlightenment, its resurrection as farce, a low-grade purgatory.

Because it is so intensely consumed, Junkspace is fanatically maintained, the night shift undoing the damage of the day shift in an endless Sisyphean replay. As you recover from Junkspace, Junkspace recovers from you: 2 and 5am, yet another population, this one heartlessly casual and appreciably darker, is mopping, vacuuming, sweeping, toweling, re-supplying... Junkspace does not inspire loyalty in its cleaners...Dedicated to instant gratification, Junkspace accommodates seeds of future perfection; a language of apology is woven through its texture of canned euphoria; "pardon our appearance" signs, or miniature yellow "sorry" billboards mark ongoing patches of wetness, announce momentary discomfort in return for imminent shine, the allure of improvement. Somewhere, workers sink on their knees to repair faded sections—as if in prayer—or half-disappear in ceiling voids to negotiate elusive malfunction—as if in confession...

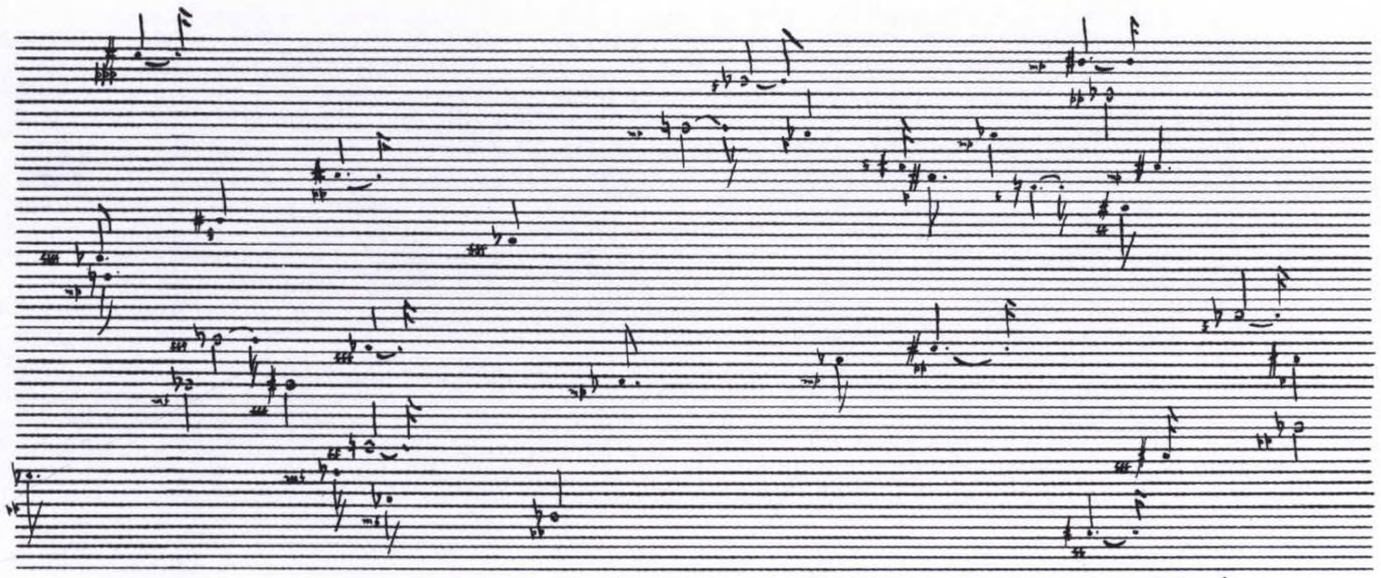


Earle Brown; *December '52*. excerpt from *FOLIO (1952/1953)* and *4 SYSTEMS (1954)*. Used by permission of the Earle Brown Foundation,

© 2006 Associated Music Publishers.

Why is it never learned that art is an exploration of experience and communication and meaning. There is always a cry for individuality and originality, but at the first indication of either one, the cry changes to nihilism, no values, anti-art, sensationalism, I suppose. This is the difference between human nature and the human mind. The human mind recognizes the essential nature of life as change, but human nature is insecure and protective.

It is well known that notation has been a constant difficulty and frustration to composers, being a relatively inefficient and incomplete transcription of the infinite totality which a composer traditionally "hears," and it should not be at all surprising that it is continuing to evolve. It serves as vocabulary and punctuation in an abstract language whose syntax is potentially infinite. The difficulty of indicating all of the articulate and inarticulate inflections in "speaking" this language are immense. I was once very envious of painters who can deal directly with the existent reality of their own work without this indirect and imprecise "translation stage." In conversation I would ask them if they could imagine sitting down and writing out a set of directions so that someone else would be able to paint exactly what they themselves would paint in all details. I thought very much about this problem, from this angle of direct contact with oneself and sounds, and it had an effect upon my notation and performance concerns.



Earle Brown; *November '52*. excerpt from *FOLIO (1952/1953)* and *4 SYSTEMS (1954)*. Used by permission of the Earle Brown Foundation,

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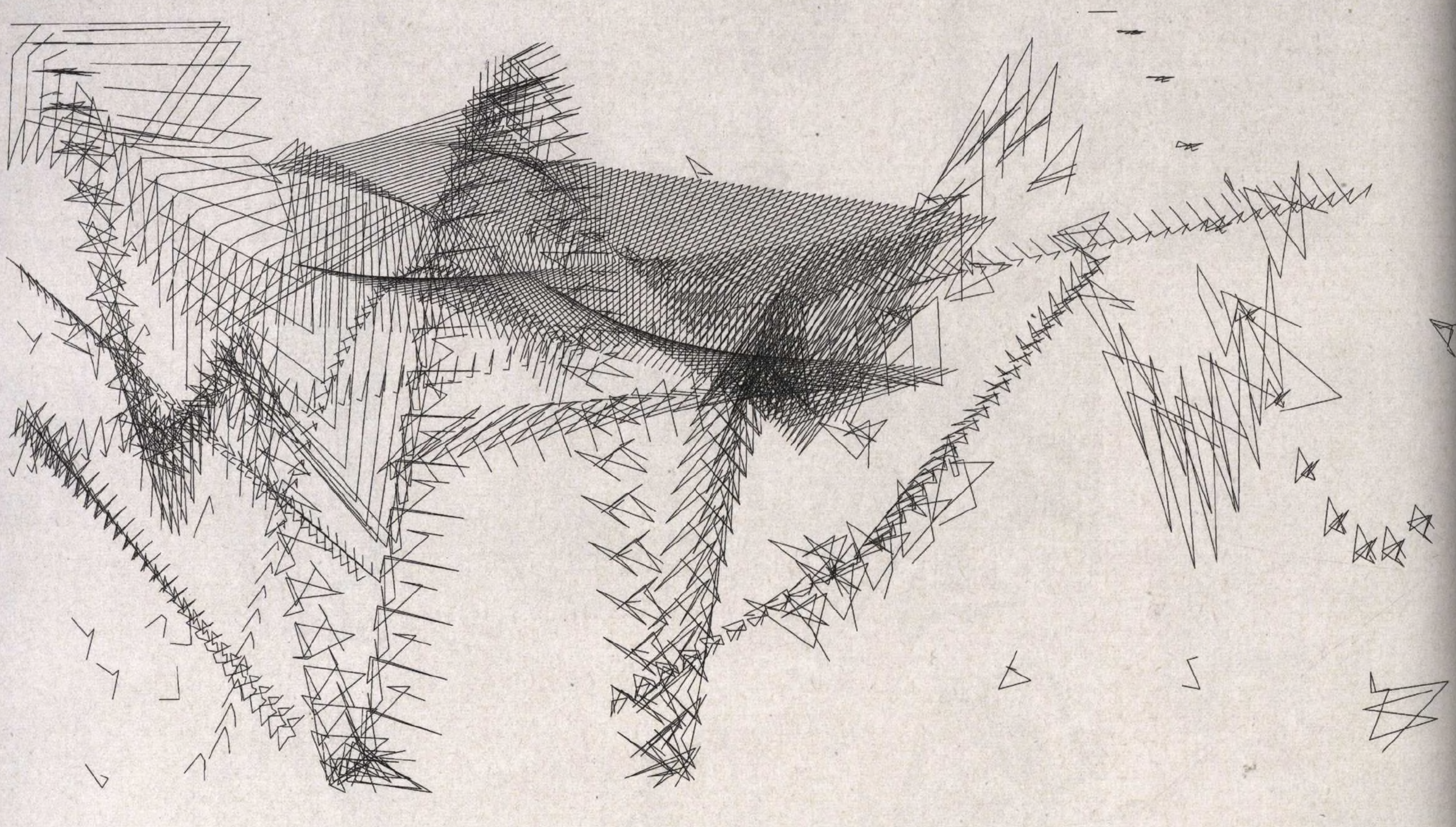
HERBERT BRÜN



Herbert Brün; *mutatis mutandis*. For solo instruments and ensembles. Used by permission of Sonic Arts Editions (Smith Publications), © 1995.

mutatis mutandis, compositions for interpreters, are ink graphics drawn by a plotter under control of a computer programmed by me. *mutatis mutandis* are not to be treated as scores, as some symbolic representation in a new notation, as sets of instructions which, if obeyed, would lead a performer to "execute" their shapes, symbols, and configurations. I have written, and shall continue to write, such scores; but with *mutatis mutandis* I intend to present a different kind of challenge.

The interpreter is invited to begin contemplating a graphic as traces left by a process that moved a pen in various directions across a plane. This process has been composed by the composer. The pen, thus, moved according to a programmed structure: rules, constraints, commands. The interpreter, now, is to construct, by thought and imagination, the interpreter's version of a structure that might leave the traces that the graphic displays.

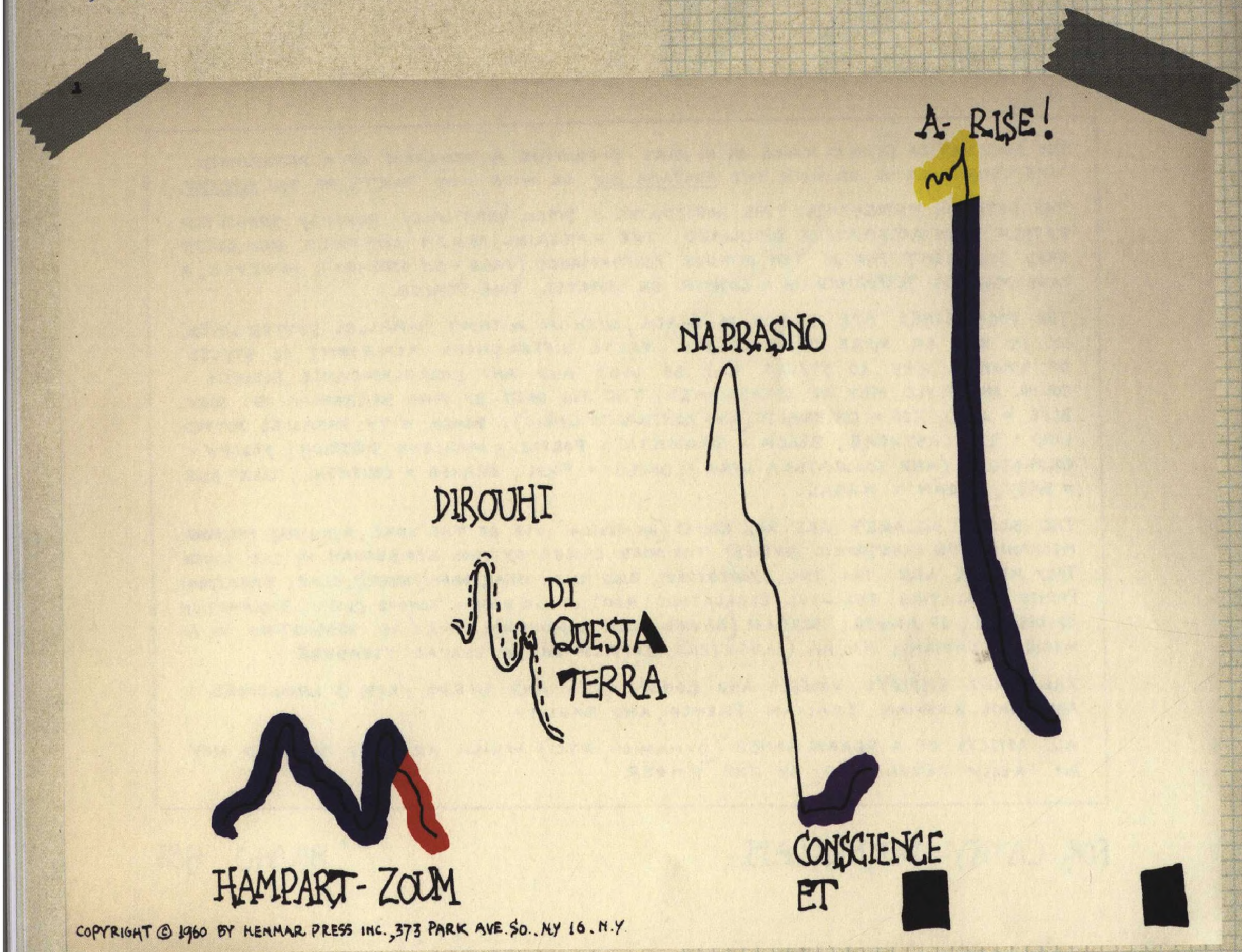
The interpreter is not asked to reconstruct my computer program. Rather, the interpreter is asked to construct the structured process by which the interpreter would like to have generated the graphics. Finally, the interpreter should compose a working model (a score?) of this structure in and for the interpreter's medium, be it sound, movement, language, film, etc., and then perform it.

Ellen Burr; *Ink Bops* are musical improvisation cards. They are to be played alone or in a group. Using melody, extended techniques, or any sound, let your imagination run wild as you find the hidden talent within. Used by permission of Ellen Burr, © 2000/2007.

Ink Bops is a unique modular graphic game that facilitates the creation of a multi-layered improvisatory piece by experienced and novice musicians alike. They are presented in a poker-deck size of 56 customized cards as a tangible way to access one's creativity away from the written page and traditional harmonic structures. The backs are blank and the front sides have a linear drawing. There are 112 possibilities as the cards can be set up with either side on the bottom.

When I first developed *Ink Bops*, in 2000, they were just called "Improv Cards." I was meeting with bassoonist Sara Schoenbeck, percussionist Brad Dutz, and trombonist Scot Ray on a bi-weekly basis over a period of two years. I made around sixty 3x3-inch ink lines, inspired by Mel Powell's quip that melody "either goes higher, lower or stays the same."

All of us were accomplished improvisers/composers with a strong sense of form, and compositional techniques such as repetition, sequence, imitation, and complementation. I've always thought of improvisation as real-time composition, and I was looking for a way to create a multi-part complexity in an improvisational setting as well as a way to organically change the instrumentation, i.e., asking players to be tacit.



John Cage; *Aria*. For a voice of any range. Used by permission of C.F. Peters, © 1958.

Aria: the aria may be sung in whole or in part to provide a program of a determined time-length, alone or with the "Fontana Mix" or with any parts of the "Concert."

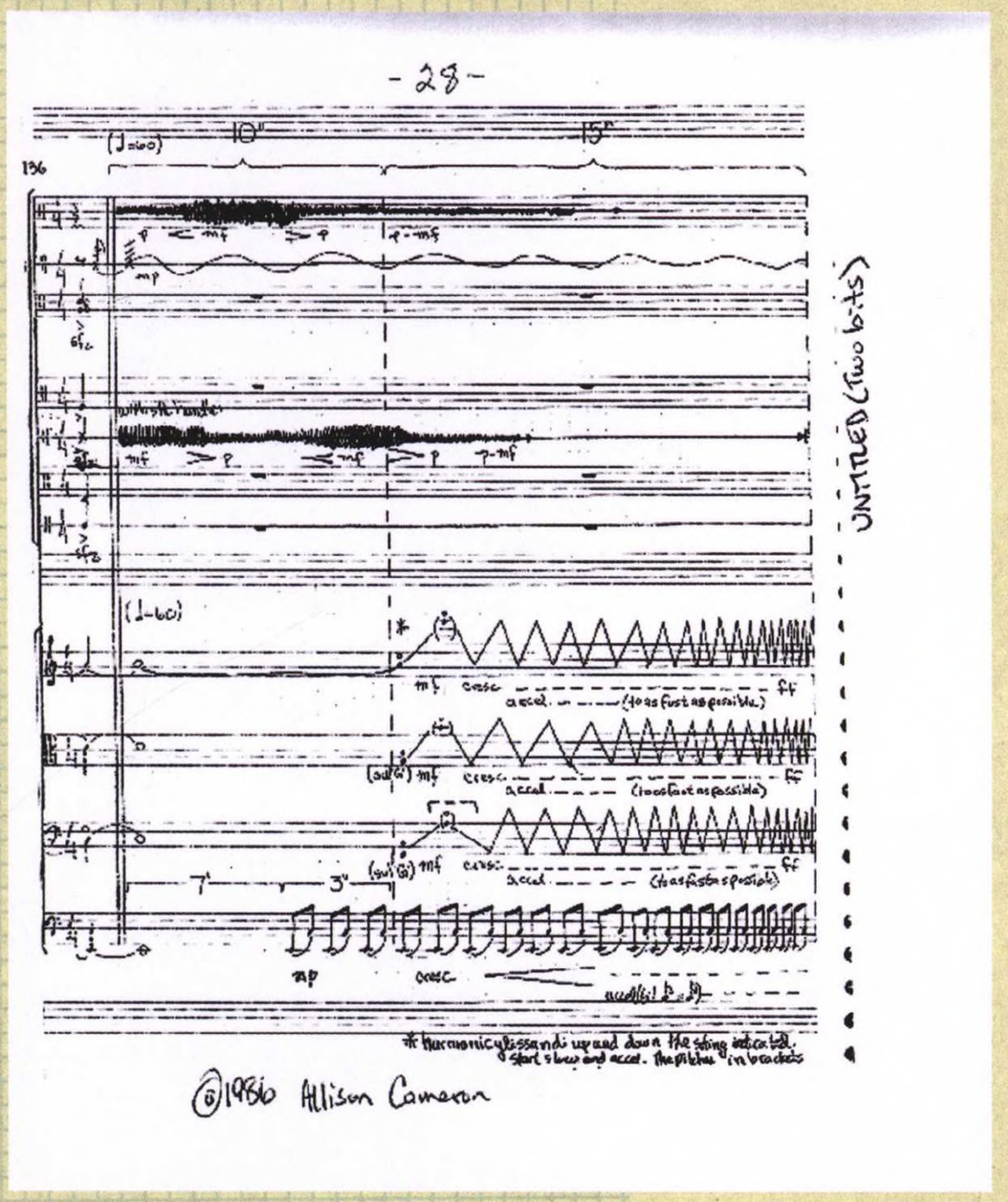
The notations represent time horizontally, pitch vertically, roughly suggested rather than accurately described. The material, when composed, was considered sufficient for a ten-minute performance (1 page = 30 seconds); however, a page may be performed in a longer or shorter time period.

The vocal lines are drawn in black, with or without parallel dotted lines, or in one or more of 8 colors. These differences represent 10 styles of singing. Any 10 styles may be used and any correspondence between color and style may be established. The one used by Miss Berberian is: dark blue = jazz; red = contralto (and contralto lyric); black with parallel dotted line = sprechstimme; black = dramatic; purple = Marlene Dietrich; yellow = coloratura (and coloratura lyric); green = folk; orange = oriental; light blue = baby; brown = nasal.

The black squares are any noises ("unmusical" use of the voice, auxiliary percussion, mechanical or electronic devices). The ones chosen by Miss Berberian in the order they appear are: *tsk, tsk*; footstomp; bird roll; snap, snap (fingers); clap; bark (dog); pained inhalation; peaceful exhalation; hoot of disdain; tongue click; exclamation of disgust; of anger; scream (having seen a mouse); *ugh* (as if suggesting an American Indian); *ha, ha* (laughter); expression of sexual pleasure.

The text employs vowels and consonants and words from 5 languages: Armenian, Russian, Italian, French, and English.

All aspects of a performance (dynamics, etc.) which are not notated may be freely determined by the singer.

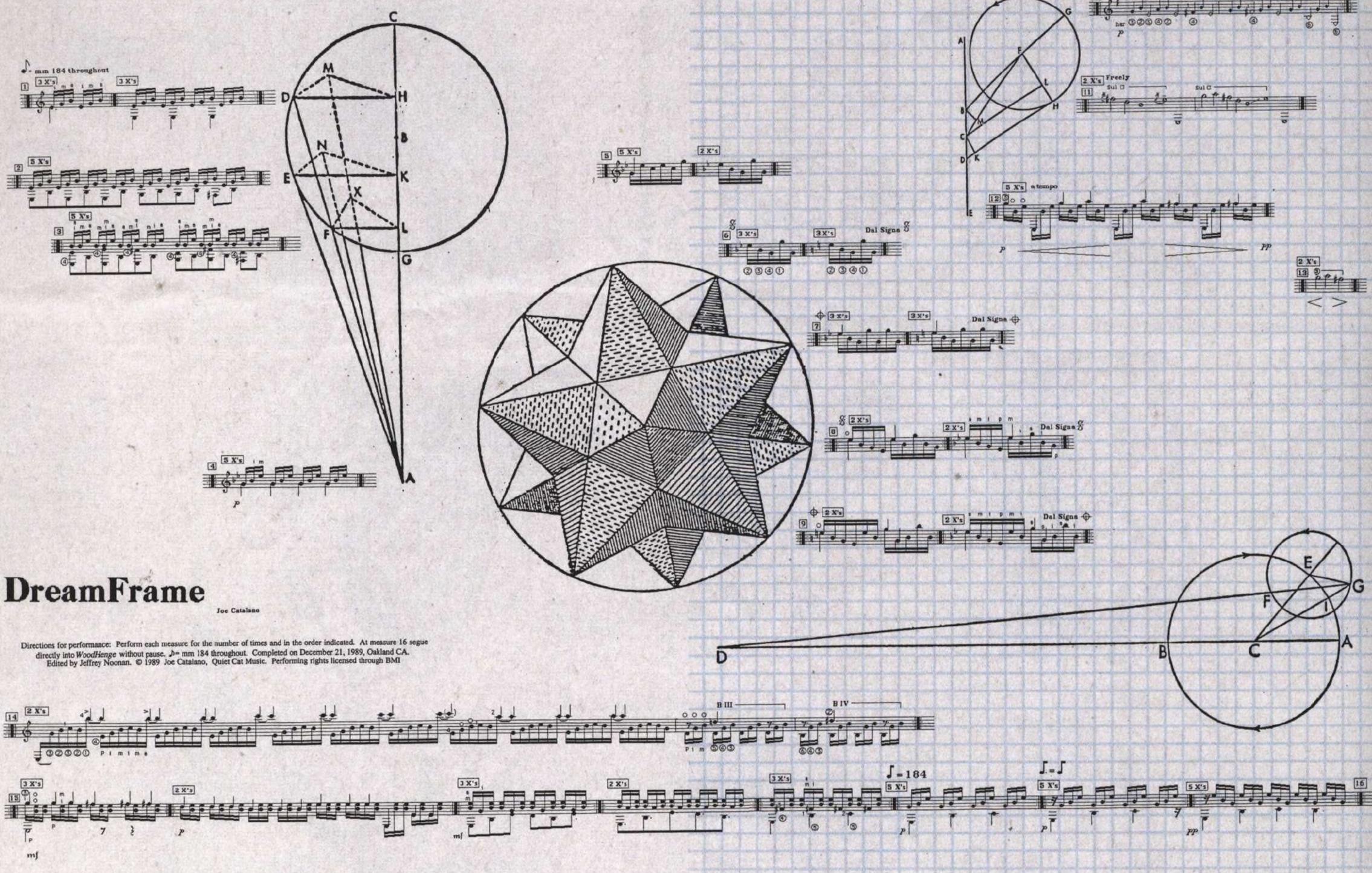


Allison Cameron; *Untitled* (*Two Bits*). For string quartet, double bass, and five percussion.
Used by permission of Allison Cameron, © 1986.

[redacted]

Two Bits was constructed in 1986 at the University of Victoria, British Columbia, Canada, from a graphic image of a circle divided into multiple time frames. Scored for double bass, string quartet and 5 percussionists the work was heavily influenced from the structure of Javanese Court gamelan music. I used "found" sounds in the work including a wind chime made from piano tuning pegs along with a brake drum technique called dead-sticking (hitting and muting the instrument simultaneously). I developed a specific sound world for the piece through the use of extended techniques and in turn also created an alternate graphic notation for the score.

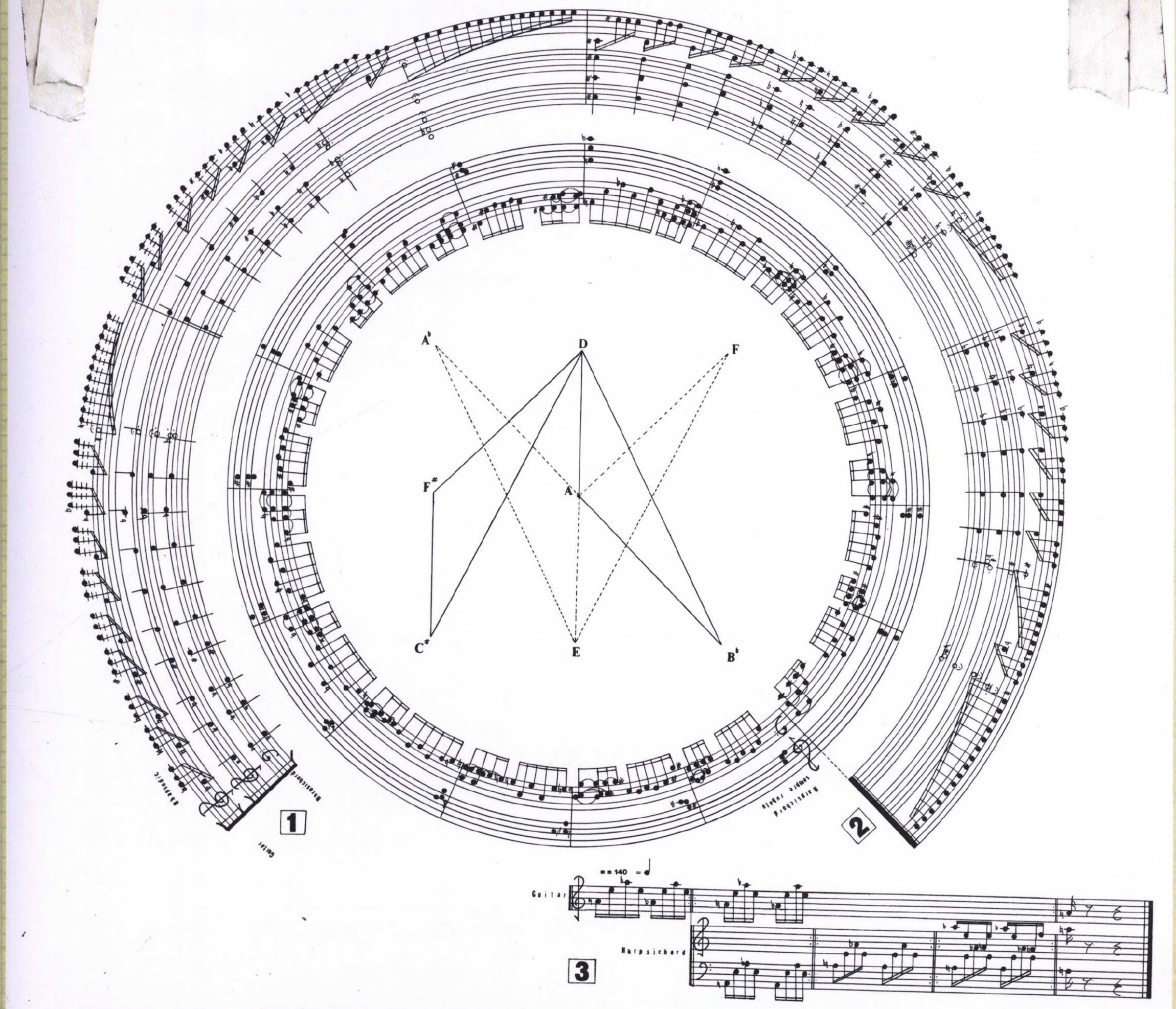
JOE CATALANO



Joe Catalano; "DreamFrame" from *Five Terrestial Projections for Guitar and Other Instruments*. Used by permission of Wendy Burch (Catalano), © Quiet Cat Music, BMI, 1989.

Five Terrestrial Projections for Guitar and Other Instruments was conceived as a set of five chamber pieces that highlight the guitar paired, variously, with cello, piano, harpsichord, harp, flute, recorder, and bass clarinet. The centerpiece in this set is a work for guitar alone. Commissioned by, and dedicated to, Jeffrey Noonan, Catalano has set out to extend the literature for the guitar and to embody in it the developments of pulse/pattern minimalist music. This set of five distinct pieces, each lasting from 20-30 minutes, exploits a different technique of minimalist musical language.

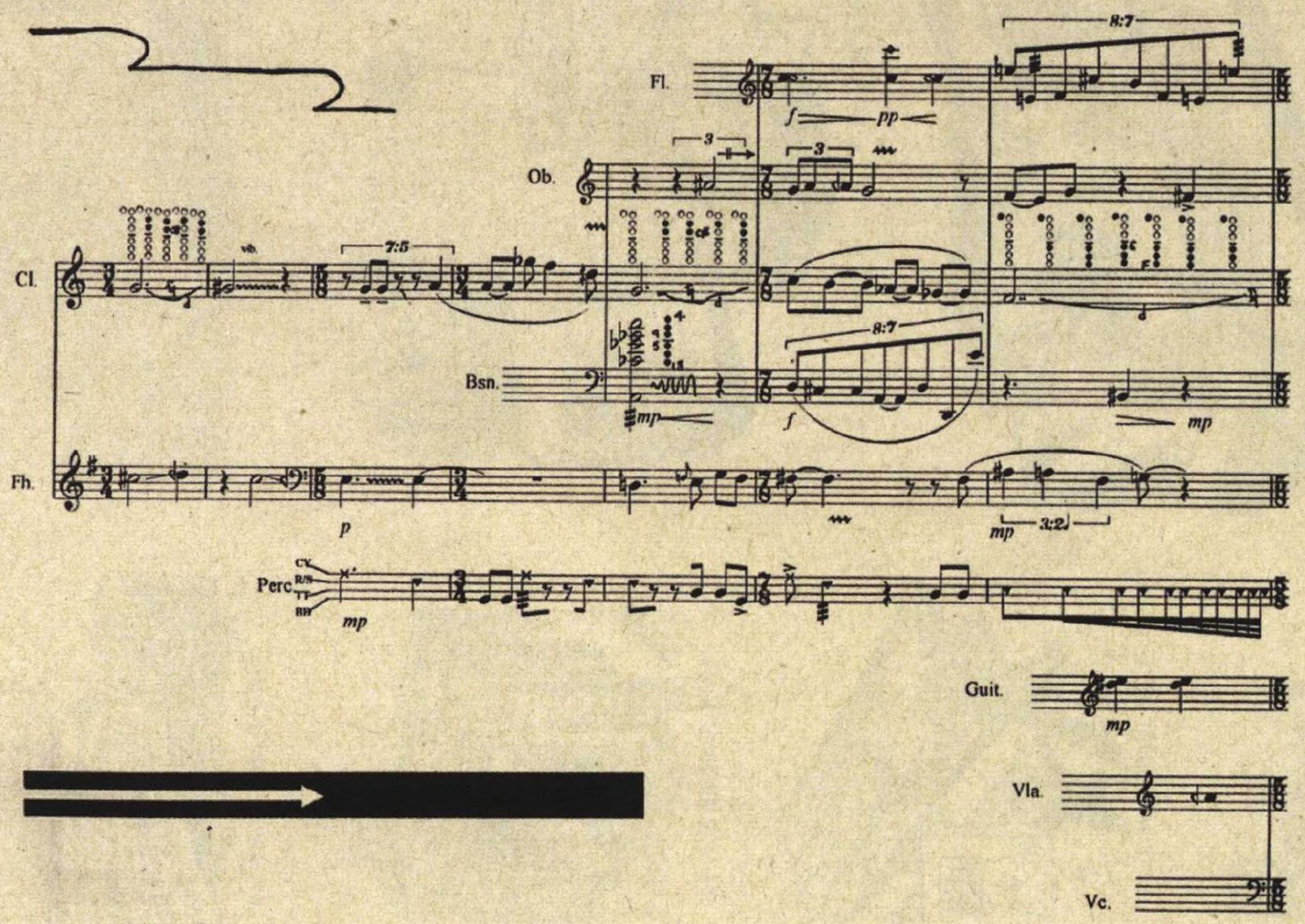
Each piece is composed on a single sheet of paper, 24 in. by 36 in., worked into a score of graphic notation. Each piece also has a different design based either on a graphic pattern or structure.



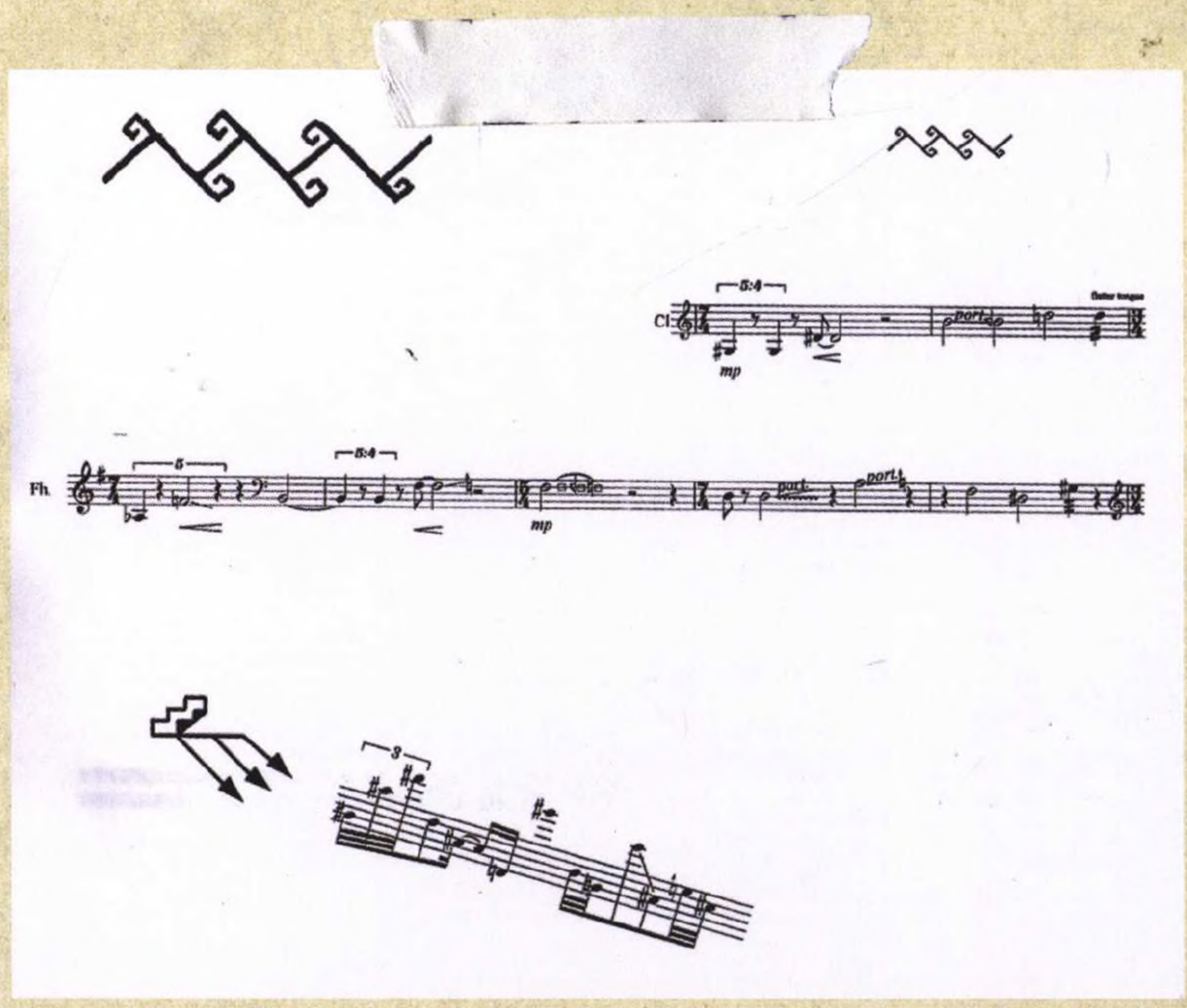
Joe Catalano; "DreamFrame" from *Five Terrestial Projections for Guitar and Other Instruments*. For guitar alone.

Used by permission of Wendy Burch (Catalano), © Quiet Cat Music, BMI, 1989.

Dream Frame (From *Five Terrestrial Projections for Guitar and Other Instruments):* This piece takes both its graphic and musical inspiration from Ptolemy's *The Alma-gest*, Nicolaus Copernicus's *On the Revolutions of the Heavenly Spheres*, and Book Five of Johannes Kepler's *The Harmonies of the World.* Much of the graphic content of this broadside is a reworking of these three writers' celestial diagrams. Kepler really did believe in a "harmony of the spheres," Copernicus only partially worked out a correct celestial mechanics, and Ptolemy put the earth at the center of the universe. Each of these intellectual constructs was part of a dream world, a vision of a reality which had only a relative truth.

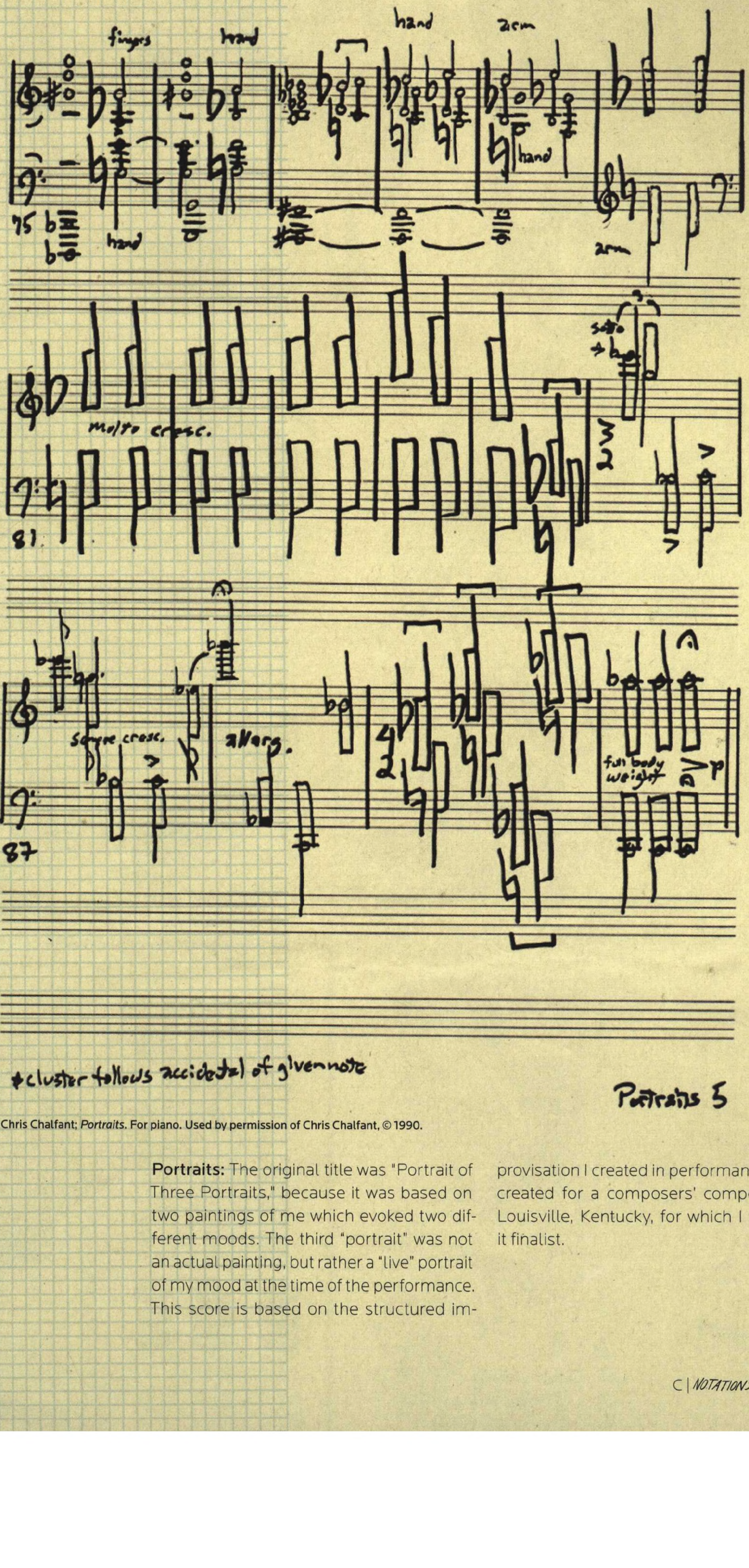


...lahgo adil'i dine doo yeehosinilgii yidaaghi means "...acts differently when near strangers." The work is intended for chamber musicians who are not comfortable with a total free improvisation situation, and so provides them pictograph guides to aid in the musical realization. Due to the nature of the symbols (original drawings by me, inspired by Navajo jewelry and silversmithing), the performers sometimes feel an obligation to create a music based on their best assumptions of what they believe is wanted.



Raven Chacon; *...lahgo adil'i dine doo yeehosinilgii yidaaghi*. For any large ensemble.

Used by permission of Raven Chacon (Dineyazhe Music), © 2004.



Chris Chalfant; *Portraits*. For piano. Used by permission of Chris Chalfant, © 1990.

Portraits: The original title was "Portrait of Three Portraits," because it was based on two paintings of me which evoked two different moods. The third "portrait" was not an actual painting, but rather a "live" portrait of my mood at the time of the performance. This score is based on the structured improvisation I created in performance. It was created for a composers' competition in Louisville, Kentucky, for which I was merit finalist.

JEF CHIPPEWA

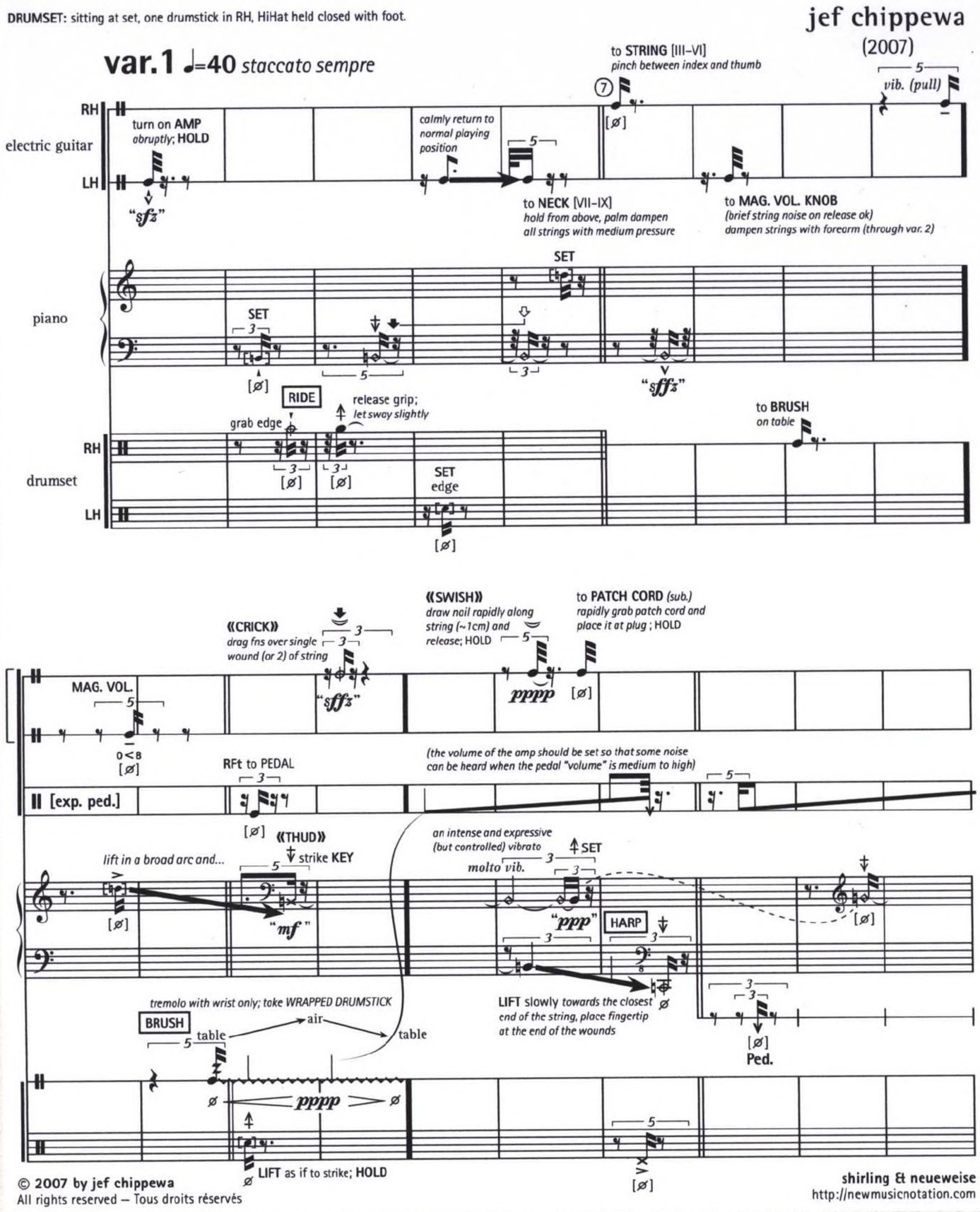
for asamisimasa

...without...

GUITAR (*amp volume "normal" playing level but amp is OFF, all volume knobs and pedals off*): sit in chair, feet flat on ground; wrap cable through strap from behind and leave hanging freely; move PICKUP switch to neck; reach over with LH to your right side to the guitar amp ON-switch; **HOLD...**

PIANO: standing between bench and keyboard; hands resting on keylid and piano frame, right foot positioned to be able to pedal.

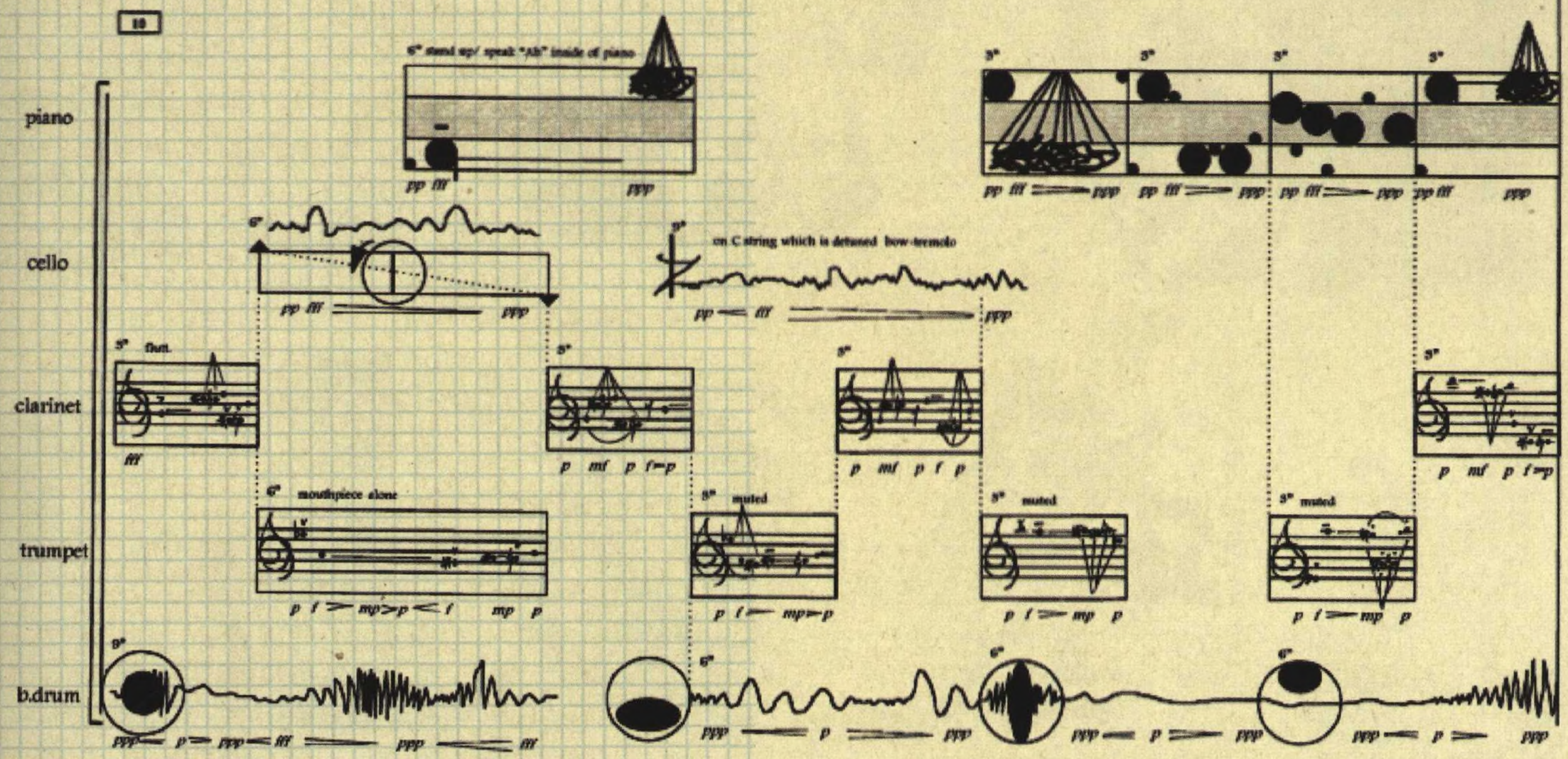
DRUMSET: sitting at set, one drumstick in RH, HiHat held closed with foot.



Jef Chippewa; *...without...* (page 1). For guitar, piano, and drumset. Used by permission of Jef Chippewa, © 2007.

...without...: In recent works each individual sound (typically not repeated) has been so precisely composed that a significant amount of text accompanies many of the sounds, notes, and actions the musician is to perform.

In the opening two variations of *...without...*, the minute details of the actions required to produce sound on the instruments—the mechanics of the performance—are the compositional materials; for the most part, no sound can actually be heard. For example, with the *sffz* accent early in the piano part on an already-depressed key we "see" the result but "hear" nothing. Gradually more and more sounds result from the actions until in the third variation conventionally produced sounds appear, the actions now a means to produce the composed sounds.



Kyong Mee Choi; *Conceptual View of Worlds I* (page 9). For piano, cello, clarinet, trumpet, and percussion.

Used by permission of Kyong Mee Choi, © 2002.

Kyong Mee Choi

As a composer, I have been interested in graphic notation and have used it extensively to incorporate extended techniques or as a component of electro-acoustic music scores.

My interest toward graphic notation can be traced all the way back to my early childhood when I developed a genuine passion for calligraphy, science, geometry, and visual art, along with music. In this sense, graphic notation for my composition is not a result of studying contemporary music, but rather an outcome of my personal journey that integrates diverse interests. Calligraphy, for instance, which I did when I went to elementary school, has become essential for my creative process in general. I use a calligraphy pen to create certain stems or lines in a score. This helps to generate the impression of a smoothly flowing atmosphere. These elegant lines are juxtaposed with sharp angles, charts, and rectangular shapes, which derive from my fascination toward geometric shapes and symbols. In college, studying inorganic-chemistry modeling fascinated me enormously due to the intricate structures of molecules. In music, visualizing the structure of a piece and imagining the shape of sonic events inspire me every time I compose. Therefore, graphic notation is a natural byproduct of various intellectual activities that interest me.

The other aspect of graphic notation that I found attractive is that it makes each score incredibly unique and original. I like the idea of having my personal taste reflected in my score, as long as the score clearly communicates the musical intent. However, I am not using graphic notation exclusively, nor am I discarding traditional practice. It is quite the opposite. I incorporate traditional notation as necessary (sometimes with customizations to better elide with the graphic notation). In this way, my scores combine traditional elements with graphic figures. Each score has a different look depending on the type of instrumentation, musical style, and medium. I have developed a score design and preparation procedure that I have used for several compositions, but still vary many aspects of my approach depending on the piece. Certain pieces suggest more abstract shapes than others. In some pieces, I indicate all of the sonic events with different shapes, while in other pieces I use only a few figures associated with word-expressions. Scoring for both acoustic and electro-acoustic sound presents a unique challenge. Generally speaking, electronic scores only include a small percentage of the sounds, and usually only those that are needed to help the performer read the score. However, I like to invent particular symbols for each electronic sound event so that the symbols can be easily associated with the sound. This makes the music easier to learn and the score easier to read. Many performers like to see these electronic sound symbols in a score since it is helpful for them in conceptualizing the electronic part, and in being less reliant on a click-track or stopwatch.

One of the other features that have motivated me to create graphic notation is my interest in both graphic software and handwriting. Tools are quite important since they can accelerate and stimulate the creative process, as well as restrict or inhibit. I tend to use graphic software to generate a generic format for the score; this takes care of the things that are too tedious to do by hand and provides a score skeleton that looks neater when printed. Having this digital file also allows for easy duplication of the non-hand drawn elements. Outside of this skeleton, the score has areas left empty for my handwriting, allowing me to personalize each score. If the piece requires parts, I incorporate the symbols created for the score in the parts via a notation program. For electro-acoustic music with a solo instrument I prefer to use graphic software that is primarily designed to draw shapes or symbols.

Apart from all of the intriguing aspects of graphic notation, I also see my score as an artwork. I have found that even those who are not trained musicians appreciate my scores as a form of visual art. Notating my music graphically is a satisfying way to bring my enthusiasm for music and art together.

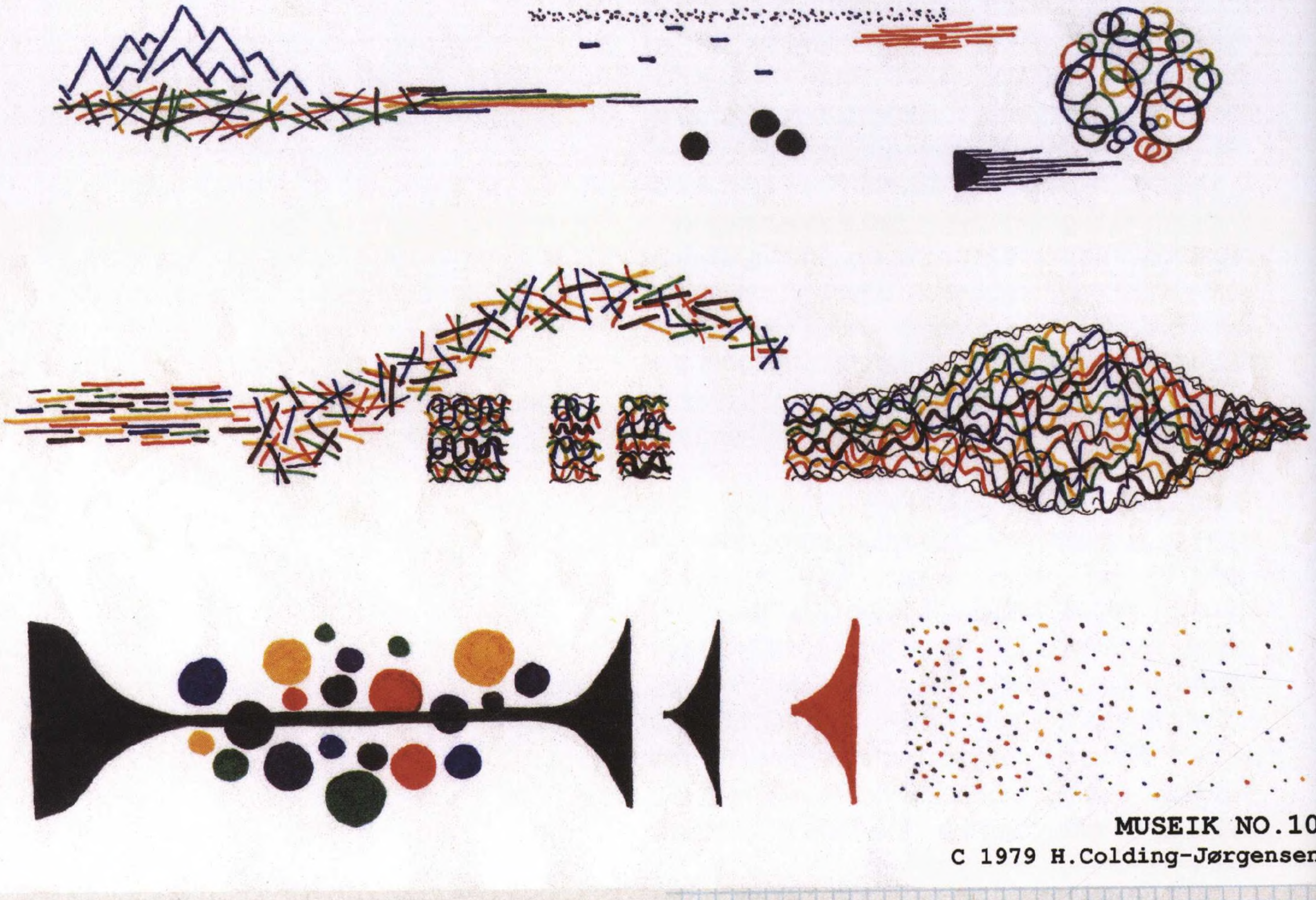
As I described earlier, I think a music score should be functional. This means it needs to com-

municate its meaning to performers clearly. If the graphics interfere with communication, the score is no longer a score and is only visual art. It is true that some performers have a preference to read from a traditional score—but it is also true that performers' capacity and readiness to read graphic notation have changed tremendously.

I have found that many performers are willing to incorporate graphically notated music into their repertory, and some even seek out new and innovative music, often with very unique and personal notation. In order to accomplish both a functional and artful result, I pay careful attention to the ease of reading of my scores. I make sure to include performance notes that explain all symbols that are not already commonly known.

Some might think graphic notation is heavily biased toward an improvisational style of composition. There might be some truth to that in the sense that there is usually some aspect of indeterminacy in graphic symbols or shapes. On the other hand, in my electro-acoustic scores I use graphics to indicate exact events with exact timings. Some also think graphic notation is an outgrowth of the desire to negate traditional notation. But I see it more as an extension or expansion of traditional practice. I also see graphic notation as being flexible enough to accommodate a broad spectrum of musical style and approach, regardless of the composer's compositional voice. The best way to decide what is the most appropriate scoring option is to find how to help performers to understand and realize a particular piece in the best way possible. I have found that adding a graphic dimension to my scores gives me room to be creative and to put a personal stamp on my music. It is great to invent something unique of one's own. Because each piece, after all, is one-of-a-kind.

Since graphic notation naturally evolved from my personal interest and background, it has become essential for my compositional process, going beyond its original purpose as instructions to performers.



Henrik Colding-Jørgensen; *Museik No. 10*. For any instrumentation. Used by permission of composer, © Henrik Colding-Jørgensen, 1979.

Museik No. 10 (1979): The society for contemporary music, DUT, in Copenhagen, Denmark, decided in 1979 on its first Children's Music Week, and I was entrusted with the task to direct and conduct a group of very young instrumentalists, and to compose a piece of music for these children to premiere as part of the program. We would have one week together, which meant three rehearsals and one recital, so I took a deep breath and made an entirely graphic composition for the group of 10 or 15 teenagers, who applied for participation, playing various instruments. I had been employing optic and graphic notational elements in my compositions for a number of years, but this was my first entirely graphic score.

The concepts of aleatoric improvisation and graphic notation were central in the composers' milieus in many countries at that time, at a professional level. In 1971, I participated in a symposium in Stockholm, Sweden, with subjects relating to contemporary composition, and there I met the American composer Earle Brown. He lectured about rehearsing and directing performances of graphic and aleatoric notations, with discussions of a lot of examples drawn from his wide experience with soloists, orchestras, and ensembles, both in his own works and other compositions. That meeting was a great inspiration to me for many years to come, and still some of his enlightening statements at that time come to my mind when working with aleatoric notation.

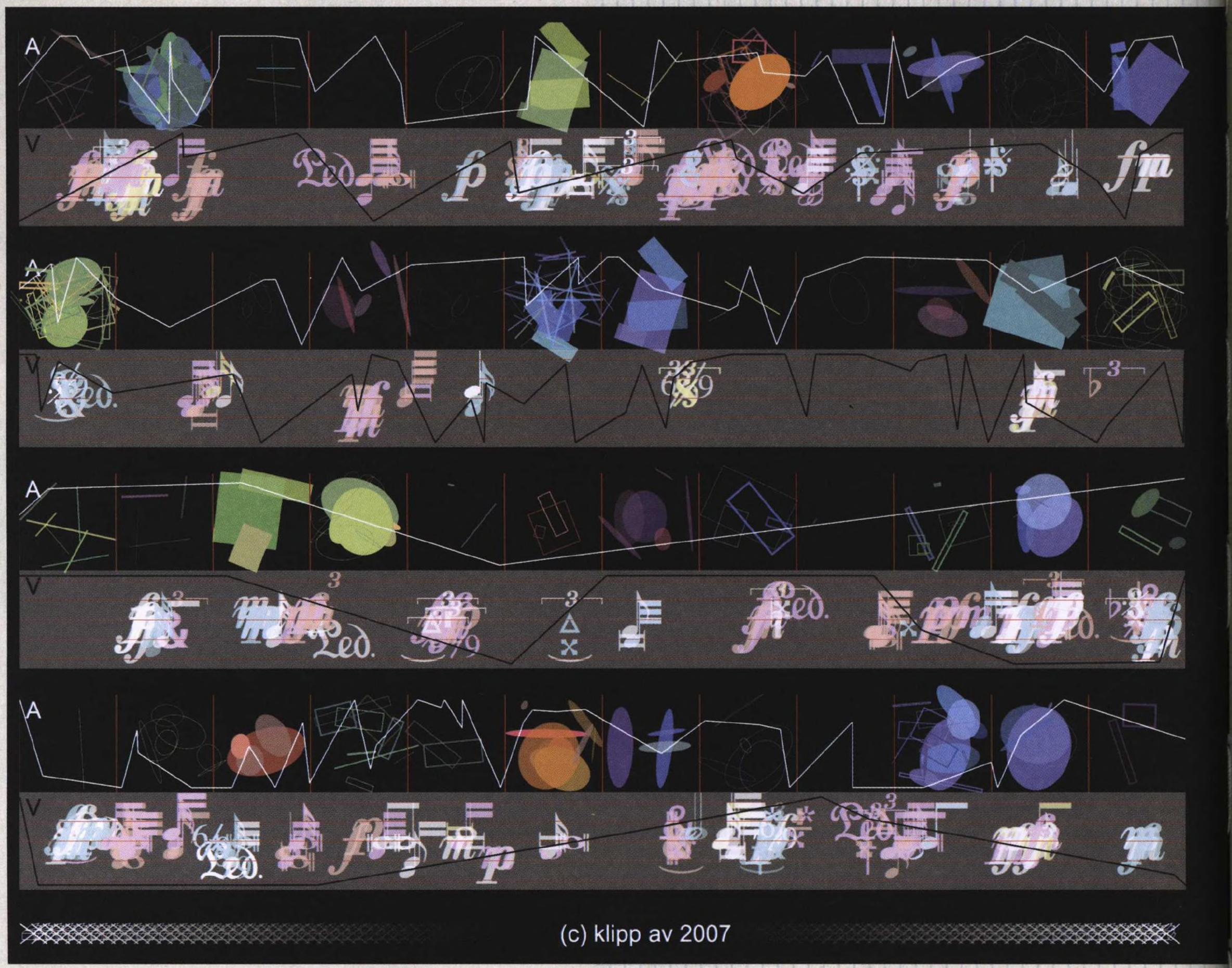
The word "Museik" is a combination of the Danish words "museum" and "music," derived from the fact that the rehearsals and concert took place in the concert hall of the State Art Museum, Copenhagen, and the music week was realized in cooperation with the museum. There are ten sheets in all, nine of which can be used for inspiration and rehearsal as well as performance. Sheet No. 10 is designed rather for a shaping of a concert performance, and copies were placed on the music stands at the first performance.

And here the supplementary instructions end. There are no predefined "right" ways to perform or rehearse this music or to interpret the graphics. You have to find your own ways to sort out ideas and inspirations, and with an ensemble you also have to establish a trusting and confident cooperation. When playing from these kinds of graphics, we are not troubled by instrumental limitations, age, experience, technical musical elements, counting of bars or beats or such, but alert and open to the visual impulses and inspirations, beyond words or semantics. Regardless of our level of professionalism we can focus on the music, forget time and place, and share—with the audience—the intense, suspended moments of expressive life.

Isn't this what music is about?

Henrik Colding-Jørgensen; *Museik No. 9*. For any instrumentation. Used by permission of Henrik Colding-Jørgensen, © Henrik Colding-Jørgensen, 1979.

NICK COLLINS

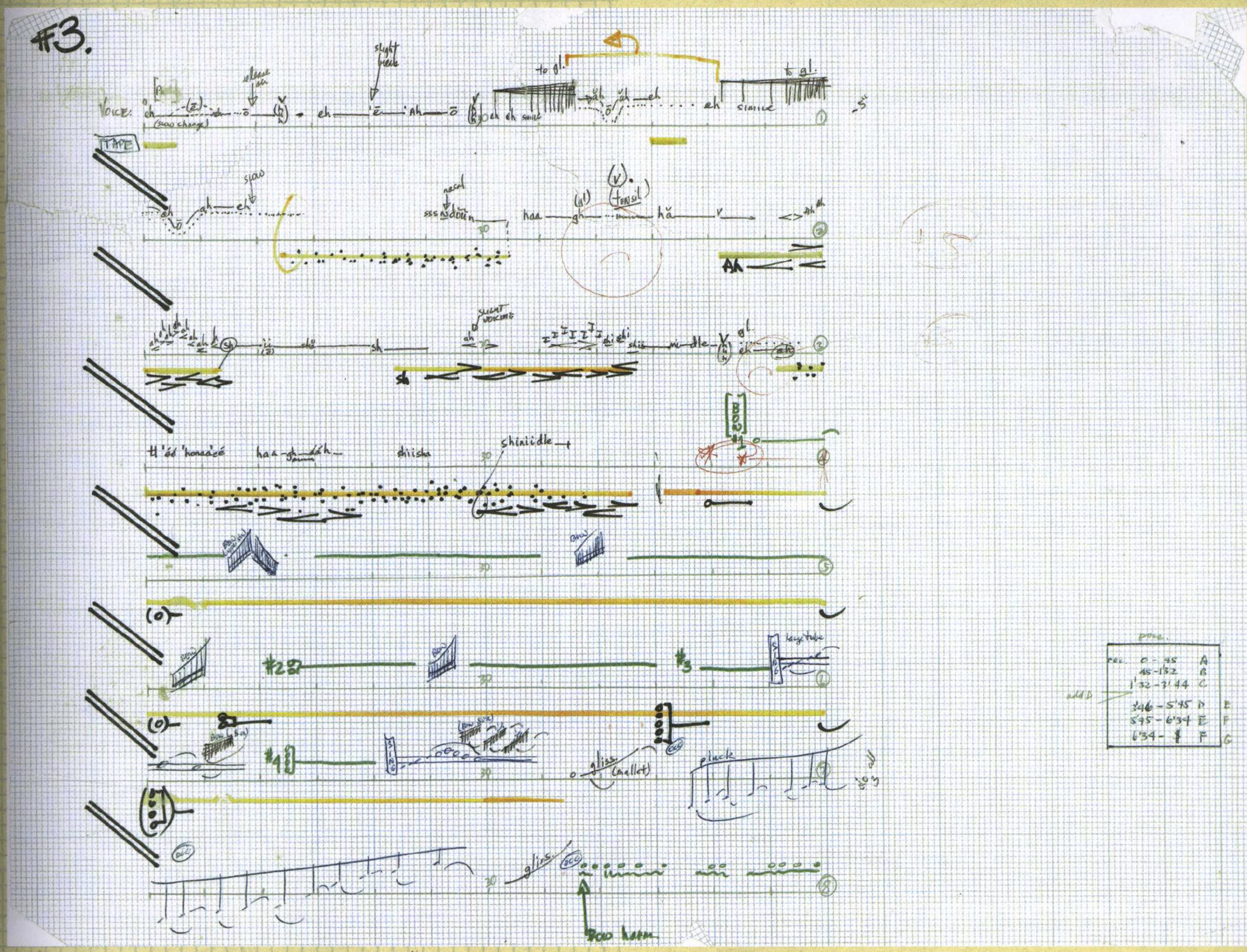


Nick Collins; *avscore 37*. For a live audiovisual performance group. Used by permission of Nick Collins, © klipp av 2007.

avscore37: This audiovisual score is intended for realization by a live audiovisual performance group. In full generality, such a score might consist of a visual stimulus for the audio production, and an audio stimulus for visuals, but given the constraints of a book format, and the difficulties of cleanly monitoring a separate audio stream as well as the main audio in a live concert, this is perhaps better conceptualized as a graphical score alone.

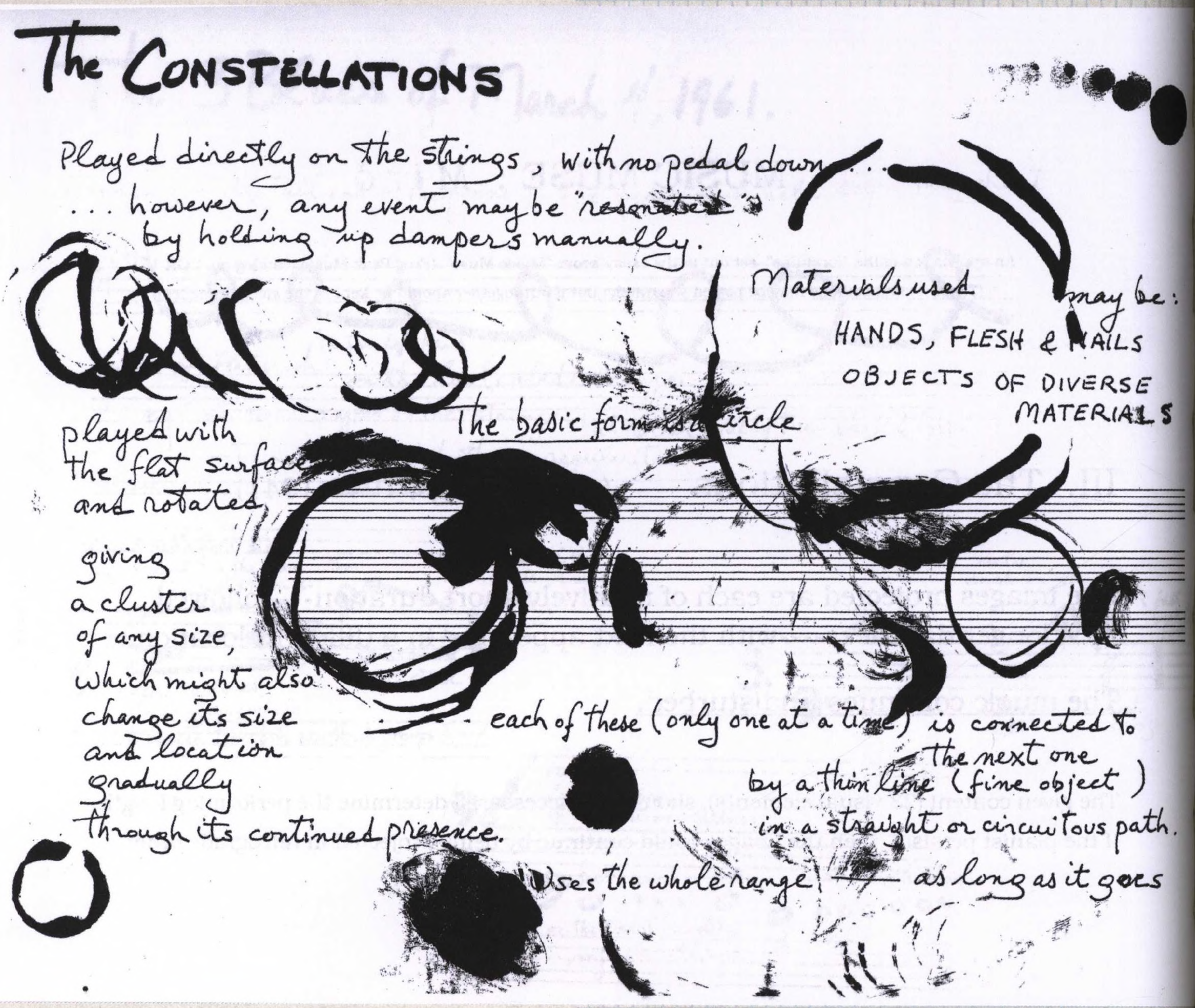
In this instantiation, a graphical score line for the "music" (A) accompanies a "musical" score line for the visuals (V), in a traditional scanning pattern of left to right and down the page between A+V systems. The player labeled A must interpret a succession of framed abstract scenes, while player V follows a continuous staved timeline. The particular score included here involves four systems; performers may use any portion of the score for a given realization, selecting their own playback speed (which might be marked out in terms of frames per minute by an external timer). The continuous curves on each part represent the degree of desired correlation between audio and visual modalities, on a scale from a lower limit of attempting full contest or independence, to a higher limit of full inter-modal co-operation and coincidence; because there are two curves, audio might be attempting to follow visuals while visuals ignore or try to avoid the audio. These envelopes may be loosely interpreted as suggestions for conformance and complementation of activity, given the additional constraints of the scenes, or fully adhered to as the primary goal, at the performer's decision. Some slight spillage between frames and parts is also evidenced and may form a further abstract cue.

The audiovisual score was created by a generative computer program; while many further variants could be exhibited, this particular score is advanced as good evidence of the potential output of the program. The program, however, could be used for the creation of novel scores as spurs to new guided improvisations in advance of, or during, concert performance.



David Cope; *Sketch for Cello Concerto*. For cello concerto. Used by permission of David Cope, © 1982.

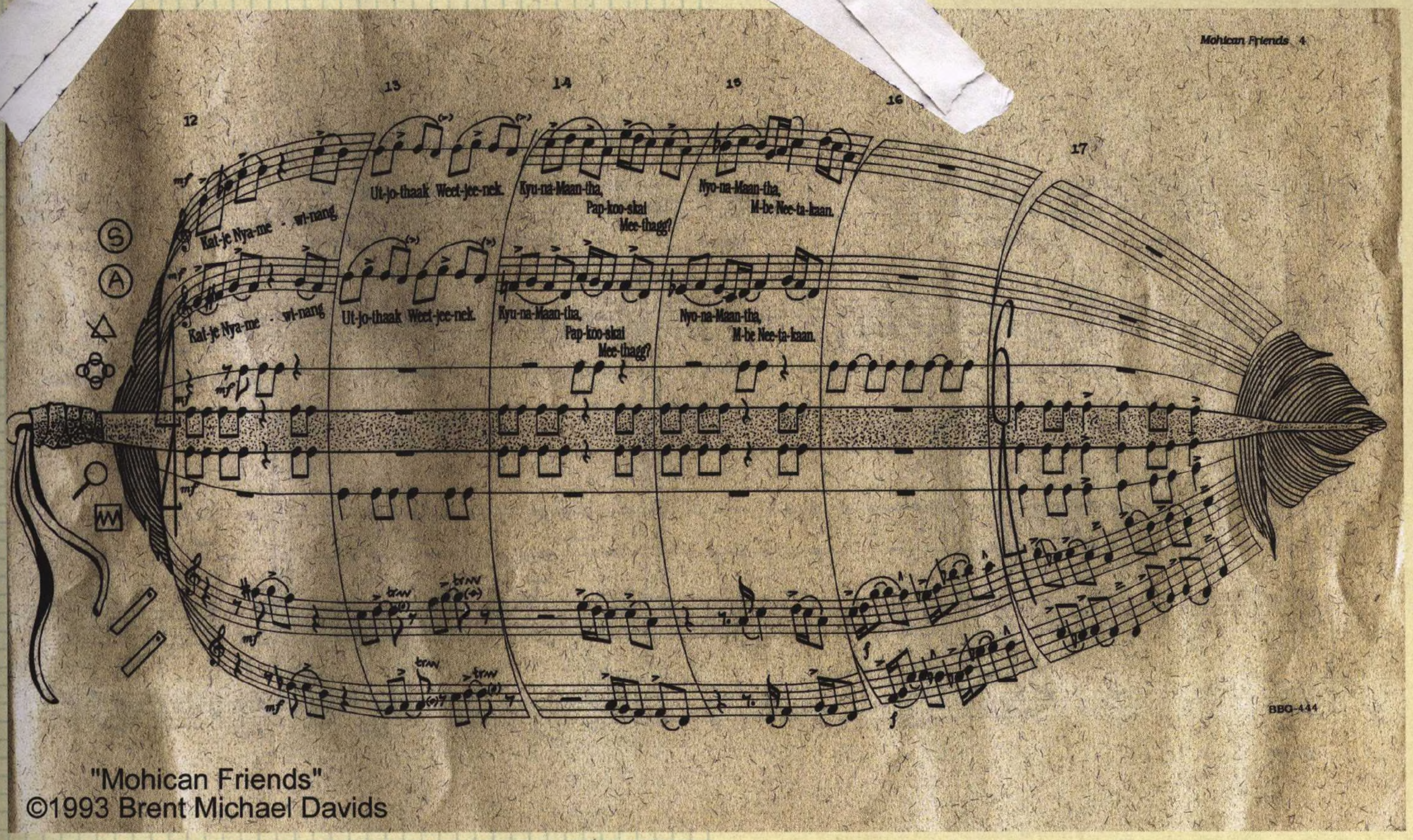
Sketch for Cello Concerto was completed in 1982 for a work not yet complete. The graphic nature of the score actually has significant musical meaning. The multiple staves each describe a time line, with texture, range, relative motion, and other parameters laid out in temporal relationship. Such sketches often serve as scores for improvisation until a work is concrete enough to allow other, typically more traditional notation.



Philip Corner; *The Constellations.* For piano. Used by permission of Philip Corner, © 2004.

The Constellations (23 paintings, 1940-1941): The images projected are each of relatively short duration—followed by a longer darkness—with the next appearing in a different location. The music continues undisturbed.

The given content (23 visual elements) should not necessarily determine the performing length. If the pianist persists, then the images could continue by being projected in retrograde order.



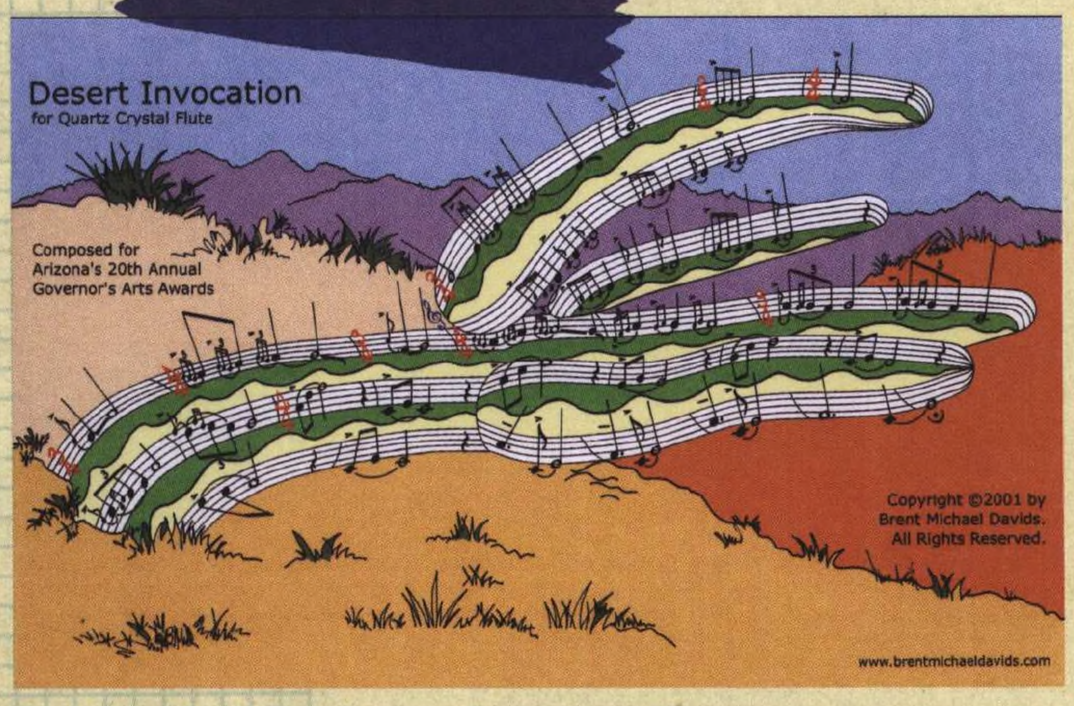
Brent Michael Davids; *Mohican Friends.* For youth choir, two soprano flutes, triangle, shaker, tambourine, and powwow drum. Used by permission of Brent Michael Davids, © 1993.

Mohican Friends teaches introductory vocal sounds and words in the Mohican language while challenging young vocalists with good contemporary composition. The Mohican text reveals something of what a traditional Mohican thinks about, namely the importance of good familial relationships and about respecting others. A good Mohican respects our animal and bird relatives too, and searches out responsible and good-hearted ways to share our lives with the world. Mohicans do not strive to be domineering over the animals or the land.

We must work to live a balanced life with our world and treat others of the world as good-hearted relatives. Our earth, birds, animals, and humans are intimately related. We are all family members in this world. Sometimes it is difficult for us to understand each other.

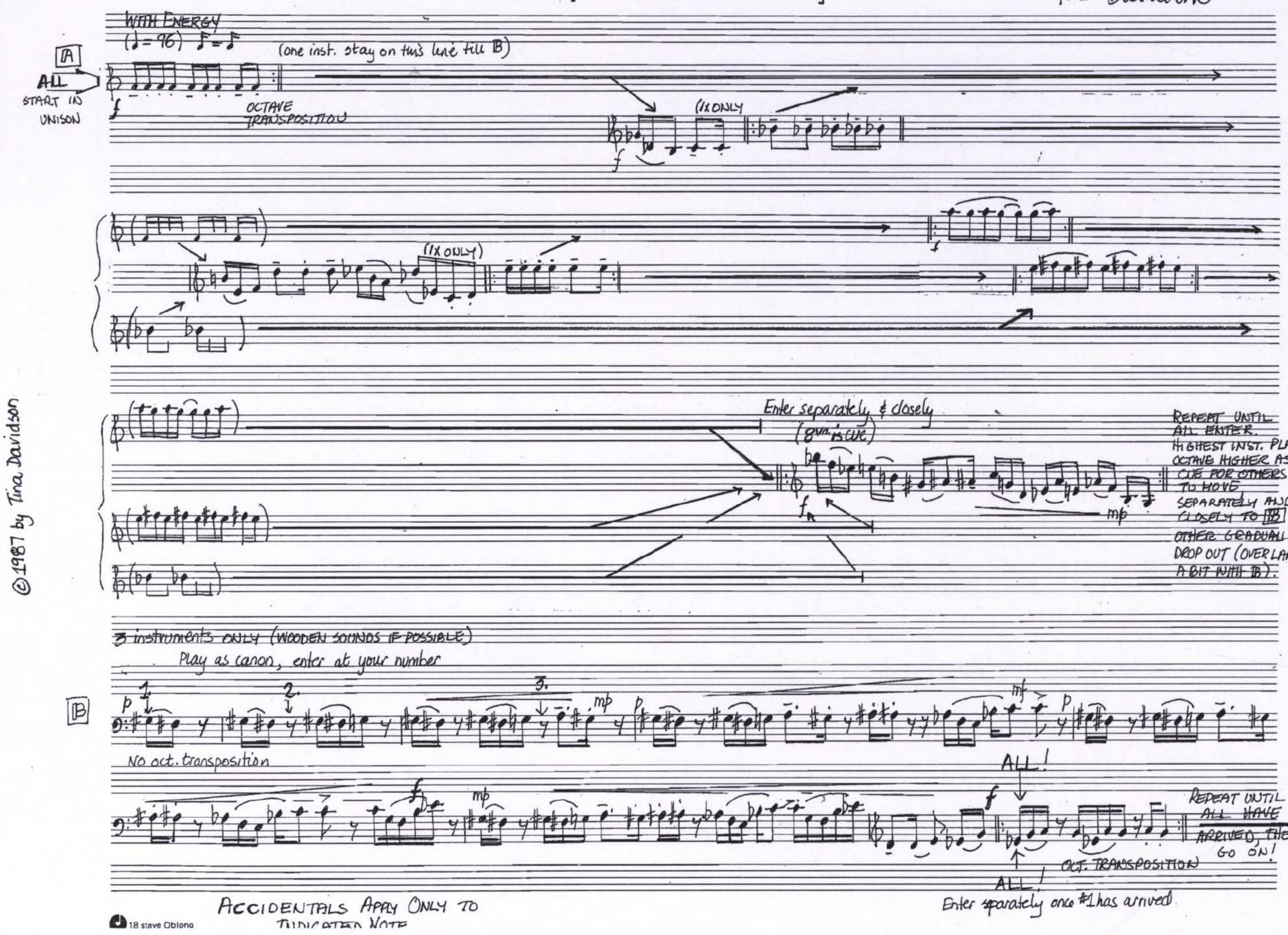
Communication remains a constant challenge for all beings and requires our vigilant efforts to listen accurately as much as talk well. The intent of *Mohican Friends* is to acknowledge that everyone, our animals and our earth, deserve to be understood on their own terms, respected, and treated as cherished relatives. This music celebrates our relatedness and is dedicated to the Stockbridge Band of the Mohicans.

Desert Invocation is a prayerful work for solo Quartz Crystal Flute. The single-page sheet music is a beautifully hand-notated and brightly colored portrayal of a saguaro cactus bowing in the desert; the sheet music is what I call "picture notation" or music that is shaped into pictures to match its subject matter. The one-page music has often been used as a visual poster, when not actually performed by the crystal flute.



Brent Michael Davids; *Desert Invocation.* For quartz crystal flute.

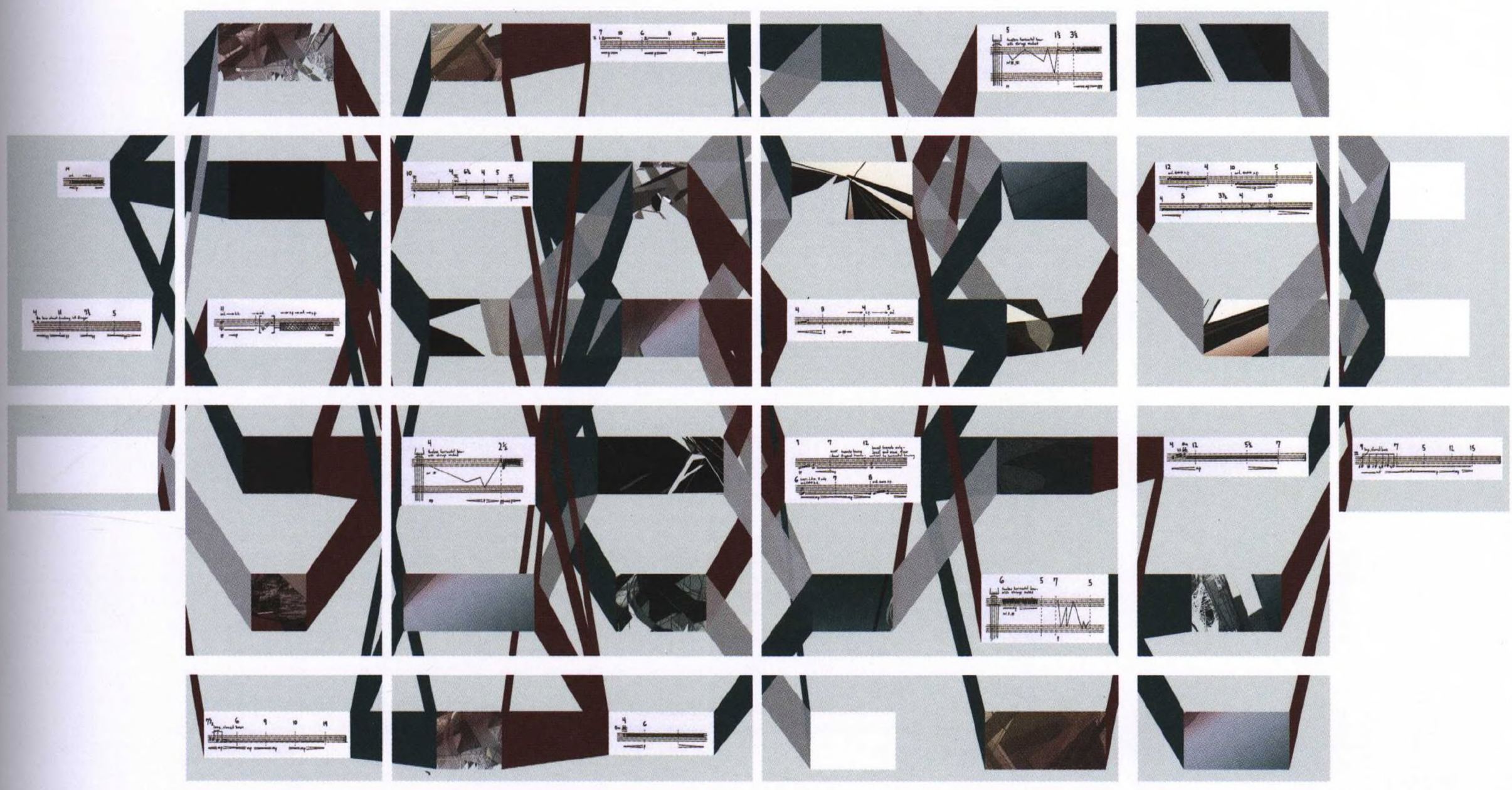
Used by permission of Brent Michael Davids, © 2001.



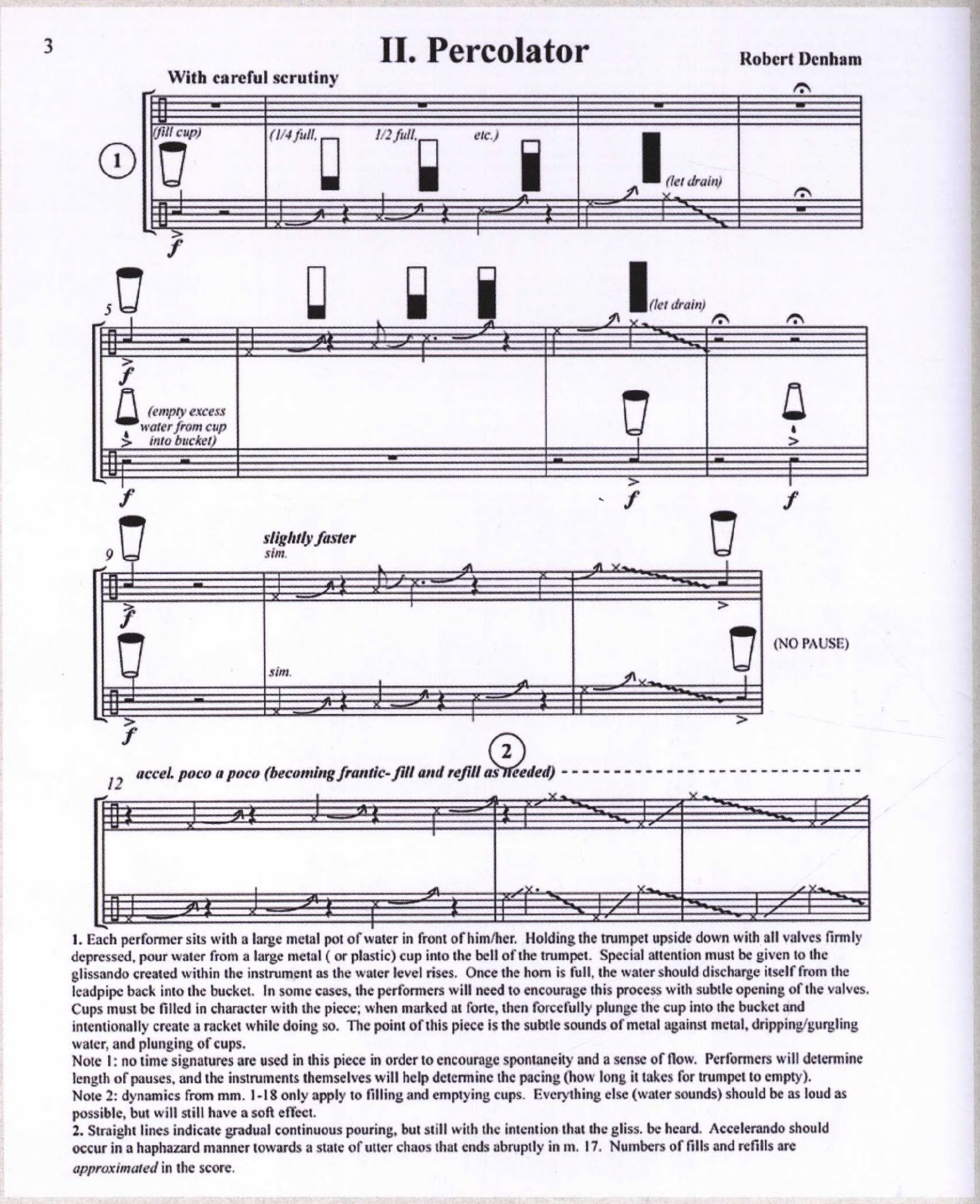
Tina Davidson; *Never Love a Wild Thing*. For non-specific instrumentation and open orchestration. Used by permission of Beyond the Blue Horizon Music, © 1986.

Never Love a Wild Thing is for non-specific instrumentation and open orchestration. The ensemble may vary from six to ten (unless keyboards are employed) and the performers themselves orchestrate the sections within the work. The piece was originally written for the Relâche Ensemble—flute, clarinet, bassoon, soprano and tenor saxophones, violin, piano, and marimba.

Never Love a Wild Thing is a warning and a mild rebuke to those tempted by wild things.



Mario Diaz de León and Jay King; *Open Grid for Solo Violin.* For solo violin. Used by permission of Mario Diaz de León and Jay King, © 2007.



1. Each performer sits with a large metal pot of water in front of him/her. Holding the trumpet upside down with all valves firmly depressed, pour water from a large metal (or plastic) cup into the bell of the trumpet. Special attention must be given to the glissando created within the instrument as the water level rises. Once the horn is full, the water should discharge itself from the leadpipe back into the bucket. In some cases, the performers will need to encourage this process with subtle opening of the valves. Cups must be filled in character with the piece; when marked at forte, then forcefully plunge the cup into the bucket and intentionally create a racket while doing so. The point of this piece is the subtle sounds of metal against metal, dripping/gurgling water, and plunging of cups.
Note 1: no time signatures are used in this piece in order to encourage spontaneity and a sense of flow. Performers will determine length of pauses, and the instruments themselves will help determine the pacing (how long it takes for trumpet to empty).
Note 2: dynamics from mm. 1-18 only apply to filling and emptying cups. Everything else (water sounds) should be as loud as possible, but will still have a soft effect.
2. Straight lines indicate gradual continuous pouring, but still with the intention that the gliss. be heard. Accelerando should occur in a haphazard manner towards a state of utter chaos that ends abruptly in m. 17. Numbers of fills and refills are *approximated* in the score.

Robert Denham; "Percolator" from *Suite of Household Appliances*. For two trumpets, each with a metal pot of water.

Used by permission of Robert Denham, © Imagine Music Publishing, 1996.

Percolator: It may be difficult to find glamor in a garbage disposal or pilot light; a dishwasher may not ever catch our eye until it breaks and it is time to call someone to repair it; vacuum cleaners and coffee makers? These are tools that we use to make our lives just a little bit easier. But in the scheme of things these appliances do have something in common: we have come to depend on them, and though we do not normally take notice of them when they are there, we certainly do miss them when they are not. These machines wield an eerie sense of power then, whether by giving off a soothing drone that lulls us to sleep, or by subtly dripping their steaming contents into a hot carafe, or by creating a sense of mystery with a small flicker of flame burning softly in a basement corner.

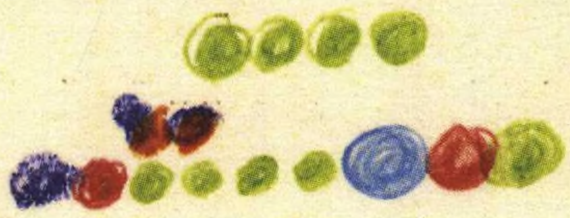
Note: when performing this piece indoors, it will be necessary for a tarp to be laid down on the floor to catch excess water. Painter's tarps are an inexpensive option.

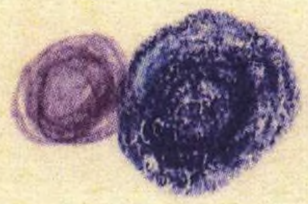
CANINE Wisdom
for
the Barking Dog Sextet

Baritone sax - violin - ud - double Bass
piano - vocals and percussion

Halim El-Dabh

Pitches cover
the entire instrumental
ranges.
Performer may improvise with
the sound frequencies of each colour





This system
of Color Music is
based on Ancient Egyptian
Color Music Notation

© 2007

Halim El-Dabh; "Canine Wisdom" from *The Dog Done Gone Deaf*. For baritone saxophone, violin, oud, double bass, piano, vocals, and percussion.

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Halim El-Dabh

Color Music

My sensitivity to the interconnections between color and sound began at about the age of two. Years later, my older sister Rogina would recall her amusement at my exuberant reaction to the sight of newly plucked roses. My mother frequently made jam from rose petals; as the youngest of nine children I would always run to where she was working, hold my hands tightly over my ears, and scream in reaction to the intensity of the crimson, scarlet, and vermilion blossoms, which to me seemed to emit a variety of high-pitched, penetrating sounds. Also during my childhood, I developed a fascination with astronomy, often sleeping outdoors in order to feel a connection with the heavenly bodies above.

Later in my childhood, my brother Adeeb brought me to the museums of Cairo, where I was immediately attracted to the ancient faience ornaments with their bright blue colors. I was also captivated by the blown glass that I saw being made near Bab Zuwayla, one of Cairo's three old gates—the sounds, sights, and actions of the molten glass swelling into colorful spheres seemed like a symphony to me. In my early teens, I had the opportunity to visit the Tomb of Pharaoh Seti I, in the Valley of the Kings near Luxor. The stunning vibrancy of the tomb's painted ceiling, displaying the evening sky in the form of the goddess Nut, with other divinities representing the various constellations, left an imprint that is still with me today.

In my early twenties I was fortunate enough to meet the eminent German musicologist Hans Hickmann, who had emigrated to Egypt in 1933. I attended lectures at his Musica Viva conservatory, where he presented his findings about Ancient Egypt's musical culture, in particular how many European musical instruments (such as harps and reed instruments) derive from Ancient Egyptian models.

In late 1952, while attending graduate school in Boston, I happened to be visiting New York City when something caught my eye. Sitting on the subway seat next to me was a page from a magazine that someone had left behind, depicting an ancient parchment leaf covered with an array of colored circles of varying sizes. I felt a chill through my body as I recognized it immediately as a form of early Egyptian musical notation. A closer look told me that the circles on the left represented the twelve tones of the chromatic scale and that the diameters of the circles represented durations and rhythms. The vertical stacks of circles seemed to imply a polyphonic texture. The unusual design struck me as quite modern—like a late Mondrian painting—but also triggered my memory, reminding me of my earlier experiences in my homeland, particularly the planets and stars I had so closely observed during my childhood. Furthermore, the six dancers at the top of the page reminded me of the Coptic liturgical dances I was familiar with from my visits to Coptic monasteries in Upper Egypt.

In an effort to learn more about this unique and previously unknown notation, I inquired at the Egyptian consulate in New York, but was told that the best place to look would be at the Museum of Egyptian Antiquities in Cairo. Years passed and I eventually learned, via the writings of Hickmann and others, that my interpretation of the notation had been correct. I still have this page today, and I have just learned that it came from the September 1, 1952, issue of *Vogue* magazine — of all places!

The idea of using color for my musical notation remained in my subconscious until November 1965, when I decided to present a workshop for children on this subject in Gloucester, Massachusetts. In this workshop, I taught the children how to compose and play their own music, as well as sing and dance, using a form of notation based on the one depicted in the Coptic parchment, but interpreting the circles as blocks of sound from which single tones and chords may emerge. I viewed the colors as facets of the totality of sound, which could be represented by the color white ("white noise"), which includes all colors.

In subsequent years, I have returned periodically to this color-based approach, using it in my 1973 work *Voyages*, for jazz big band, as well as other workshops I have presented. In 1991, I based

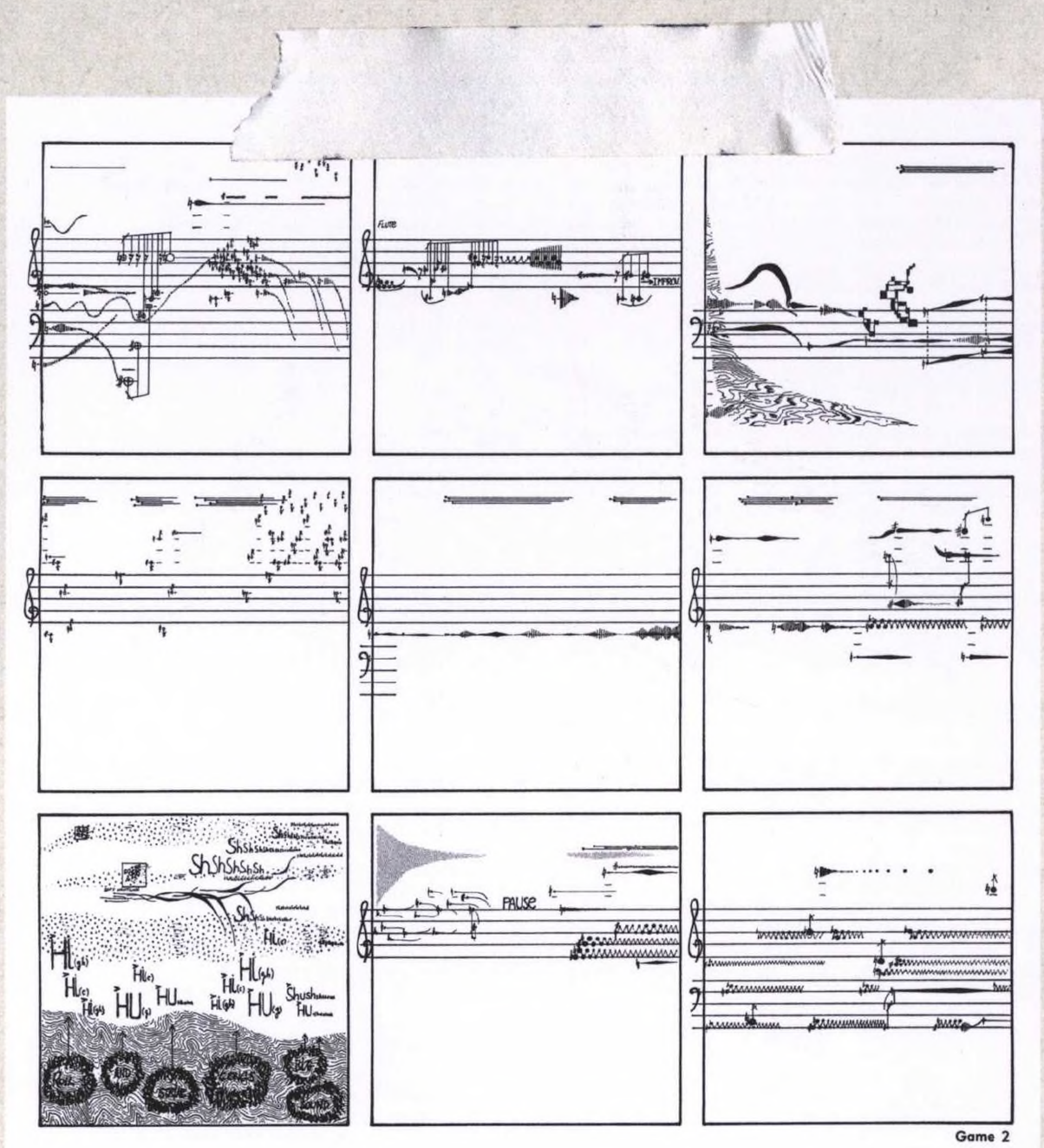
my *Harmonies of the Spheres*, a work for concert band, on the concept of music derived from heavenly bodies.

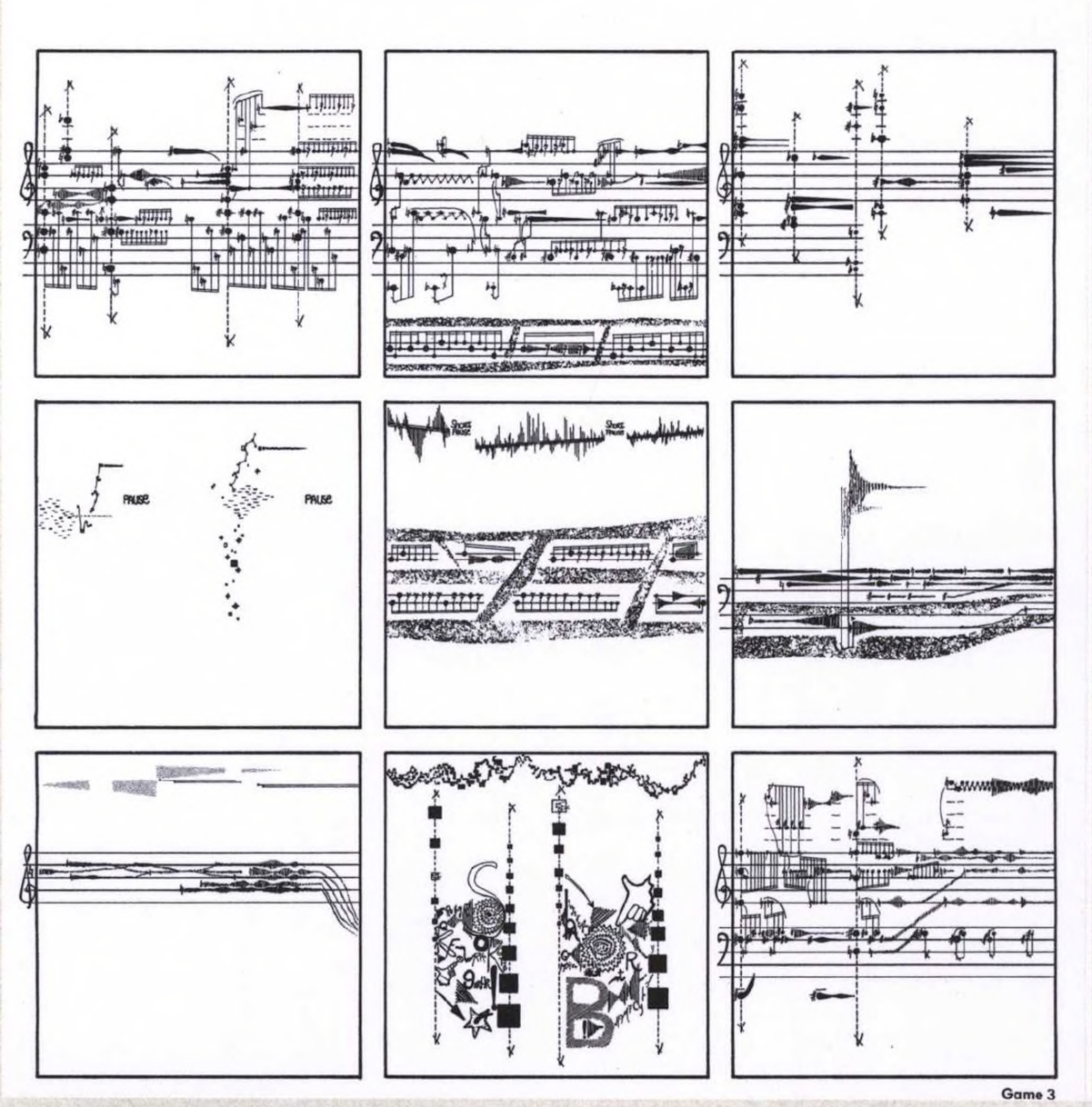
My most recent use of this color notation was in my 2007 composition *The Dog Done Gone Deaf*, commissioned by and premiered at the Suoni per il Popolo Festival in Montreal. In the movement entitled "Canine Wisdom," I asked my ensemble, as well as the entire audience, to close their eyes and quietly breathe in for six beats, then out for seven, resulting in a metrical structure of 13. I then asked everyone to slowly open their eyes and examine the colors and shapes of my score (which was projected for all to see). In this meditative state to which I had guided them, the musicians were now in a highly receptive state, ready to begin playing in their own time. They followed, from one sphere of color to another, engulfing both musicians and audience in a slowly blossoming cloud of vibrations in which color and sound merged as one.

August 2007

For more information about the Egyptian parchment, see page 290.

ROBERT ERICKSON



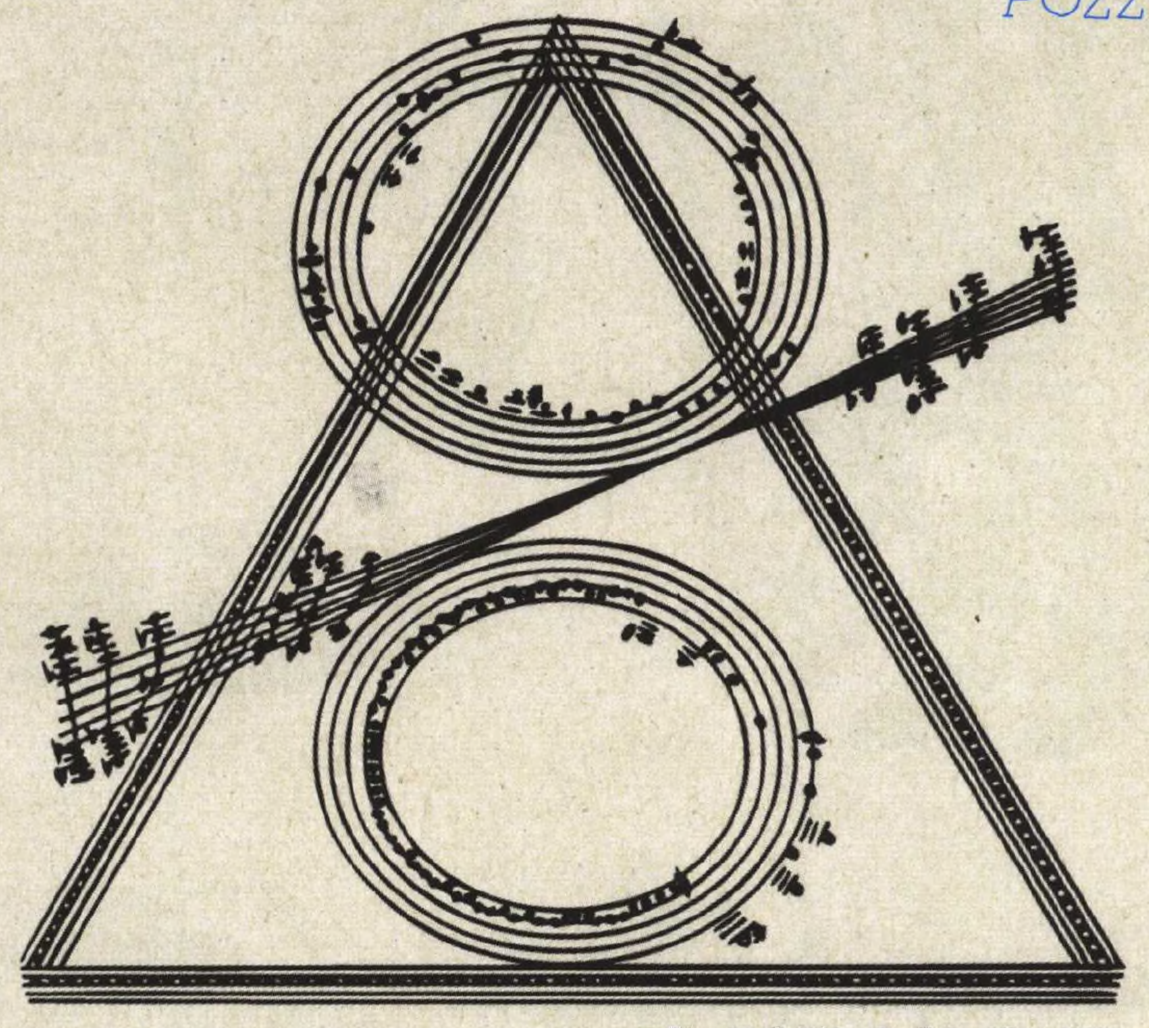


Scapes is a music-theater composition based on the game of tic-tac-toe. The players are two groups of five or more instruments, each with its conductor. *Scapes* consists of three movements ("Game 1," "Game 2," and "Game 3") linked by short improvisations. The score for each movement consists of a single page containing nine graphic squares. The music is written nine parts deep, as a sort of nine-part counterpoint, where each part is a square, where each square relates to every other square by superimposition, and where any square can precede or follow any of the others. The nine squares are performed in various sequences according to the rules of tic-tac-toe.

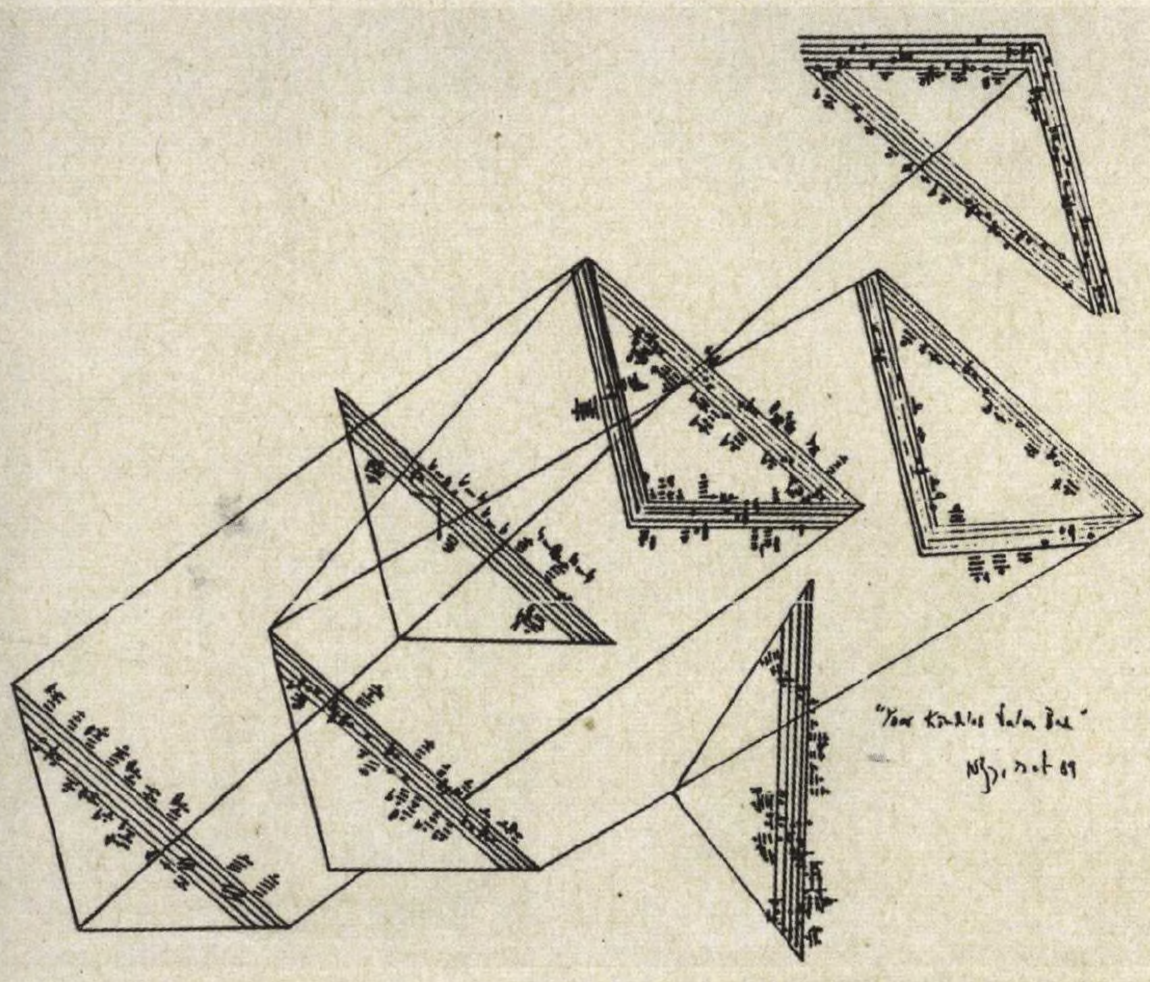
The scores (or games) are projected for both musicians and audience to see. The conductors cue in their performers by placing an "X" or an "O" in a square, following the rules of tic-tac-toe, playing to win.

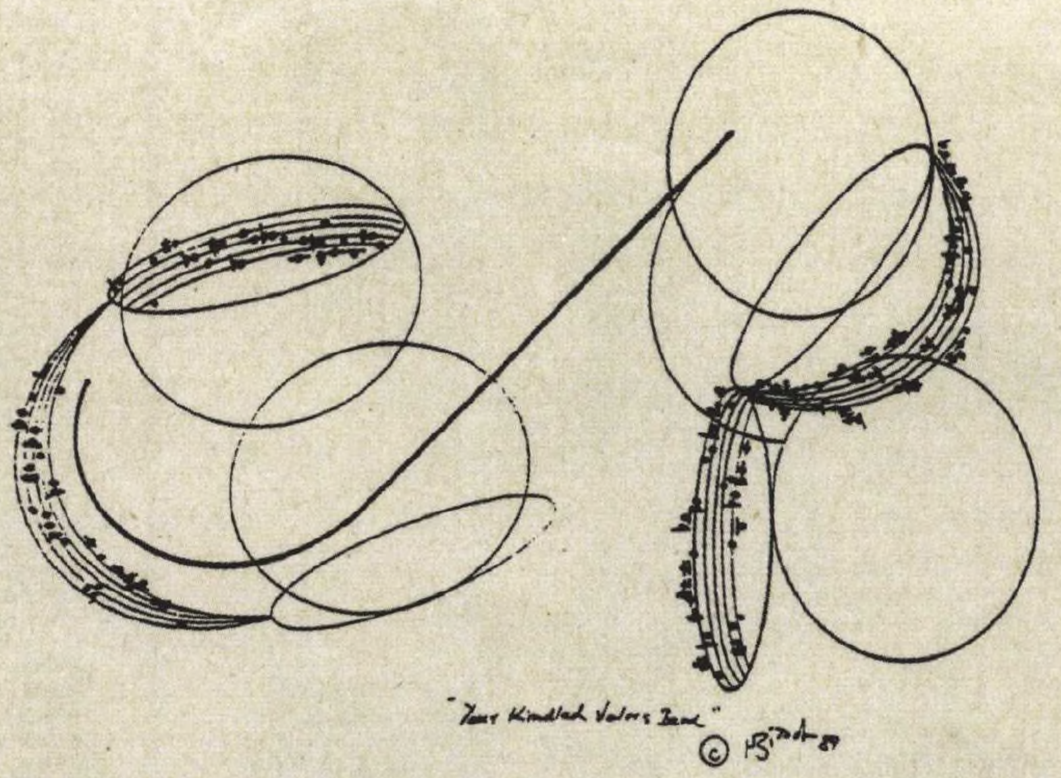
Players should regard each game as a sort of landscape. In addition to the specific musical notations, the players should be aware of the overall structure and appearance of each graphic, letting its "look" give inflection to their realization.

Robert Erickson; *Scapes*, "Game 2" and "Game 3." For two groups, each of both five or more instruments and conductor. Used by permission of Sonic Art Editions (Smith Publications), © 1984.



© "Your Kindled Valors Bend", Pozzi Escot 1989





Pozzi Escot; *Your Kindled Valors Bend*. For soprano, clarinet, and piano.

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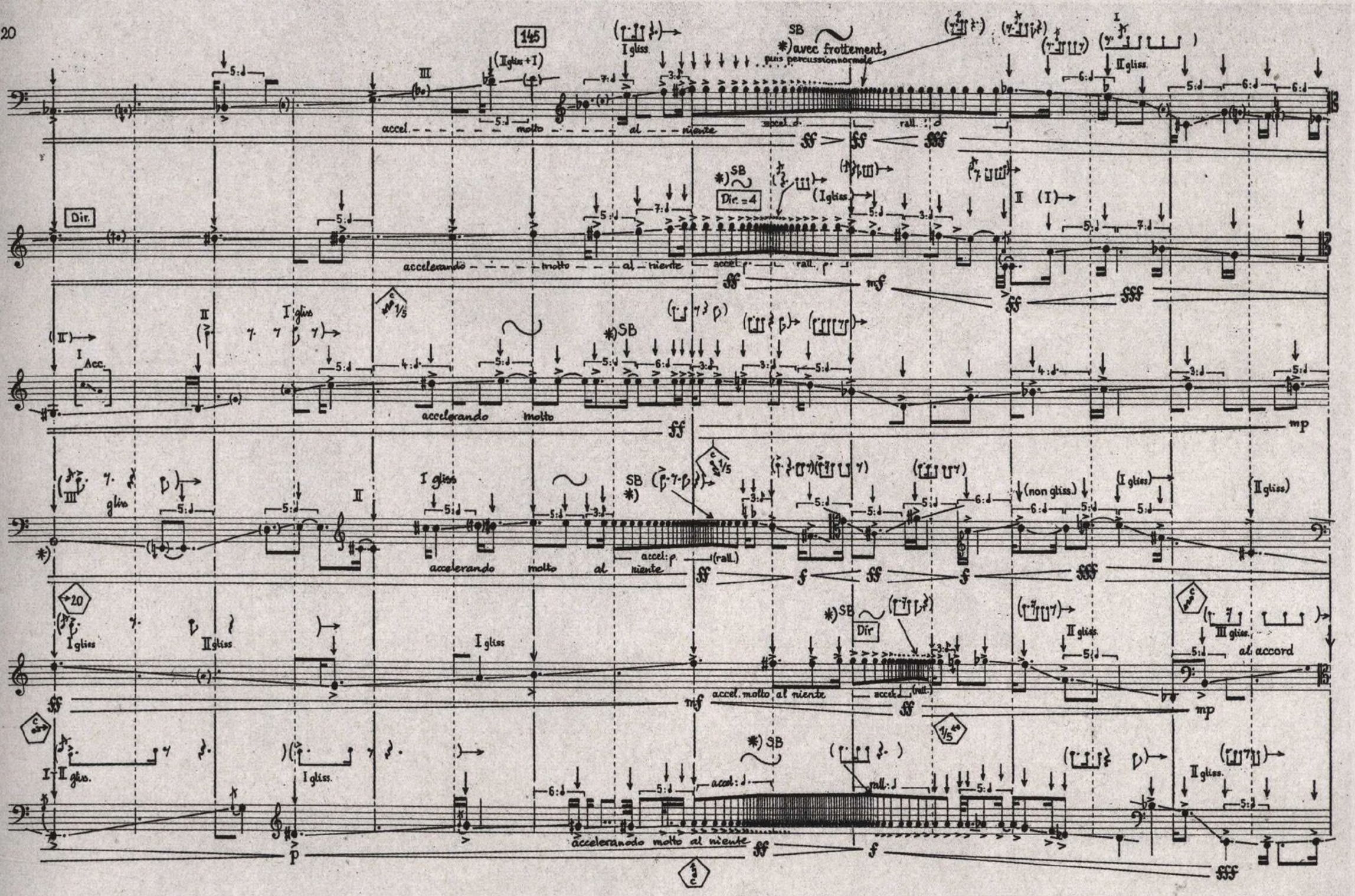
COMPOSING BY A COMPOSER - A MEDIEV *ALI* AVANTGARDE ESTHETICS

POZZI ESCOT

The American composer Robert Cogan quotes William H. Gass *(The Tunnel,* New York: Harper Perennial, 1995, pp. 244-245), "Make the present your past, enter the flux before it gets frozen over, write about change, write about transformation." In this essay of Cogan he himself writes that, "This past century has been a thrilling musical century of ongoing experiment, creation of endless astonishing openings. Our ears have spread backwards through millennia of musical creation; through deep, newly uncovered layers of fascinating expressive growths. We can now choose to live with Hildegard von Bingen, Guillaume de Machaut, Dufay, and Josquin, opened outwards to the end of the truly endless earth, through previously impermeable geographical cultural barriers."

I was trained as a composer and mathematician, but beyond these possible barriers I was trained to pass through with a life of deep absorption of all senses' possible learnings. Thus, for me music is a thinking endeavor powerfully adorned by all thinkings. Composing is a 'baking' of such incredible diverse absorptions. As we learn the basics of fundamental techniques, apply them, discern them, analyze them, the result of a composition has to bear a new colloquium to pass on. Moreover, music connects well and wide. Our vocabulary might be for some occasions limited given the fact that Alaskans, for instance, have 22 words (sounds) for snow; Africans many for ants; and all geographies dispense the composing endeavor with fabulous different sonic results. Environment deeply influences how we all produce sounds. The manner in which we communicate music is very different throughout and around.

We are so brainwashed with the linear world that our musics tend to follow a linear result, but so much of our world resides within the nOh-linear parameter where there is a wondrous connection though disjointed, fragmented, stopping sonic lines. Expressionism brought the non-linear world to us only very recently. Rules were written to control the compositional result. When we see a Kandinsky and the drawings of completely isolated figures we have eventually developed a good admiring effect for the colors, situations of the isolated possible shapes, but that has been difficult for our musics. When a student or somebody in the audience when I am invited to address it, asks "what type of music do you write? My answer: the world around me with centuries of history and centuries of expressions.

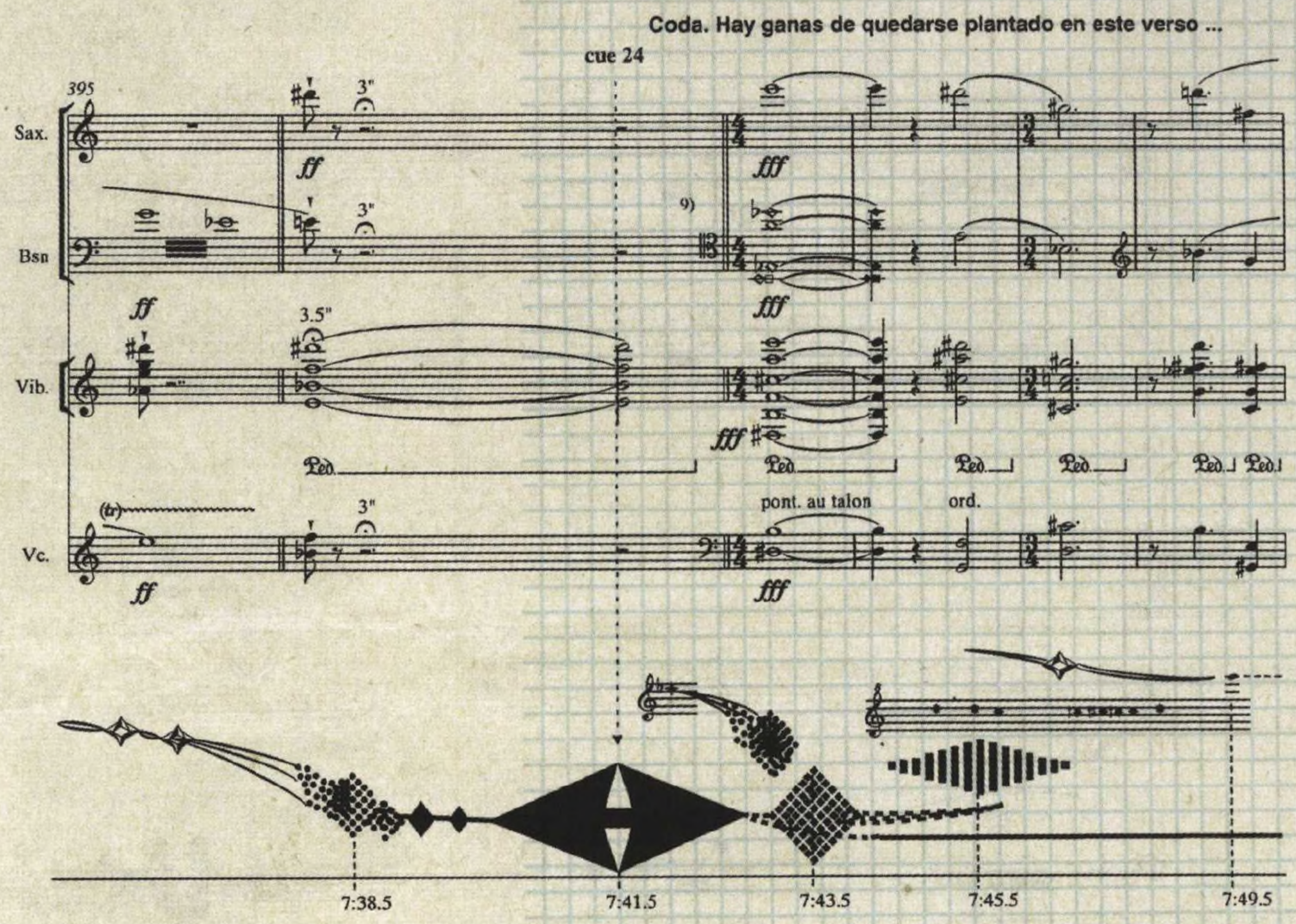


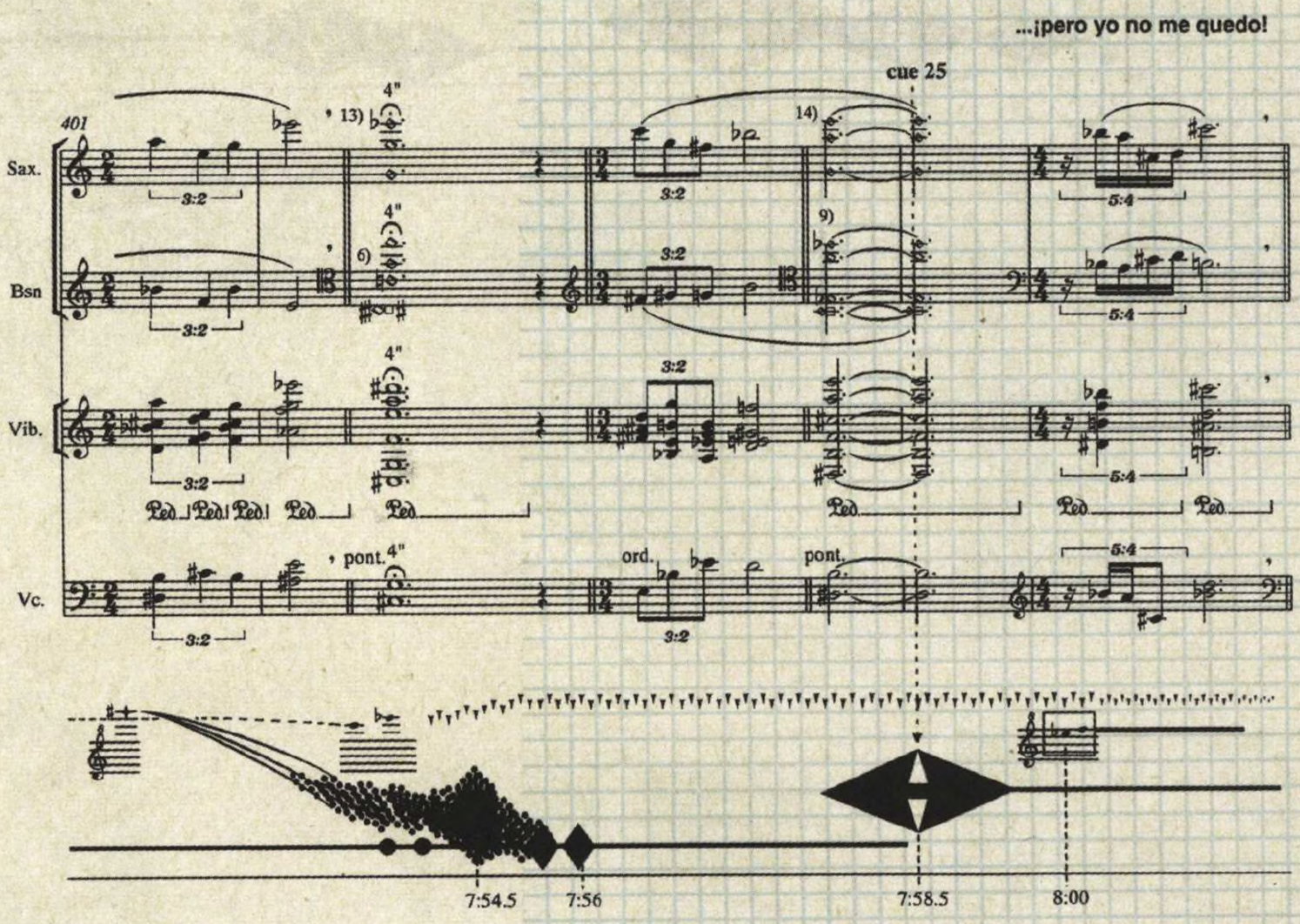
Julio Estrada; *ishini'ioni* (page 3). For 6 percussions on a pentagon. Used by permission of Julio Estrada, © 1998.

ishini'ioni: Purepecha Language: ishini: always, ioni: time

ishini'ioni is a continuum where rhythm and sound are understood as similar physical elements, inaudible or audible, respectively. Both elements are treated under a methodology that proposes the cumulative register of every speed of acoustic change, in order to allow the greater individuality and potentiality of each component.

In composition, continuum means a more acoustical musical writing than those originated by musical systems. Continuum is equivalent to higher resolution, proper for the rigorous and subtle description of the variety of inflexions of audible matter. From that perspective, *ishini'ioni* doesn't establish a boundary between the imaginary and the reality of its evocations—the abstract and the figurative. Composing under this continuum tends to orientate the mind toward time, within processes far from memory, to be, instead, a vivid and fugitive register of music creation: an imitation of the mentally listened, precise description of the movements of the imaginary.





No Me Quedo . . . (plantado en este verso) (I am not staying . . . [stuck in this verse]): a work consisting of five continuous sections and a coda.

These take their titles from the text of a poem by the Peruvian César Vallejo (1892-1938). Dedicated to Dalit Fischman.

Rajmil Fischman; *No Me Quedo....* For saxophone or clarinet, bassoon, violoncello, percussion, and tape.

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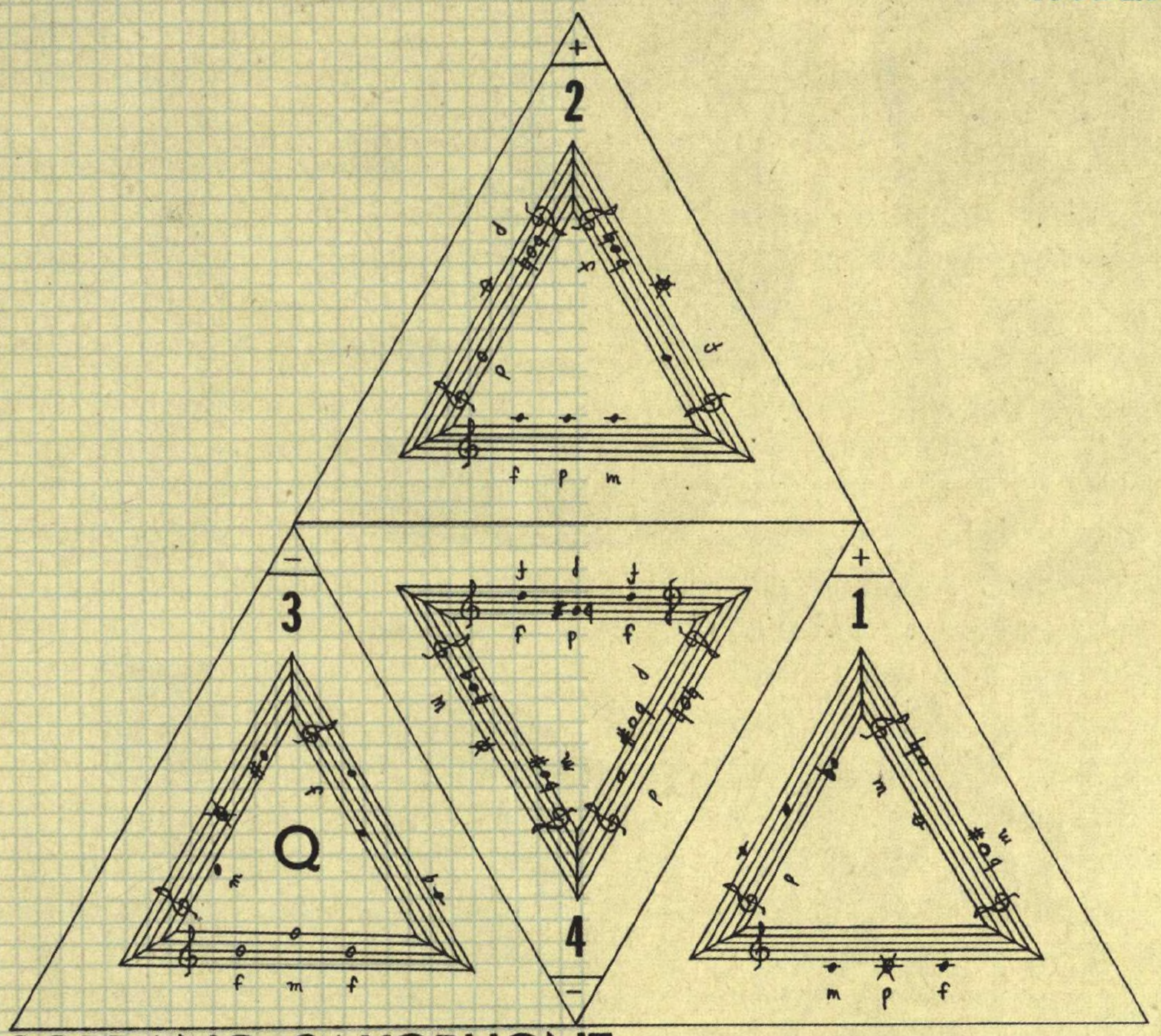


Robert Fleisher; *Mandala 3: Trigon*. For soprano saxophone. Used by permission of Robert Fleischer, © 1979.

Mandala 3: Trigon includes four numbered sections performed in order without intervening pauses. The four sections each contain three subsections, articulated through processes of phrase addition and subtraction. In the original, 24-minute version (not for the squeamish), each section is six minutes in duration, with two-minute sub-sections. A stopwatch with a second hand is needed by each performer to maintain the coherence of parts and execute the necessary cues throughout.

The performers should stand equidistantly positioned around the perimeter of the audience (preferably seated in-the-round), each of the three loudspeakers positioned directly across the audience area from the instrument, which it amplifies. Thus, all six sound sources should be equidistantly surrounding the audience, as though representing the even-numbered hours on a clock face. Both instruments and loudspeakers direct their sound to the center of the audience area. When amplified, the optimum volume level should match as closely as possible that of each performer's un-amplified sound, i.e., from the center of the audience, e.g., the oboe and the facing speaker that amplifies it should produce comparable volume levels.

Robert Fleisher

Being of Sound (and Visual) Mind

By the time John Cage's *Notations* appeared in 1968, it was evident that contemporary music had undergone an epochal transformation, perhaps the most significant departure in a thousand years. Notations served equally to document these changes and to focus attention on the topic. Its publication was followed by an international wave of projects, conferences, texts, and other writings continuing to the present day, involving many performers as well as composers.[1] This essay, written by a composer who has employed a variety of non-traditional notational approaches for more than three decades, combines observations on the subject in general with reflections on personal experience.[2]

Kurt Stone has written that "only a fundamental break with established musical aesthetics and philosophies can bring about a commensurate notational change."[3] He attributes the upheaval, beginning in the latter half of the twentieth century, to the conflicting trends toward precision and flexibility. Each of these opposing aesthetic stances yielded many new notational solutions. It didn't take long for such opposites to attract, and the attempt to find a balance between them produced still many more works in which "controlled freedom" sought to mediate between these polarities, through an increasing variety of new notational approaches. Two radically new aesthetic viewpoints emerged from this period: first, the redefinition of music itself, as "organized sound,"[4] owing in part to the advent of electronic music; secondly, the rethinking of all prior assumptions concerning musical form,[5] ultimately including the concept of a composition's identity—as gauged by its capacity to be recognized as the same work from one performance to another.

This new music continues to suffer from its own terminology. Works employing chance operations in the compositional process—or involving some degree of indeterminacy, improvisation, choice, or "controlled freedom" in performance—are mistakenly presumed to represent a monolithic genre. The misapprehension drawn from the commonplace use of such terms is that in all compositions, so described, to quote Cole Porter, "anything goes."[6] It also seems necessary to affirm that compositions that are variously "indeterminate"—which tends also to connote works employing unconventional approaches to notation—may be as difficult, or even more difficult, to perform than more conventionally notated works. (The difficulty of performing a work of any style or era, however, remains an ineffective arbiter of aesthetic strengths or weaknesses.) Finally, a composer of music that variously employs indeterminacy or improvisation in performance neither necessarily seeks to remove his or her own aesthetic intentions, nor necessarily delegates to performers primary responsibility for elements that might be construed as representing the identity of each work.[7] Nonetheless, the post-war changes in music and musical notation have dramatically expanded the collaborative role of performers, who have needed to find, and have found, new creative solutions to a seemingly infinite number and variety of compositional and notational approaches.

A composer may transform or invent musical notation for a variety of reasons. Arnold Schoenberg's modifications certainly influenced the development of more standardized contemporary notation—including [Hauptstimme and Nebenstimme] brackets to highlight prominent melodic lines, diamond-shaped note-heads combined with written instruction to produce sympathetic vibrations of piano strings, indications of (heard as well as performed) string harmonics, indications of Sprechstimme vocal performance, accidentals preceding most (if not all) pitches, and keys at the beginning of scores explaining the special symbols employed throughout. None of these practices, of course, fundamentally altered the conventional notational context.[8] Perhaps the earliest instance of an invented "graphic" notation replacing traditional note values and symbols may be those found in the scores by the Italian Futurist painter, Luigi Russolo—whose manifesto, *The Art of Noise*, appeared in 1913.[9] Russolo "wanted all sound to be possible material for music,"[10] and

judged that a new notational approach was needed to represent those produced by the *intonarumori* ("noise-intoners")—mechanical instruments of his own invention that naturally produced microtonal (he termed these "enharmonic") variations in pitch.[11] These two very different composers sought practical solutions to notating new aspects of early 20th-century performance practice and instrumentation, as composers of electronic music following World War II would later do.[12] Lukas Foss described the impact of this new medium (writing in 1963): "Electronic music showed up the limitations of live performance, the limitations of traditional tone production, the restrictiveness of a rhythm forever bound to meter and bar line, notation tied to a system of counting. Electronic music introduced untried possibilities, and in so doing presented a challenge, shocked live music out of its inertia, kindled in musicians the desire to prove that live music 'can do it too.'"[13]

Some of the most prominent 20th-century visual artists, including Wassily Kandinsky and Paul Klee, had music in mind much of the time, as evidenced by their choice of titles.[14] By the 1950s, it would appear that works by these and other visual artists may have suggested alternative approaches to musical notation for composers of New music. On the figurative-prescriptive side, there are scores by George Crumb—for example, movements such as "Crucifixus" or "Twin Suns" from his two volumes for piano titled *Makrokosmos.*[15] On the abstract-indeterminate side, consider the striking resemblance between Earle Brown's *December 1952* and Pieter Mondriaan's *Composition with Lines.*[16] John Cagè became acquainted with artists Mark Tobey and László Moholy-Nagy as early as the 1930s,[17] and later was closely associated with Jasper Johns and Robert Rauschenberg, who were both instrumental in coordinating and promoting the 25-Year Retrospective Concert of the composer's music at Town Hall in 1958. In 1965, Roman Haubenstock-Ramati wrote: "I am personally astounded that even today one does not play Kandinsky or Miro, even though it would be so simple and easy to do so."[18] The use of text scores as a substitute for music notation may also reflect the influence of concrete poetry.[19]

Schoenberg the modernist asserted that "Art means New Art,"[20] and defined composition as "the art of inventing a musical idea and the fitting way to present it."[21] For this composer, convinced that "everything of supreme value in art must show heart as well as brain,"[22] such a creative process needn't be purely cerebral, or result in unaffecting work. He insisted that even as the outer characteristics of his musical language evolved—from tonality through different approaches to what he preferred to think of as "pantonality"—he continued to compose as he had before. Though he asserted that "a creator has a vision of something which has not existed before this vision,"[23] and was frequently the target of negative, even caustic, criticism, he was never an experimental composer in the sense we associate today with Cage. Schoenberg the classicist was tied to the organic conception of art, with its attendant attributes of narrative logic, coherence, and development—and to continuing the "common practice" of composing music through the crafting of tonality, harmony, melody, and form.

Cage attended Schoenberg's classes in Los Angeles for about two years during the mid-1930s. Although few today would likely recognize much common ground in their aesthetics or their music, their relationship and the question of Schoenberg's influence have long been discussed.[24] David W. Bernstein has suggested that there may be more connections here than meet the eye (or ear): Cage's early compositions explored serial procedures and atonality;[25] Cage compared the emancipation of noise (from "so-called musical sounds") to Schoenberg's emancipation of dissonance;[26] Schoenberg acknowledged the influence of chance in the compositional process;[27] and Cage, in retrospect, linked his mature compositional process of "asking questions" to the memory of a single counterpoint class taught by Schoenberg.[28] Bernstein even perceives "correspondence of the underlying aesthetic assumptions behind Cage's chance music to Schoenberg's notion of a musical idea."[29]

Still, the contrasts between these composers and their music remain distinct, and may likely be attributed, at least in part, to their generational and

cultural differences. Cage often recalled that his teacher considered him an "inventor" rather than a composer.[30] Schoenberg sought to achieve logic and coherence by means of motivic unity and developing variation through the relationship of tones. Cage, devoted to experimentation, chance, and "purposeless play," regarded time as the ultimate context in which all things musical (including noise) occur, basing his works on "pre-compositionally determined temporal divisions."[31] Schoenberg's aesthetic priorities (perhaps owing in part to his experience as a painter) are consistent with his view that "the work of art is like every other complete organism."[32] Cage foregoes the organic model for an existential one that equates music with life in general: abandoning conventional performer-listener boundaries, and mirroring the evident absence (or, at least, absence of evidence) of logic, coherence, and predictability experienced in daily life.

My own compositional thinking and practice have certainly been affected by the music and writings of both these important figures. It is Cage's influence, however, that seems most evident in the perspectives that have guided me as a composer: (a) Music is sound in time and space—the latter realm also capable of serving in a compositional, rather than coincidental, role; (b) No a priori assumptions (or exclusions) concerning what may constitute a usable sound; (c) Coherence of form need not require uniformity or continuity of style; (d) It may be desirable at times to ask performers (and their instruments) to do things that can be (and have been) done—and at other times to do things that maybe cannot be done (or, at least, done precisely as notated); (e) It may sometimes be appropriate to use conventional notation, and it may other times be appropriate to modify or replace this familiar language with an invented (or "customized") notational approach that derives from, and is congruent with, the idea(s) underlying a specific work; (f) Performers (like composers) are accustomed to solving problems, and it may be desirable to employ degrees/factors of indeterminacy that require special performance strategies; (g) A new work need not resemble anything ever seen or heard before.

Most of these premises appear to underlie *Seraffyn*, composed while I was an undergraduate. "Seraffyn" was the assumed name of Donald Mörk, a multi-lingual singer-lutenist who lived the life of a wandering minstrel—performing in castles, colleges, and private homes around the world.[33] In keeping with its namesake, the work involves 10 musicians and four tape sources, most (along with two clusters of bells that "fly" overhead) in more-or-less continuous motion throughout: on and off the proscenium stage, up and down the aisles, and across designated (audience-free) rows. Two tape programs play from the front and rear, while two battery-operated cassette players (handed off between performers) are heard from several locations. *Seraffyn* begins with all performers blowing bottles, ends with crescendo of police whistles, and otherwise combines a variety of recorded material with string, wind, brass, and percussion instruments; (two grand pianos are played with large mallets, only on the strings). There was a full house for the 1974 concert during which this work was premiered, but no witnesses to the performance—which took place in total darkness (with even the exit signs obscured) to minimize distractions and focus the listener on the interplay of sounds in time and space. In this proportional-time score combining traditional and graphic notation with written instructions, the opening two-minute section (bottles alone) is presented on the first page; thereafter, each page represents one per minute of elapsed time.[34]

Although some have been exhibited, none of my "graphic" scores were created with an essentially visual aim. Their appearance generally derives from core aesthetic and structural aspects of the work. In my experience, employing invented or customized notation may establish conditions conducive to thinking/hearing "out of the staff," and thereby, to composing in new and unaccustomed ways—i.e., to discovery. Musicians open to meeting the interpretive challenges presented by such works can discover new ways of performing and thinking about music, and consequently bring fresh perspectives and problem-solving abilities to their treatments of more conventional literature.[35] I have been very fortunate to work with many mu-

sicians, students, and colleagues alike, undeterred by the notational or interpretive challenges posed by new music. My *Mandala* series comprises three compositions designed for performance in the round: "Synchron" for four percussionists, "Radius" for trombone and 12 cassette tapes, and "Trigon" for amplified oboe, clarinet, and soprano saxophone. All feature expanded collaborative roles for performers consistent with works employing "controlled freedom." As their shared title suggests, each explores aspects of circularity—influencing factors such as form, spatial design, movement, pitch organization, and notation.[36] (An excerpt from "Trigon" appears in this volume.)

"Synchron" is all about sound: dynamics, density, timbre. Each player assembles a battery of wood, metal, and skin instruments. These are represented in notation, respectively, by squares, triangles, and circles—in seven sizes, corresponding to dynamic levels. Each of these timbral categories also plays a unique role in the work. No specific instrument is required and non-traditional choices producing indefinite pitch are suggested. The score comprises two large pages, separately mounted on foamboard. Each percussionist reads from his/her own set. The board nearest to each musician is a large upright rectangle suspended from a rack. The other, directly behind, is a motorized, 30-inch diameter circular disc, revolving at 1 rpm, attached to a music stand. This 15-part rondo, lasting approximately 30 minutes, follows the palindromic pattern, ABACADAEADACABA. Notation for the eight refrain (A) sections appears on the nearer rectangular page. Notation for the alternating episodes appears in four concentric rings on the circular page behind. Four small square "windows" in the first board reveal visual clusters (phrases) of geometric symbols on the second. All section changes require the performers to recognize aural and visual cues. Except for these critically coordinated cues articulating the overall form, and the eventually coordinated series of simultaneous attacks heard at the end, the four musicians independently perform similar materials throughout.

"Radius" could be described as a choreographed electro-acoustic concerto, with a solo trombonist surrounded and accompanied by an "ensemble" of 12 cassette tape players. This approximately 18-minute composition has an introduction, 12 principal sections (one minute each), and three codas. The clock-face design of the score pages for the 12 sections mirrors the spatial relationship of the centrally positioned soloist, who is surrounded by two concentric rings of 12 equidistantly positioned music stands—the nearer stands for scores, those at the perimeter for tape players. The audience fills the space between these concentric rings. These 12 positions correspond to the chromatic scale, and the soloist's extended trombone acts like the rotating hands of a clock. Each pitch is aimed at the appropriate hour, which changes with each new section. Each page also displays available note durations, pitch range, and range of dynamics.

"Trigon" engages three performers in a process that, like "Synchron," combines independence and interdependence. The distantly separated musicians form a triangle in the performance space, interlocking with a corresponding triangle of speakers. Together these two triangles form a large six-point circle surrounding the audience. Each performer is amplified through a speaker positioned directly opposite his/her position. There is no full score, only three one-page parts. Although traditional staves are employed, these are arranged to form a large triangle, containing four triangles within. Each triangle side contains a three-note "phrase." (Some phrases, bearing oppositely-positioned clef signs, are read right-side up as well as upside-down.) Performers individually decide when, and how often, to perform the phrases, within the given time constraints of each section. The use of very short and very long single-pitch (or multiphonic) sonorities is intended to reflect the points and lines that form these geometric shapes. Section and sub-section changes of texture, density, dynamics, and pitch content are controlled, and indicated by "+" and "–" symbols, signifying the complementary processes of "adding" and "subtracting" other available phrases within a section. Stopwatches help to coordinate the section changes that occur at regular intervals, resulting from these processes.

Many of the world's musical traditions and repertories have been historically transmitted through oral (and aural) tradition, whereas music notation (until relatively recently) has been the essential medium by which Western music has been documented, disseminated, and preserved. Occasionally lost in discussions of this topic is the recognition that little (more likely, none) of this music was ever entirely predictive of its realization. Bach provided virtually no expressive details; Beethoven was the first composer to employ metronome markings linking tempo to real time; and dynamics have only been in common use for a couple of hundred years. Choral and orchestral scores have been performed by ensembles of different sizes and composition, and pre-existing compositions of all kinds have been transcribed, arranged, and remixed in ways their composers could never have imagined. Even composers of electronic and electro-acoustic works requiring no performers will acknowledge that certain variables may cause them to be heard differently by different listeners. The context is immutable: musical notation is the visual representation of aural phenomena.[37] Composers' intentions, therefore, will be lost and/or found in translation. As the Turkish-born composer Ilhan Mimaroglu observed in *Notations*: "Notated music is music only to the degree a blueprint is a building or a screenplay a motion picture."[38]

1 An online search under "graphic notation" or "graphic scores" yields an abundance of related links, including pedagogical materials designed for ages seven to eleven; see Mark Warner, "Graphic Notation," 2007; *www.teachingideas.co.uk/music/graphic.htm;* accessed August 7, 2007.

2 I am indebted to my wife, Darsha Primich, and to my Northern Illinois University colleagues, Dr. Janet Hathaway and Dr. Ted Hatmaker, for their helpful editorial suggestions.

3 KURT STONE, *Music Notation in the Twentieth Century* (New York: Norton, 1980), xv. Stone identifies two previous comparably "profound upheavals" in Western music: the advent of polyphony around 900 A.D., with its increased specificity in pitch and rhythmic notation, and the ascendance of chordal harmony around 1600, resulting in the replacement of part-books with full scores.

4 EDGARD VARÈSE, "The Liberation of Sound," in Elliott Schwartz and Barney Childs, eds., *Contemporary Composers on Contemporary Music* (New York: Holt, Rinehart and Winston, 1967), 207. The composer—or, as he preferred, "worker in rhythms, frequencies, and intensities"—dated his earliest use of the term "organized sound" to the 1920s.

5 Varèse also addresses this subject in "The Liberation of Sound"; e.g., "Each of my works discovers its own form," 203.

6 In my own works employing indeterminacy, "anything never goes." I normally control overall shape, sequence of events, proportions or sectional durations. These are always recognizably the same compositions from one performance to another, but they are also not possibly the same.

7 Cage presents a special (and often confusing) case that can lead to a false analogy, because his works from the 1950s onward typically involve elements of chance in composition as well as in performance. The incorporation of chance in the compositional process, however, is not a predictor of notation or style. The issue of whether, or to what degree, chance operations play a role in the compositional process is a separate, albeit related, question from that of the indeterminate score. A composition created through the use of chance operations can easily enough result in a score as traditionally notated as one prepared by Mozart (to whom a compositional "game" using musical dice has been attributed by some), or as minutely and precisely detailed as some of the best-known integral serial works. However, chance operations need not occur anywhere in the compositional process to create a work involving indeterminacy (i.e., degrees or factors of unpredictability) in performance.

8 Even had he lived past 1951 and continued composing during the ensuing "upheaval," it is doubtful that Schoenberg would have adopted new approaches to notation. See, however, his far-reaching proposal from the 1920s, "A New Twelve-Tone Notation" in *Style and Idea*, ed. Leonard Stein; trans. Leo Black (Berkeley: U of California, 1975), 354-62.

9 MICHAEL KIRBY, Futurist Performance (New York: E.P. Dutton, 1971), 190-91. Russolo's manifesto assumes the form of a letter written to his Futurist colleague, Francesco Balilla Pratella, apparently a trained musician. Russolo concedes, in his closing: "I am not a musician; . . . I am a Futurist painter who projects beyond himself on a much-loved art his own wish to renew everything. That is why, being bolder than if I were a professional musician, unpreoccupied by my apparent incompetence and convinced that audacity has all rights and all possibilities, I have been able to perceive by intuition the great renovation of music through 'The Art of Noise'" (174). Half of Kirby's comprehensive study is devoted to Futurist manifestos (including excerpts from scores by Russolo and Pratella) and playscripts.

10 Kirby, p. 33. This view would become central to Cage's thinking. The polymorphous conglomerate known as the Futurist movement, which flourished in Milan during the two decades surrounding the First World War, anticipated many elements that would later be called "happenings," "new music," and "performance art." Cage was apparently familiar with the movement and with Russolo's writings in particular no later than 1938, when he arrived in Seattle to teach at the Cornish School. He "began to associate himself with Russolo explicitly," and continued to acknowledge his influence thereafter. In the early 1960s, Cage specifically cited Russolo's manifesto "as one of the books with the great influence in his thinking." See Branden W. Joseph, "'A Therapeutic Value for City Dwellers': The Development of John Cage's Early Avant-Garde Aesthetic Position," in David W. Patterson, ed., *JOHN CAGE: Music, Philosophy, and Intention, 1933-1950* (New York: Routledge, 2002), 140-42, 169 (n. 15).

11 LUIGI RUSSOLO, "Enharmonic Notation for the Futurist Intonarumori," in Kirby, 187. The new medium of radio was viewed as a natural extension of the intonarumori, and in the 1930s, radio sintesi created by the movement's founder, Filippo Tommaso Marinetti, comprised broadcasts in which sounds were absent for periods of up to three minutes. According to Kirby, here "silence is 'heard' against a 'background' of sound; silence becomes equal to sound as an aesthetic tool. Obviously, thought of this kind has much to do with the work of contemporary composers such as John Cage" (Kirby, 145).

12 ROMAN HAUBENSTOCK-RAMATI, "Notation—Material and Form," in *Benjamin Boretz and Edward T. Cone, eds., Perspectives on Notation and Performance* (New York: Norton, 1976), 99. Writing in 1965, the author states: "The use of magnetic tapes, measured in centimeters per second, led to the graphic representation even of traditionally notated musical events, according to the principle time equals space."

13 LUKAS FOSS, "The Changing Composer-Performer Relationship," in *Benjamin Boretz and Edward T. Cone, eds., Perspectives on Notation and Performance*, 34.

14 A recent article discusses the extent to which "music—and the idea of music—appears everywhere in Kandinsky's work." GERARD MCBURNEY, "Sound and Vision," *Guardian Unlimited (June 24, 2006); http://arts.guardian.co.uk/features/story/0,,1804602,00.html; accessed August 7, 2007.*

15 Crumb addressed his Augenmusik in a 2002 interview with FRANK J. OTERI ("Jumping Off the Page to Become Sound," *August 1, 2002*), appearing in the American Music Center's online New Music Box: "I suppose all of my notation is concerned with being as clear as possible in communicating the necessary information to the performer. There are only a few pages of my music that are involved in what I would call these rather symbolic notations and I think you're referring to those specifically—circular

notations that involve bending the staves on the page. And this may reflect what seemed to me a kind of a circular element in the sound itself, in the music itself." *www.newmusicbox.org/article.nmbx?id=1809*; accessed August 5, 2007. In the Five Pieces for Piano (excerpted in Notations), the approach more closely parallels Schoenberg's notational "fine-tuning": the music still reads left to right, with a handful of special symbols denoting a variety of extended performance techniques, and written instructions interspersed, as needed. Crumb's use of time signatures here is a pragmatic one only, as the flow of events is intentionally free ("Quasi improvvisato"); nothing remotely metrical can (or should) result from these combined indications.

16 Both are reproduced in *BRYAN R. SIMMS, Music of the Twentieth Century: Structure and Style*, 2d ed. (New York: Schirmer, 1996), 351-352.

17 JOSEPH, "'A Therapeutic Value for City Dwellers': The Development of John Cage's Early Avant-Garde Aesthetic Position," 135-40.

18 HAUBENSTOCK-RAMATI, "Notation—Material and Form," 97.

19 See, for example, "untitled piece" by CARL FERNBACH-FLARSHEIM, and "I Have Confidence in You" by ERIC ANDERSEN (Cage, Notations, n.p.).

20 ARNOLD SCHOENBERG, "New Music, Outmoded Music, Style and Idea," *Style and Idea*, 115. Also, in "Composition with Twelve Tones (I)," from the same volume: "A creator has a vision of something which has not existed before this vision" (215).

21 ARNOLD SCHOENBERG, "On the Question of Modern Composition Teaching," *Style and Idea*, 374.

22 ARNOLD SCHOENBERG, "Heart and Brain in Music," *Style and Idea*, 75.

23 SCHOENBERG, "Composition with Twelve Tones (I)," *Style and Idea*, 215.

24 Two recent studies covering some of the same historical details also offer different perspectives; see MICHAEL HICKS, "John Cage's Studies with Schoenberg," *American Music, Vol. 8, No. 2 (Summer, 1990)*, 125-140, and DAVID W. BERNSTEIN, "John Cage, Arnold Schoenberg, and the Musical Idea," *in Patterson, ed., John Cage: Music, Philosophy, and Intention, 1933-1950*, 15-46.

25 BERNSTEIN, "John Cage, Arnold Schoenberg, and the Musical Idea," 25-32, 39.

26 BERNSTEIN, "John Cage, Arnold Schoenberg, and the Musical Idea," 33.

27 BERNSTEIN, "John Cage, Arnold Schoenberg, and the Musical Idea," 20-21.

28 Cage recalled that after multiple contrapuntal solutions were provided for a cantus firmus, Schoenberg repeatedly asked his students to identify the common principle underlying these. Since it took Cage forty years to determine that "the answers have the question in common," this anecdote only appeared in print a little over a decade before his death. Bernstein (37) and Hicks (135) cite two different sources. As a further link with Schoenberg, Bernstein (38) also cites two statements in which Cage explains that "the questions that are asked" in his works represent an aspect of compositional choice and control.

29 BERNSTEIN, "John Cage, Arnold Schoenberg, and the Musical Idea," 40. He draws this inference from a statement in which Schoenberg suggests that a motive is more than "a seed from which a composition evolves," but rather, "has the potential for more than a single compositional realization." In light of the aforementioned parallels between the two composers: "This approach is a significant departure from the determinism often associated with organicist aesthetics, and it became an important point of aesthetic convergence between Schoenberg and Cage" (21).

30 HICKS ("John Cage's Studies with Schoenberg," 134) has identified as the original source of this attribution a 1953 letter to Cage from Peter Yates, recounting a conversation with Schoenberg several years earlier. (Yates later repeated this comment in a review of two Cage albums, appearing in the periodical, Arts and Architecture.) Hicks also confirms that Cage, the son of an inventor, "gleefully accepted" Schoenberg's appraisal (135).

31 BERNSTEIN, "John Cage, Arnold Schoenberg, and the Musical Idea," 31. Thus, everything that Cage learned from his teacher about musical structure and division of the whole into constituent parts he transformed from a thematic-harmonic model to a temporal context. "Cage perceived this approach to structure as a necessary improvement on Schoenberg's theory, since time is the a priori phenomenon within which pitch, harmony, noise, and silence may exist."

32 ARNOLD SCHOENBERG, "On the Relationship to the Text," Style and Idea, 144.

33 His untimely death in a California automobile accident, in 1964, followed shortly the release of his debut LP recording, *OF LOVE, OF WAR, OF MANY THINGS* (Columbia CL 2157). The liner notes state that in 1953, Mörk received the Folksong Award at the International Eisteddford in Wales.

34 This work and its premiere (at the University of Colorado in Boulder) are described here as an example of a compositional premise that would be poorly served by the exclusive use of traditional notation. Other logistical challenges posed by the work also led to workable solutions: To aid memorization, most musicians reduced the essential information needed to perform their part to a small cue card. To facilitate movement in the darkened hall (while performing), shoeless musicians treaded a nylon cord taped along the pathways on the floor. To insure the prescribed time-frame and sequence of sonic-spatial events (for their own sake, and to avoid injuries), luminously painted cue cards were posted in the control room window at the rear of the hall every 30 seconds. Rehearsals extended over a period of approximately four months, fortunately assisted by a theatrically trained movement specialist.

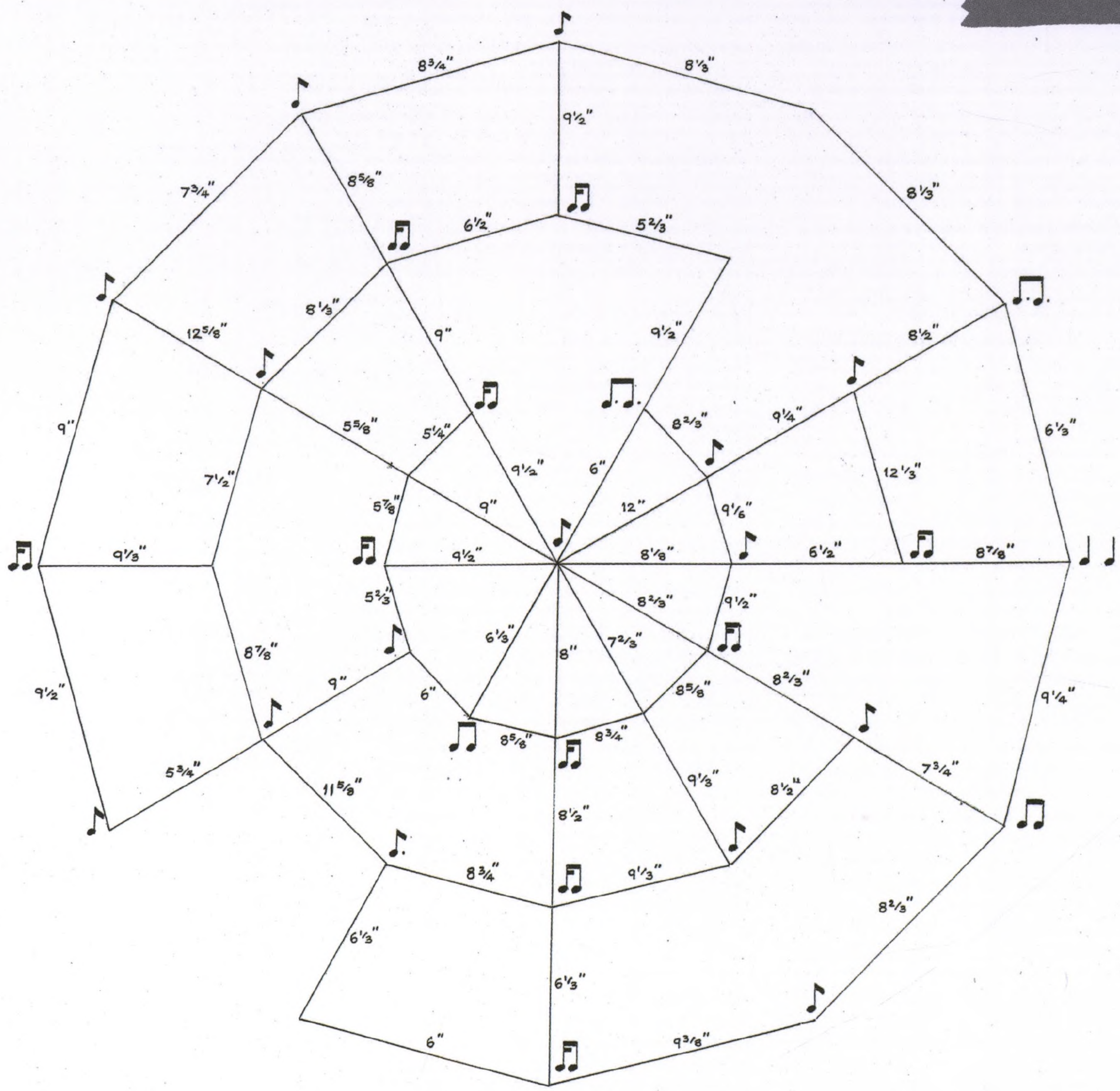
35 Any composer who has worked with non-standard notational approaches has also likely worked with performers who "resort privately to standard musical symbols in the process of working out indeterminate or graphic scores." ALOYS KONTARSKY, "Notation for Piano," in Benjamin Boretz and Edward T. Cone, eds., *Perspectives on Notation and Performance*, 188. When preparing indeterminate compositions or parts thereof, for example, some may prefer to preserve one possible realization, among the perhaps infinite number and variety the composer might imagine would be equally available options during a real-time performance.

36 Composed between 1977 and 1979, these works served as partial fulfillment of the requirements for the Doctor of Musical Arts degree at the University of Illinois (Urbana-Champaign), received in 1980.

37 Numerous individuals, from Laurie Anderson to Frank Zappa, have been cited as the source of an amusing observation, perhaps equally immutable: "Writing about music is like dancing about architecture." See MARY LOUIS SCHUMACHER, "A Question," Milwaukee Journal Sentinel *(July 20, 2003); http://findarticles.com/p/articles/mi_qn4196/is_200307/ai_n10890251; accessed August 11, 2007.* For a pedagogical application, see FRANCESCA RIVERA, "If 'Writing about Music is Like Dancing about Architecture,' Maybe it is Time to Draw: Using Visual Aids to Introduce Musical and Stylistic Analysis," Graduate Student Instructor Teaching Resource Center, University of California, Berkeley; *http://gsi.berkeley.edu/awards/02_03/rivera.html, accessed August 11, 2007.*

38 CAGE, *Notations*, n.p.

CHRISTOPHER FOX



Christopher Fox; *at the edge of time*. For a bass drum with a soft-headed beater, either as a solo or simultaneously with any other part(s) of *at the edge of time*. Used by permission of Christopher Fox, © 2007.

at the edge of time: Music is, above all, an art in time, and time is both something we can measure against a pulse—a clock, a heartbeat—as well as being a space in which things may happen. *at the edge of time* is music in which a group of musicians, and the sounds they make, occupy a space in time, marking it, giving us a sense of how it is passing. The musicians are quite near to us but their sounds seem to come from a long way away, if not from the edge of time itself then at least from the edge of this music. It plays for about 15 minutes.

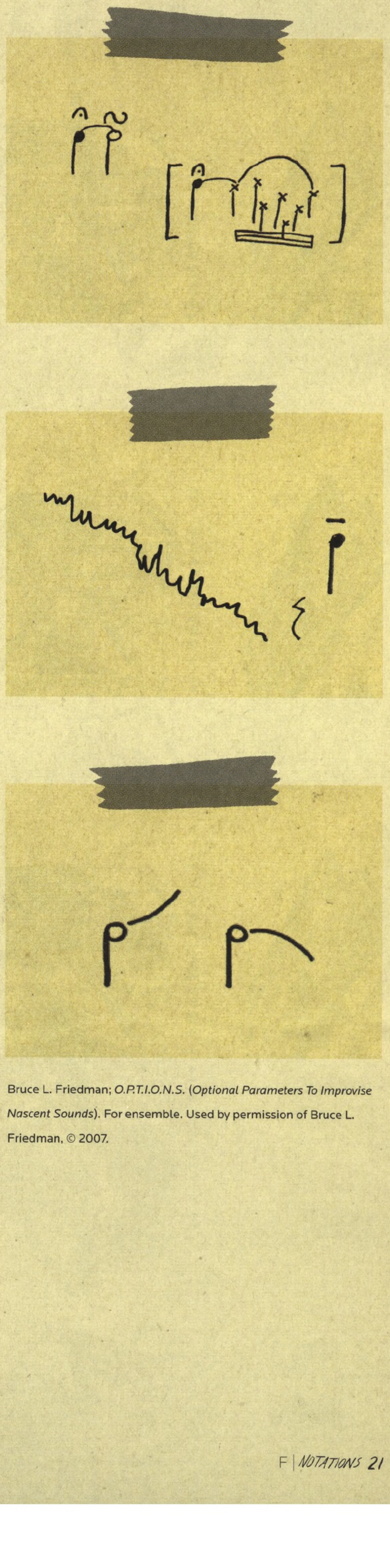
BRUCE L. FRIEDMAN

O.P.T.I.O.N.S. is a collection of traditional and original music notation symbols, covering a variety of musical parameters. The purpose of this notation approach is to guide an improvisation in as unrestricted a manner as possible. The resultant music is derived more from personal interpretation than the symbols themselves. Hence the acronym *O.P.T.I.O.N.S.*—Optional Parameters to Improvise Organized Nascent Sounds.

When used in a rehearsal/performance context, each notation symbol is presented separately on a small index card. This format allows for a free ordering of the symbols. Rules for interpretation, as well for the structural design of an improvisation, are at the discretion of the participants.

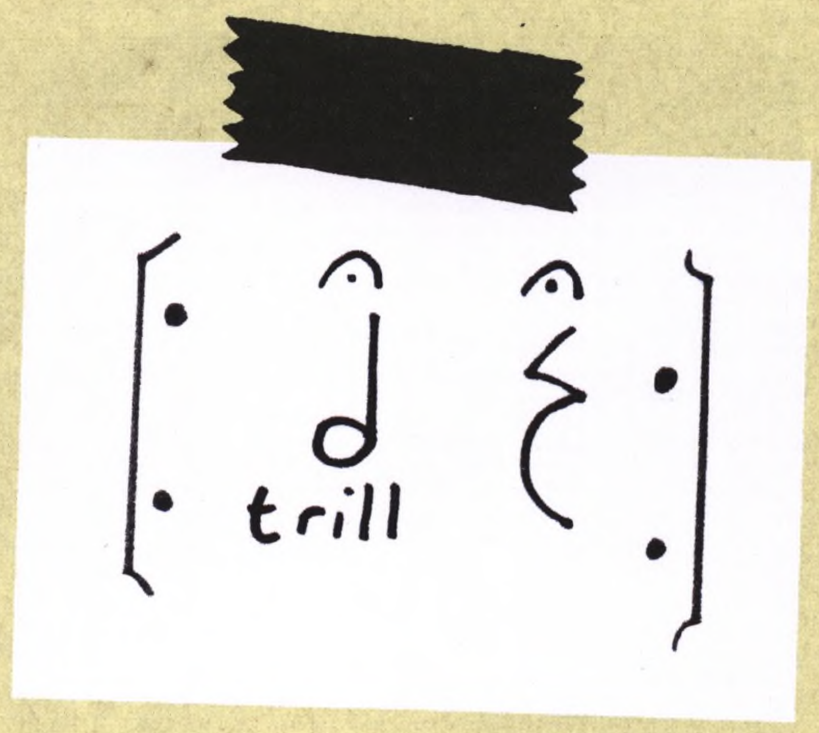
A variety of standard Western musical elements are included as a way of coordinating or unifying improvisers. (i.e., a crescendo is a crescendo, a dotted quarter note followed by an eighth note rest is simply, just that.) Some of the symbols though are original and more abstract. The graphic notation symbols may be used more than once per composition, or not at all. All or part of an ensemble may use a particular symbol. With this flexibility, interpretations can vary from one improvisation to the next.

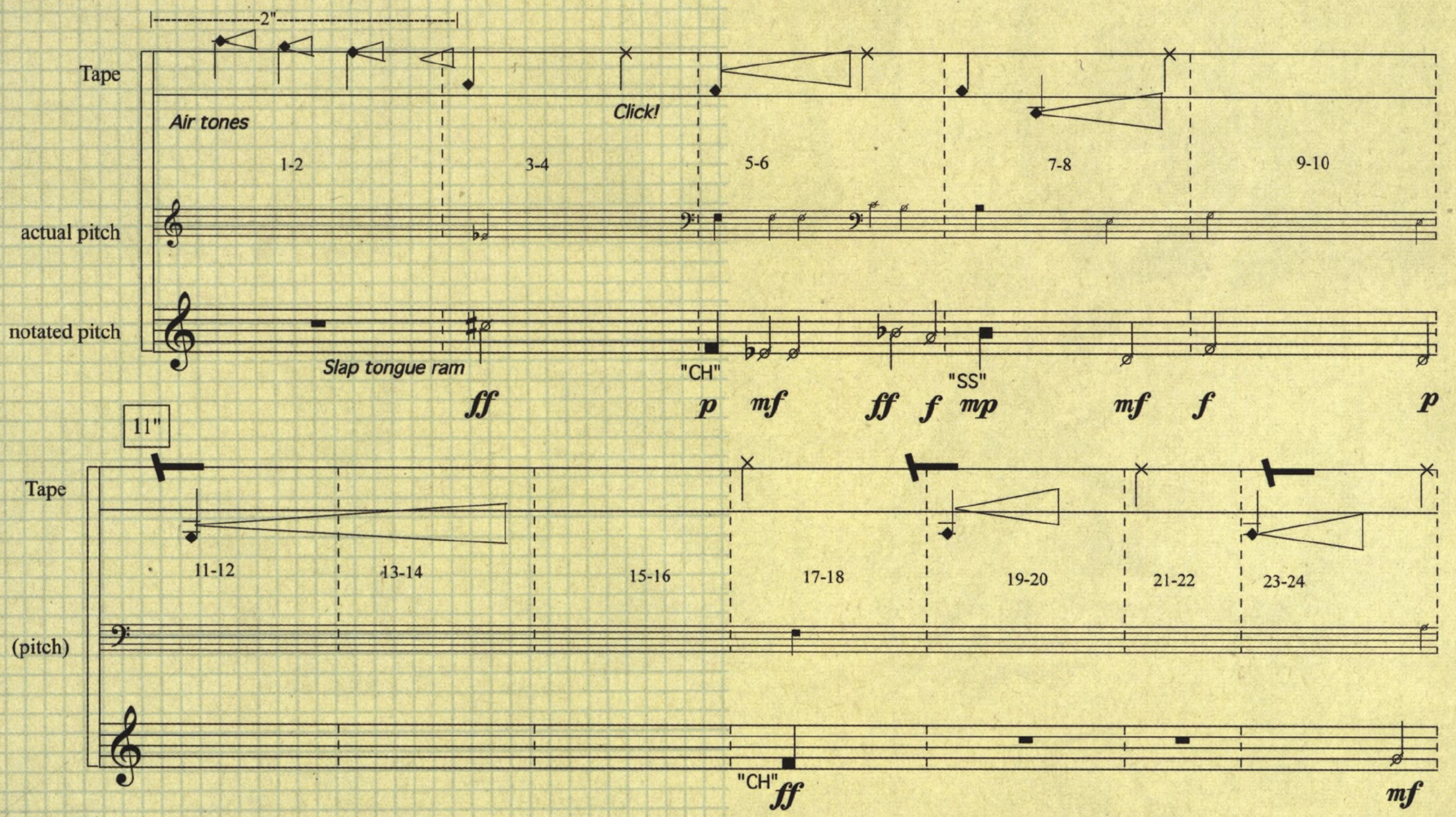
Since this project was designed to elicit rather than to direct improvisation, it could be considered for dual application. While knowledgeable improvisers can take advantage of the experimental potential of the notation style, more novice players might be facilitated by the same directed liberties.



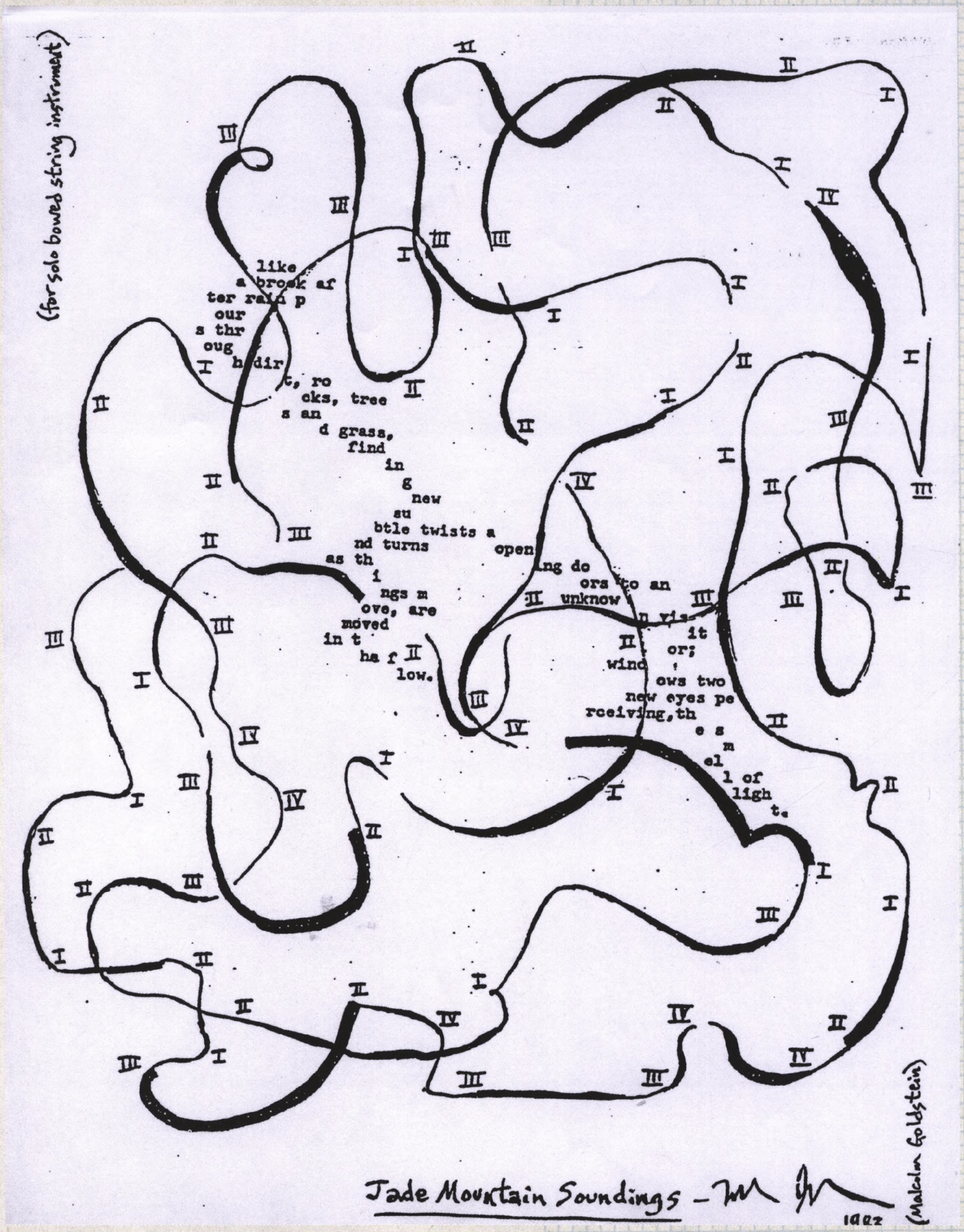
Bruce L. Friedman; *O.P.T.I.O.N.S.* (*Optional Parameters To Improvise Nascent Sounds*). For ensemble. Used by permission of Bruce L. Friedman, © 2007.

BRUCE L. FRIEDMAN

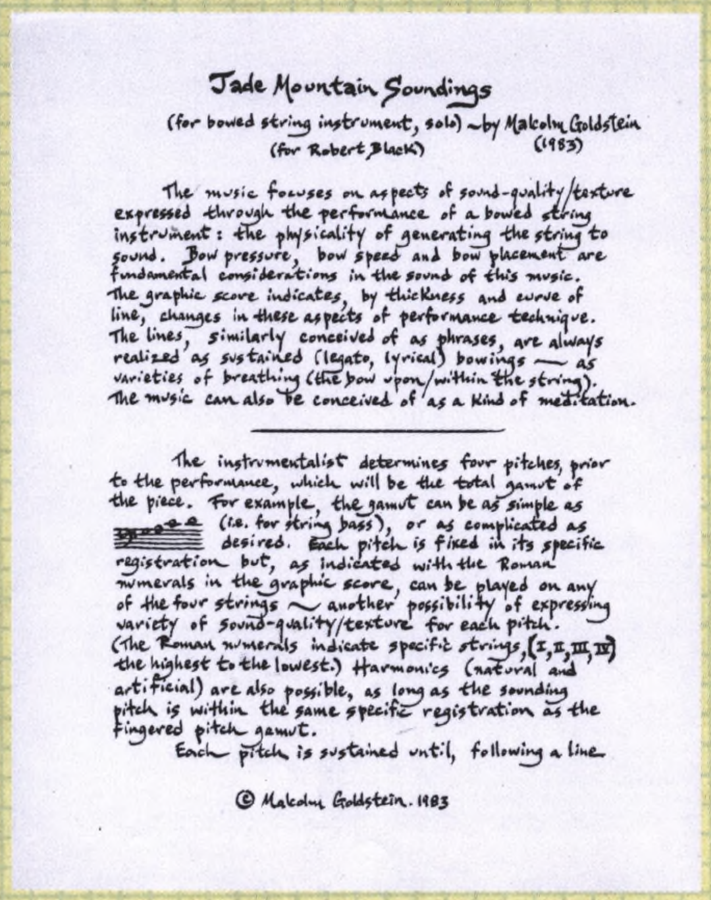




Guillermo Galindo; *Cisma*. For alto and bass flutes with electronics. Used by permission of Guillermo Galindo, © 2003 (revised 2007).



Malcolm Goldstein; *Jade Mountain Soundings*. For any string instrument. Used by permission of Malcolm Goldstein, © 1983.



Jade Mountain Soundings

(for bowed string instrument, solo) ~by Malcolm Goldstein

(for Robert Black) (1983)

The music focuses on aspects of sound-quality/texture expressed through the performance of a bowed string instrument: the physicality of generating the string to sound. Bow pressure, bow speed and bow placement are fundamental considerations in the sound of this music. The graphic score indicates, by thickness and curve of line, changes in these aspects of performance technique. The lines, similarly conceived of as phrases, are always realized as sustained (legato, lyrical) bowings — as varieties of breathing (the bow upon/within the string). The music can also be conceived of as a kind of meditation.

The instrumentalist determines four pitches, prior to the performance, which will be the total gamut of the piece. For example, the gamut can be as simple as [illegible] (i.e. for string bass), or as complicated as desired. Each pitch is fixed in its specific registration but, as indicated with the Roman numerals in the graphic score, can be played on any of the four strings ~ another possibility of expressing variety of sound-quality/texture for each pitch. (The Roman numerals indicate specific strings, (I, II, III, IV) the highest to the lowest.) Harmonics (natural and artificial) are also possible, as long as the sounding pitch is within the same specific registration as the fingered pitch gamut.

Each pitch is sustained until, following a line

© Malcolm Goldstein. 1983

MALCOLM GOLDSTEIN

Jade Mountain Soundings: The music focuses on aspects of sound-quality/texture expressed through the performance of a bowed string instrument: the physicality of generating the string to sound. Bow pressure, bow speed, and bow placement are fundamental considerations in the sound of this music. The graphic score indicated, by thickness and curve of line, changes in these aspects of performance technique. The lines, similarly conceived of as phrases, are always realized as sustained (legato, lyrical) bowings—as varieties of breathing (the bow upon/within the string). The music can also be conceived of as a kind of meditation.

The instrumentalist determines four pitches, prior to the performance, which will be the total gamut of the piece. For example, the gamut can be as simple as G-A-C-D (i.e., for string bass), or as complicated as desired. Each pitch is fixed in its specific registration but, as indicated with the Roman numerals in the graphic score, can be played on any of the four strings—another possibility of expressing variety of sound-quality/texture for each pitch. (The Roman numerals indicate specific strings [I, II, III, IV], the highest to the lowest.) Harmonics (natural and artificial) are also possible, as long as the sounding pitch is within the same specific registration as the fingered pitch gamut.

Each pitch is sustained until, following a line on the graphic score, another Roman numeral is arrived at—at which point the string player changes bow direction and plays another pitch (of the same pitch is possible if a different string is indicated). Bow direction changes, that occur at these points, should be as smooth as possible.

Duration of the sustained pitch—always to be fit into one bow duration—is thus determined by the proportion of length of line transversed from numeral to numeral. (As a guide, 1 inch = 3 to 5 seconds, but this will depend on the string player's bow control and facility.)

Choice of pitch to be played is up to the choice of the performer; it is to be improvised. (It is possible to use one or two pitches for a while; also, it is possible to change pitch with every bow change—at the discretion of the performer. Note that the apparent structure of the piece relates also to this process of time/spaces, of various rates of change, of pitch focus.)

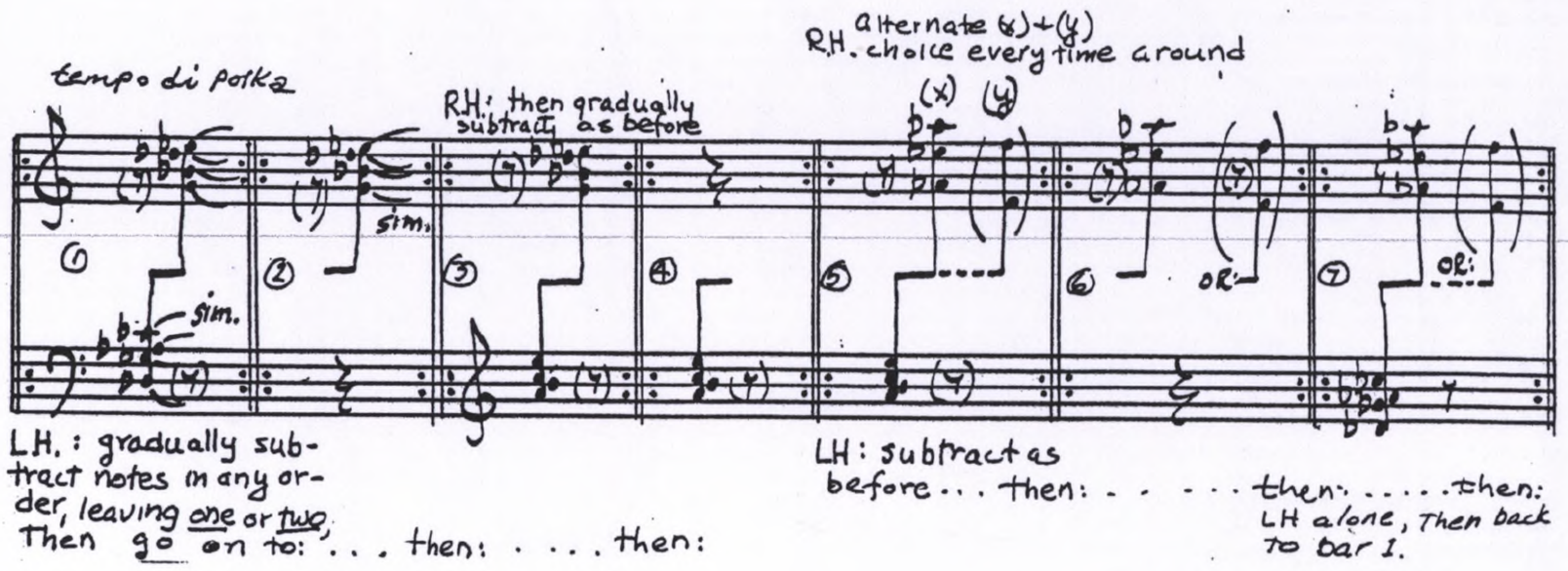
Dynamics, also, are improvised, from *ppp* to *f*, though never excessively loud. It will become apparent that, to a certain degree, the dynamics, as well as the articulation and decay of a pitch, will be controlled by the bow pressure/speed as indicated in the graphic score. (But dynamics and bow pressure are not synonymous.)

A wide range of non-vibrato—varieties of vibrato should be used, with each pitch having its own quality. (It will happen that a heavy bow pressure and slow bow speed, without vibrato, will sound one way; whereas adding vibrato will radically alter the pitch/noise balance of the resulting sound. So, also, slight alterations of bow speed will alter the balance. In fact, any slight or gross alteration of any aspect of the total physical gesture—relationship of the string player through the bow to the string—will be expressed in the sound being generated. This should be explored in the process of preparing the music for performance.

The lines of the graphic score should be thought of as phrases that are expressed as much by varieties of bow pressure, bow speed, and bow placement, as by pitch and dynamic changes. The thickness of the line indicates the amount of bow pressure and/or bow speed: thick = more pressure and/or less speed; thin = less pressure and/or more speed. (However, the bow speed, at times, can be interpreted the reverse of the above, since it will also be conditioned by the duration of the sustained pitch.) The notations also indicate manners of articulating and performing these bowing techniques: sudden changes of pressure, (symbol); gradual changes, (symbol); a constant, sustained condition by constant thickness; gradual changes and/or irregular changes by analogous indications in the graphic line, to be expressed literally in the performance technique. (Heavy bow pressure indicated by the thickest line, should be almost at the edge of noise—but always with pitch clearly perceptible.)

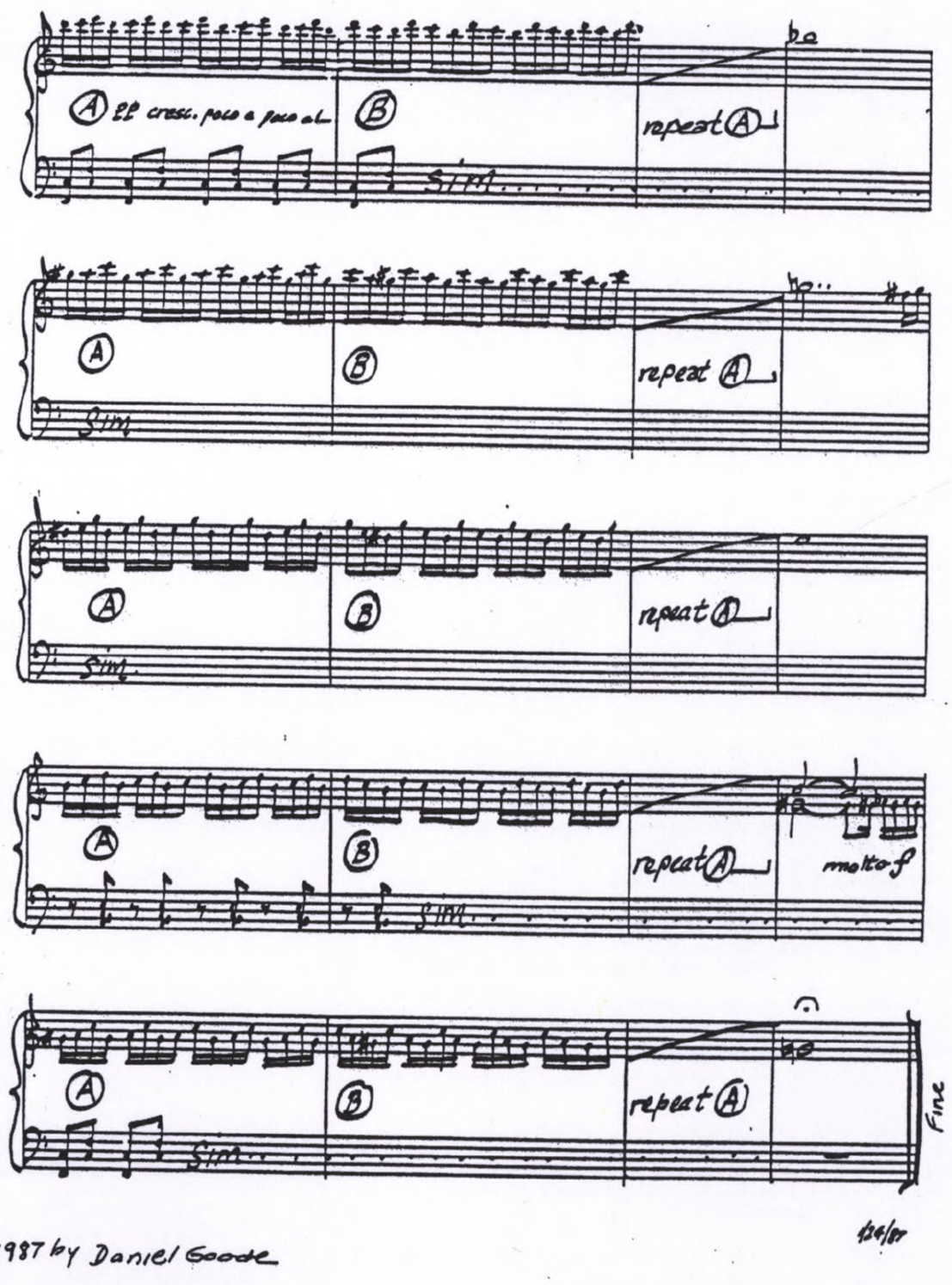
The curvature of the line indicates changes of bow placement: from on the bridge to on the fingerboard and anywhere in between. When the line curves more gradually, so also the shift of bow placement is more subtle; when the line curves more suddenly or extremely, so also the bow placement should change accordingly (but always *legato*). In what direction these changes take place is up to the choice of the performer. (Other possible interpretations of line curvature include use of bow wood to varying degrees and variety of vibrato—but these are secondary to bow pressure.)

Diet Polka



Each bar = ca. 15"-60", subtraction starts no earlier than half way through time period. In 5th bar choose from (or alternate betw.) (x) or (y) which holds thru bars 6+7. After 1st cycle thru, choose any register for each hand. Reed changes ad lib. Go any length of time; last cycle: choose the F-octave at bar 5 (RH) and it must be in lowest register: ; when in bar 6: . . .

Change LH to accompaniment pattern below; quickly add the melody as notated appassionato con carne:

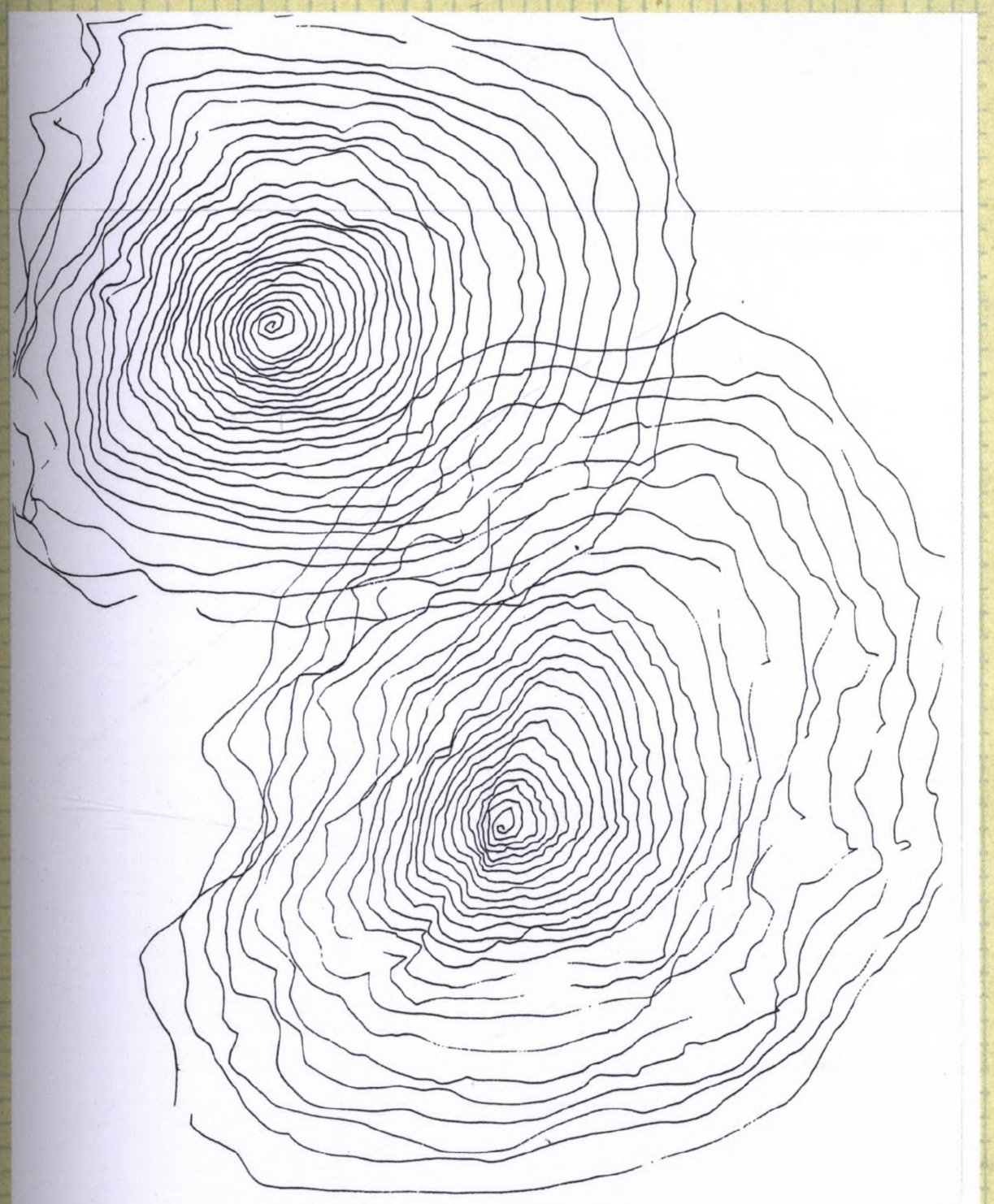


© 1987 by Daniel Goode

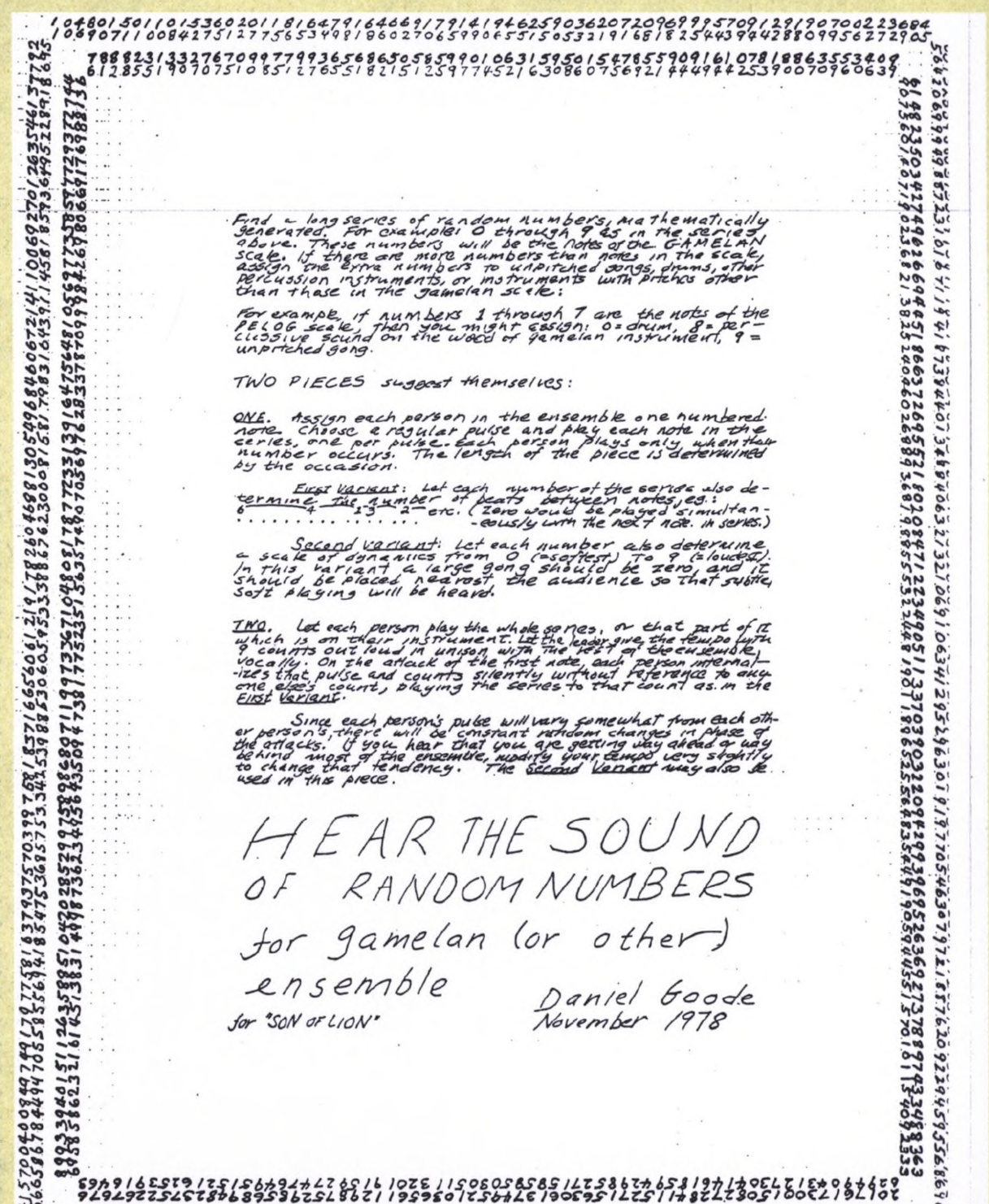
4/24/87

Daniel Goode; "Diet Polka" from *One Page Pieces*. For accordion or any keyboard instrument. Used by permission of Daniel Goode / Frog Peak Music, © 1999.

DANIEL GOODE



Daniel Goode; "Gong Spread" from *One Page Pieces*. For any number of seven or more performers playing a family of (similar sounding) hand-held instruments, such as gongs.
Used by permission of Daniel Goode / Frog Peak Music, © 1999.



Daniel Goode; "Hear the Sound of Random Numbers" from *One Page Pieces*. For any ensemble.
Used by permission of Daniel Goode / Frog Peak Music, © 1999.

One Page Pieces is a collection of twenty-four scores in which the musical information for each piece, no matter its duration, is compressed through the use of verbal and graphic language. The collection was first made in the mid-1980s and revised in 1999.

Daniel Goode

Conceptual, Verbal, and Graphic Scores

A verbal score tells you how to make the music—in language, rather than in musical notation. There may be some musical symbols in a verbal score, maybe a graphic, but you are being told how to make the music via language, not musical notes in musical staves to be played by specific musical instruments or voices (though the verbal score also can tell you what instruments should be played). The verbal score is the elephant-in-the-room of the Modernist and Experimental music traditions since it wipes clean the premises of musical notation. Moving from idea (expressed in words and maybe diagrams or sketches) to realization requires imaginative input from the performers on a level quite different from and more inclusive than what performers do with traditional musical notation. The verbal score can be difficult for a trained musician, and a godsend to a talented, but non-musically-literate performer. A verbal score may ask the performers to do anything, including making up their own sounds, or notes according to the instructions given. Call it the Platonic idea of musical composition because the idea precedes the actual notes, that is, the realization in sound.

Nothing more challenges music Conservatory training and tradition than the verbal score: that you can make music without that musical literacy that the Conservatory is in charge of instilling. The tool of the verbal score does an end-run around that pillar of cultural education, musical notation. It is radical, too, because it steals musical technique away from the Medieval power-center of the Conservatory. Yoko Ono may have done the earliest ones in the mid-50s. La Monte Young did a series in 1960 (sometimes these are called conceptual scores, or conceptual music. A full account would include the Fluxus artists such as George Brecht, Bob Watts, Dick Higgins, Philip Corner and others who developed "Event Scores" influenced by John Cage's teaching).

The verbal score puts an intelligent agent in charge of finding the right performance for the composer's idea, but the performer is also the composer's partner, on the same level because s/he is in possession of the concept behind the music, expressed succinctly in words. Yet verbal scores can also be challenging because, invariably, there are questions about exactly what might be meant by the words, or sentences.

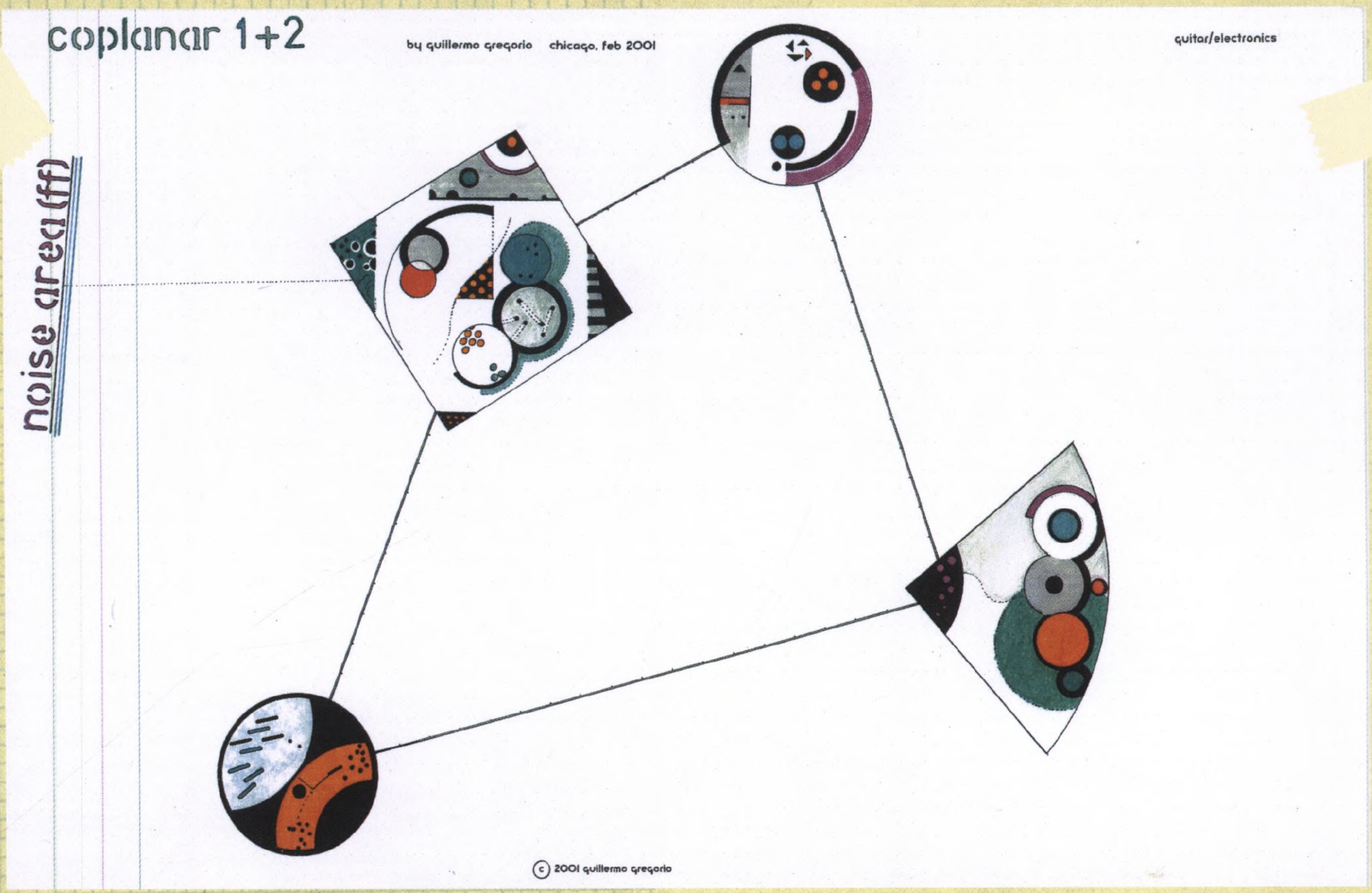
And the musicians must be willing to give of themselves, to inhabit the ideas, to do, to compose what is needed to make the ideas into music. A spiritual commitment is required, and the building of a performance community, because there is no such thing as simply "playing the score."

Maybe just from this short discussion, the reader can sense how the verbal score is a powerful and flexible tool: first, because it addresses performers in their native language, their first language.

And second, because it can say things that notes can't. In thinking about all this, it suddenly occurred to me to ask what if music notation from its beginnings had taken the form of human language, written and spoken, before it took its familiar form of notes and rests? Wouldn't the verbal score then be at the center of music culture and music teaching instead of at its periphery? Imagine writers and composers together, teaching the use of language to convey sound, idea, emotion, performance. This is a thought experiment we should all consider making.

Conceptual, graphic, and verbal scores challenge the immovable scholasticism of music theory as it has been taught since Medieval times in music theory courses world-wide, the kind of courses that discourage so many brilliant music students from studying music theoretically. Collections that bring this work to the fore start to redress the imbalance.

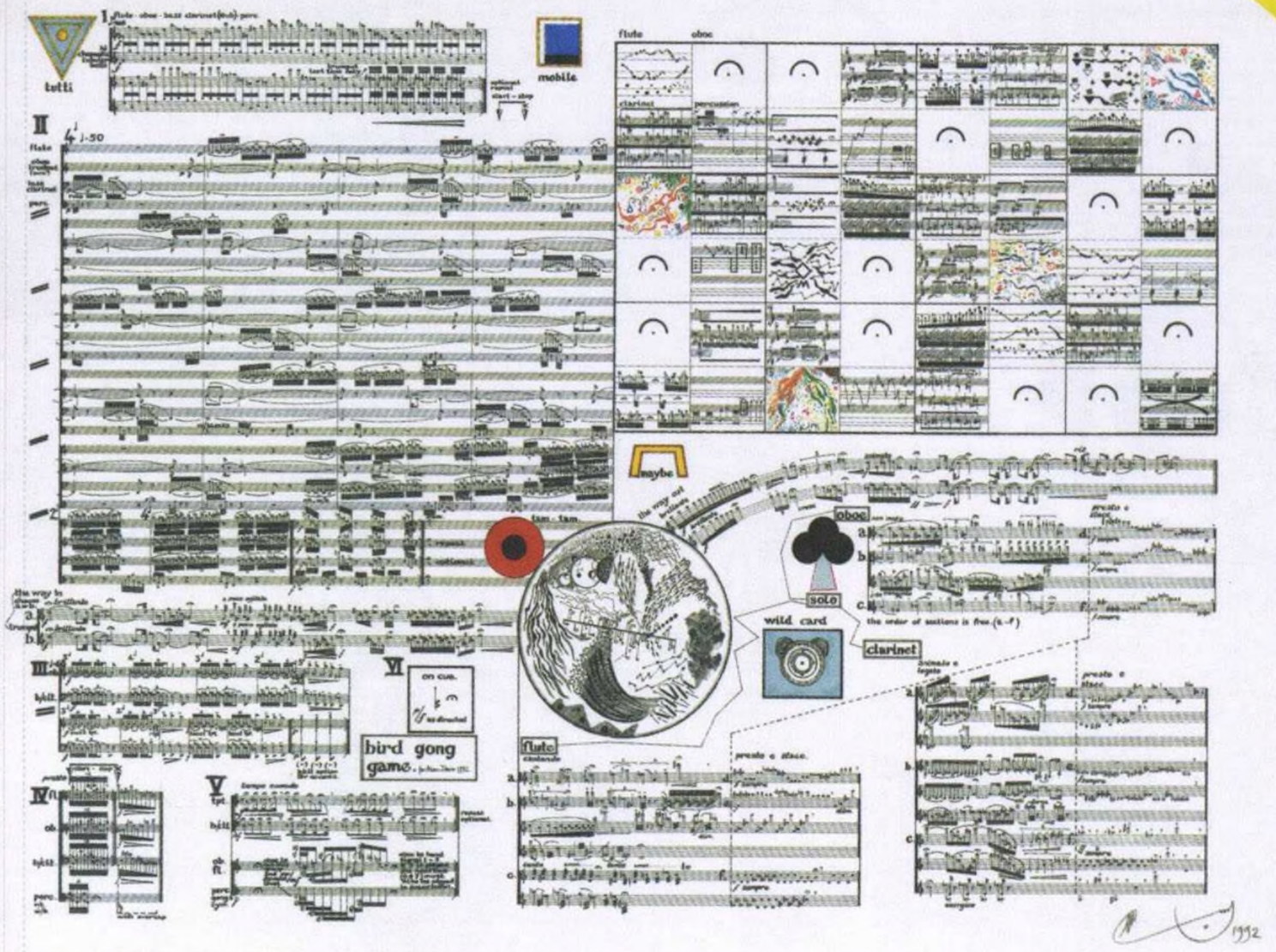
Note: this has been adapted from the liner notes to *Philip Corner: Extreme Positions.*

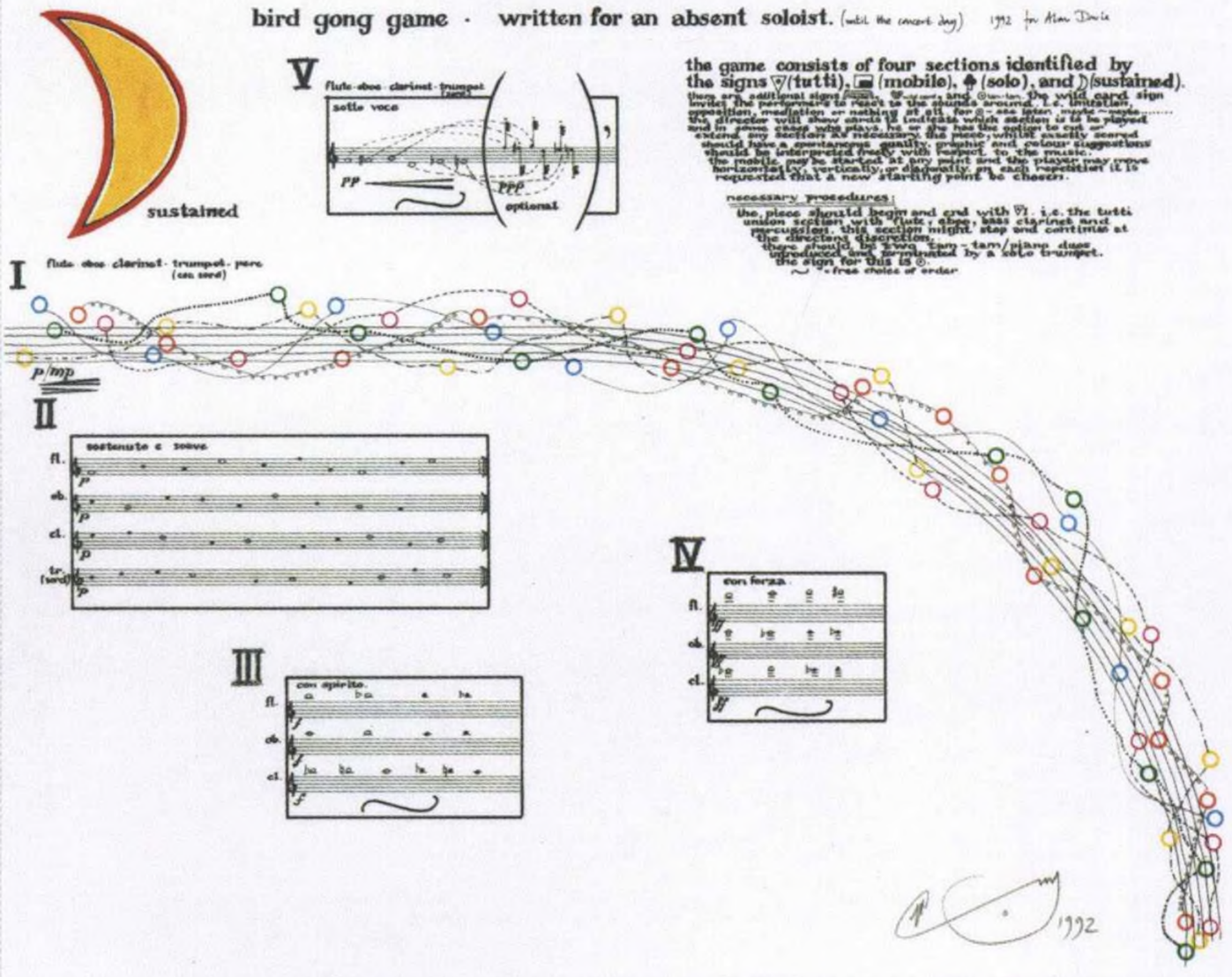


Guillermo Gregorio; *Coplanar 1 (+2)*. For oboe, clarinet, viola, cello, contrabass, guitar, and live electronics. Used by permission of Guillermo Gregorio, © Chicago, February 2001.

Coplanar 1(+2) consists of two different types of notation performed simultaneously, one in a relatively conventional fashion, and another one that is a purely graphic score. The former is intended for the "melodic" instruments (oboe, clarinet, viola, cello, contrabass) and the latter for "prepared" guitar and live electronics. Both scores are formed by isolated musical episodes connected by straight lines of variable length. The connecting lines should be read as silences, with measures indicating duration. The performers may start anywhere, and create their own itineraries through the episodes containing different melodic fragments (in the case of the semi-conventionally notated circuit) and fragments of undetermined sonic events (in the case of the graphic one) in any direction, by following the possible circuits, performing the given material, and observing the lines of silence. In this piece the cohesive structural element is silence—or, in visual terms, the empty space which the physical object inhabits.

BARRY GUY



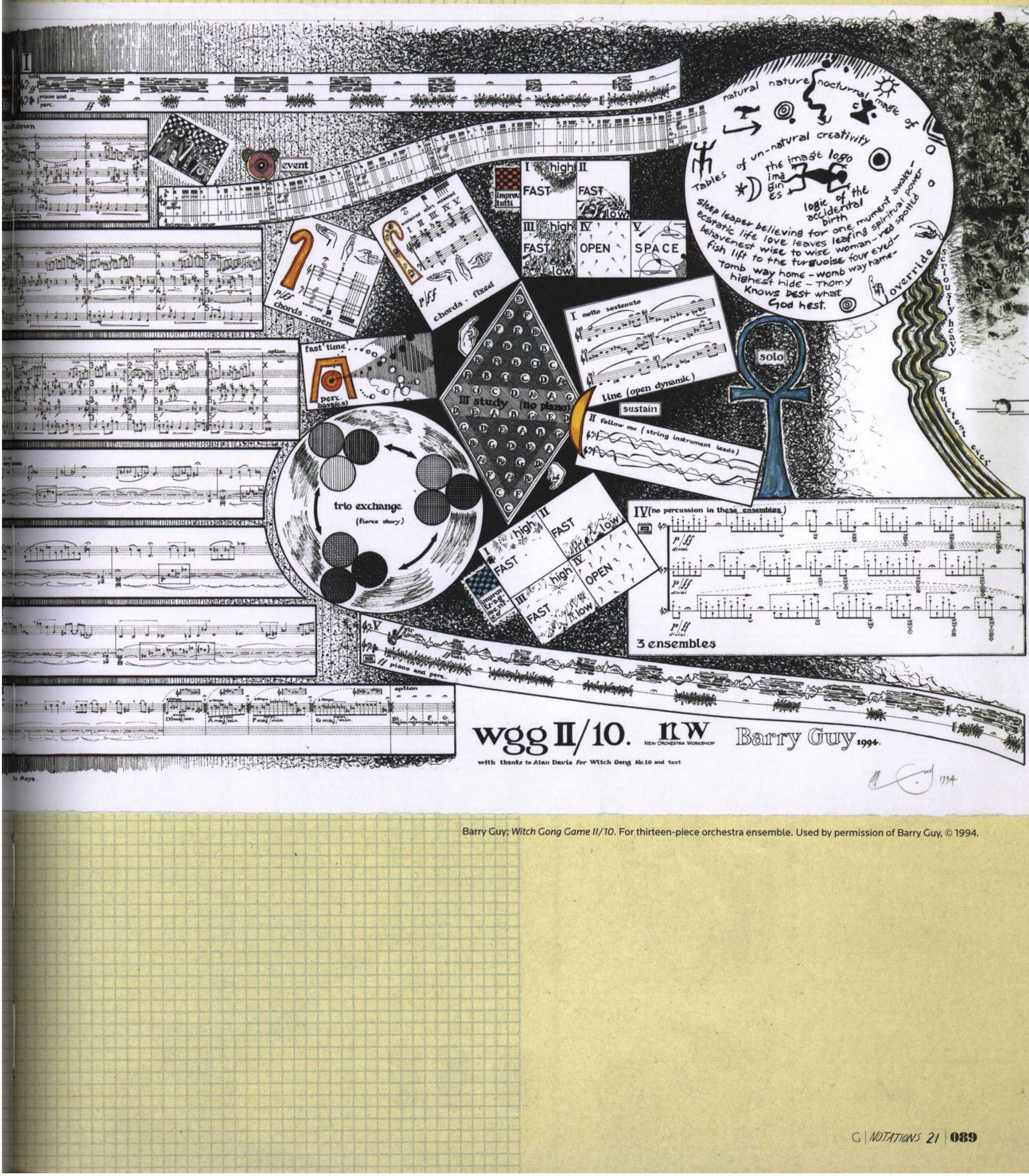


Witch Gong Game II/10 utilizes various "signs" that feature in many of Alan Davie's paintings. The signs jump ship from the painting to a new life, designating musical archetypes. These are planned to give an array of possibilities and allow the director to layer material and set up various polyphonies as well as leaving open spaces for improvisations. Crucially, all of these scores present musical possibilities on one "landscape" page, obviating the need for page-turns as in a conventional score. To harness the various musical archetypes, signs appending the score are presented on a series of cards that can be rapidly displayed to performers.

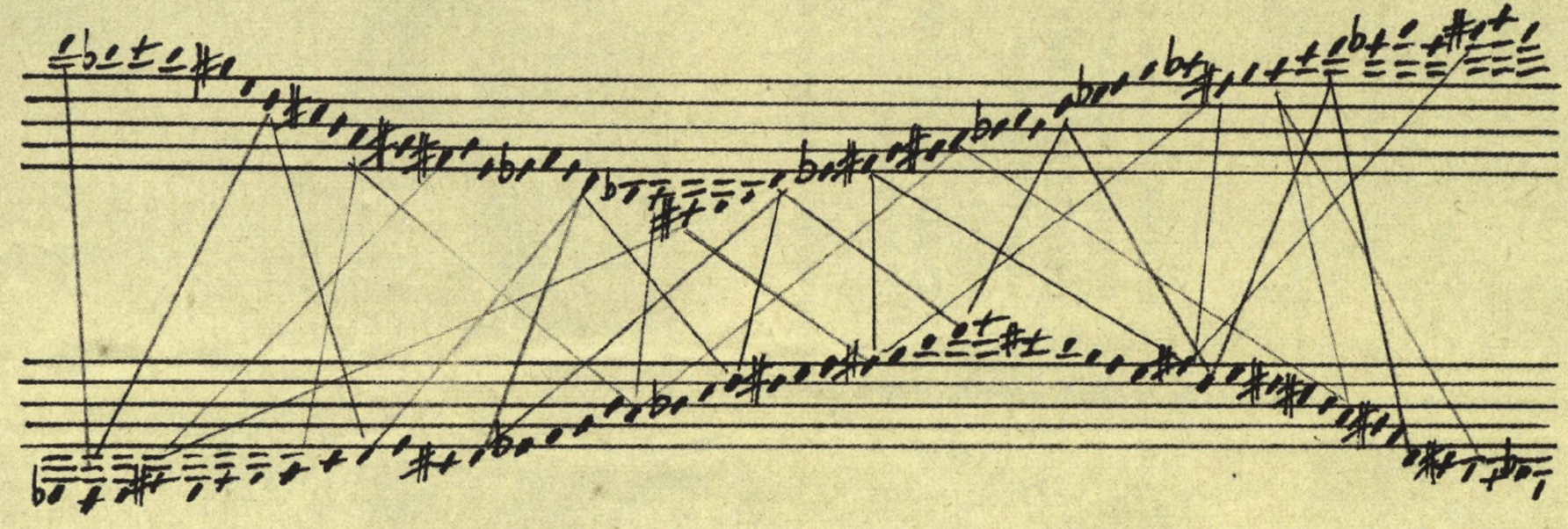
As an overall concept, the three paintings of Alan Davie are deconstructed to reveal the signs that are then used to generate a new language appropriate to the special needs of improvisers and composer alike. Color and graphics, therefore, perform an important role in that they define extensions to the basic presentation of musical material.

Barry Guy; *Bird Gong Game*. For improvising soloist, flute, oboe, clarinet and bass clarinet, trumpet, and percussion.

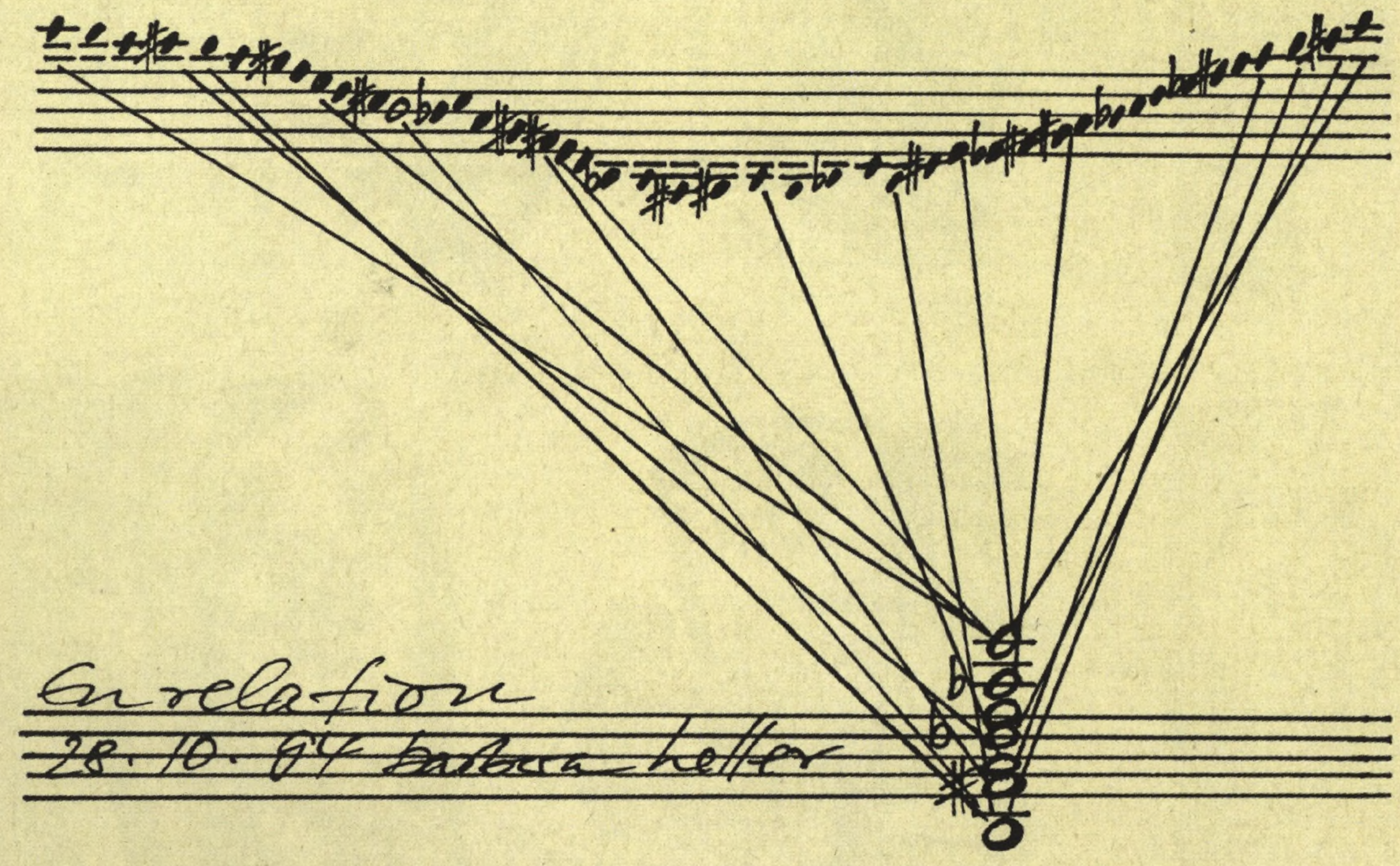
Used by permission of Barry Guy, © 1992.



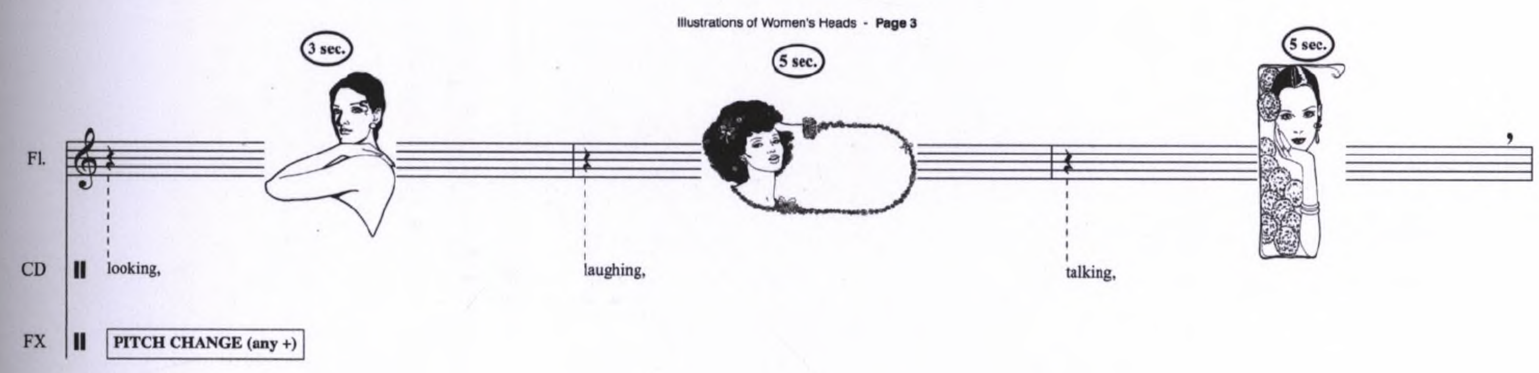
Barry Guy; *Witch Gong Game II/10*. For thirteen-piece orchestra ensemble. Used by permission of Barry Guy, © 1994.

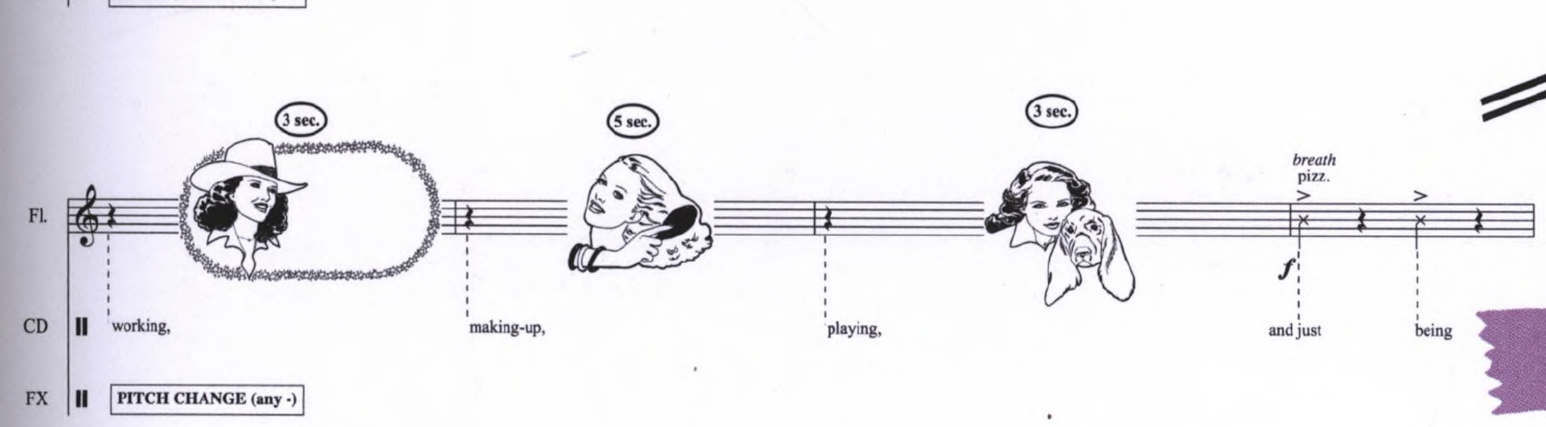


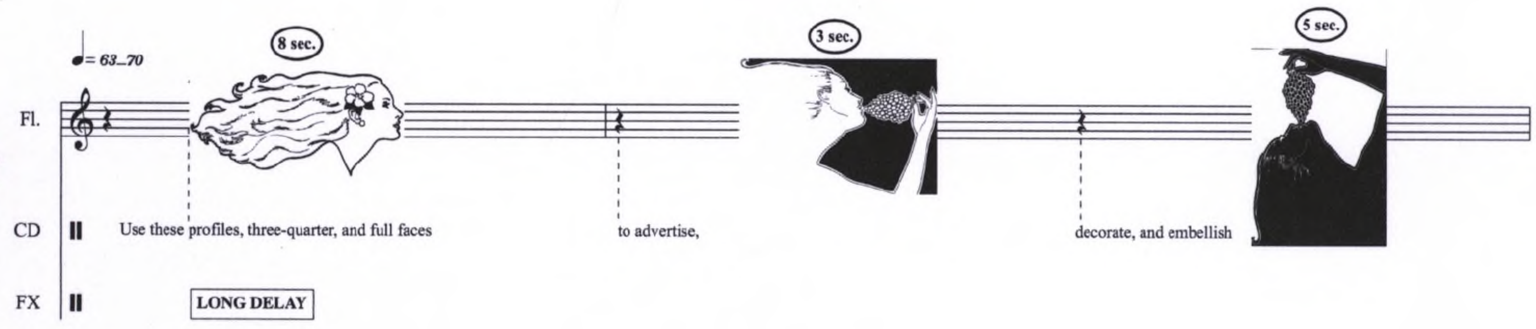
le triple accord 20.11.94 barbara heller

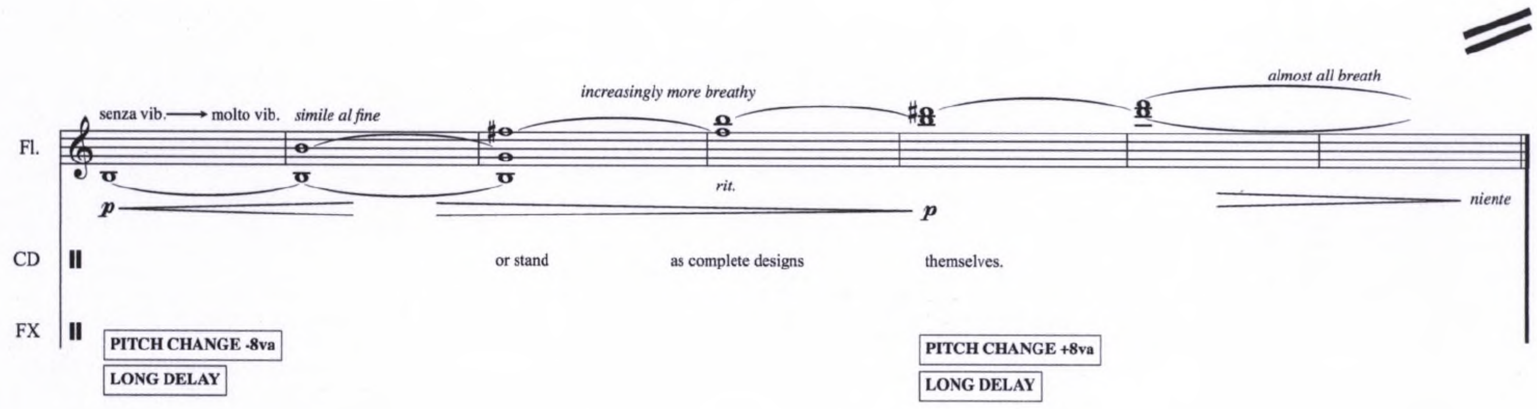


Barbara Heller; *le triple accord* and *en relation*. Both used by permission of Furore Verlag, © 1994.







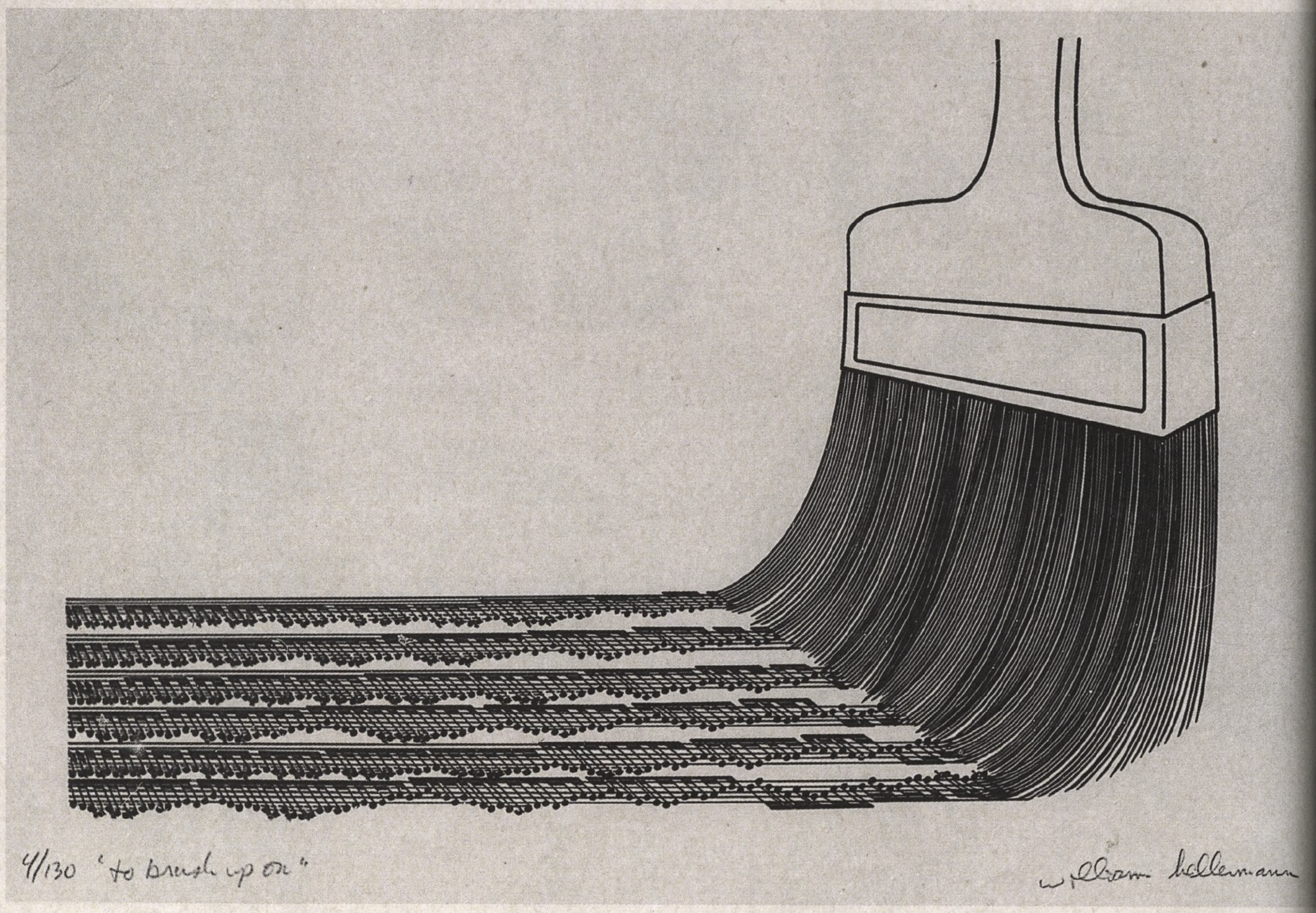


Brian Heller; *(Ready to Use) Illustrations of Women's Heads*. For any solo wind instrument, electronic effects, and CD playback. Used by permission of Brian Heller, © 2003.

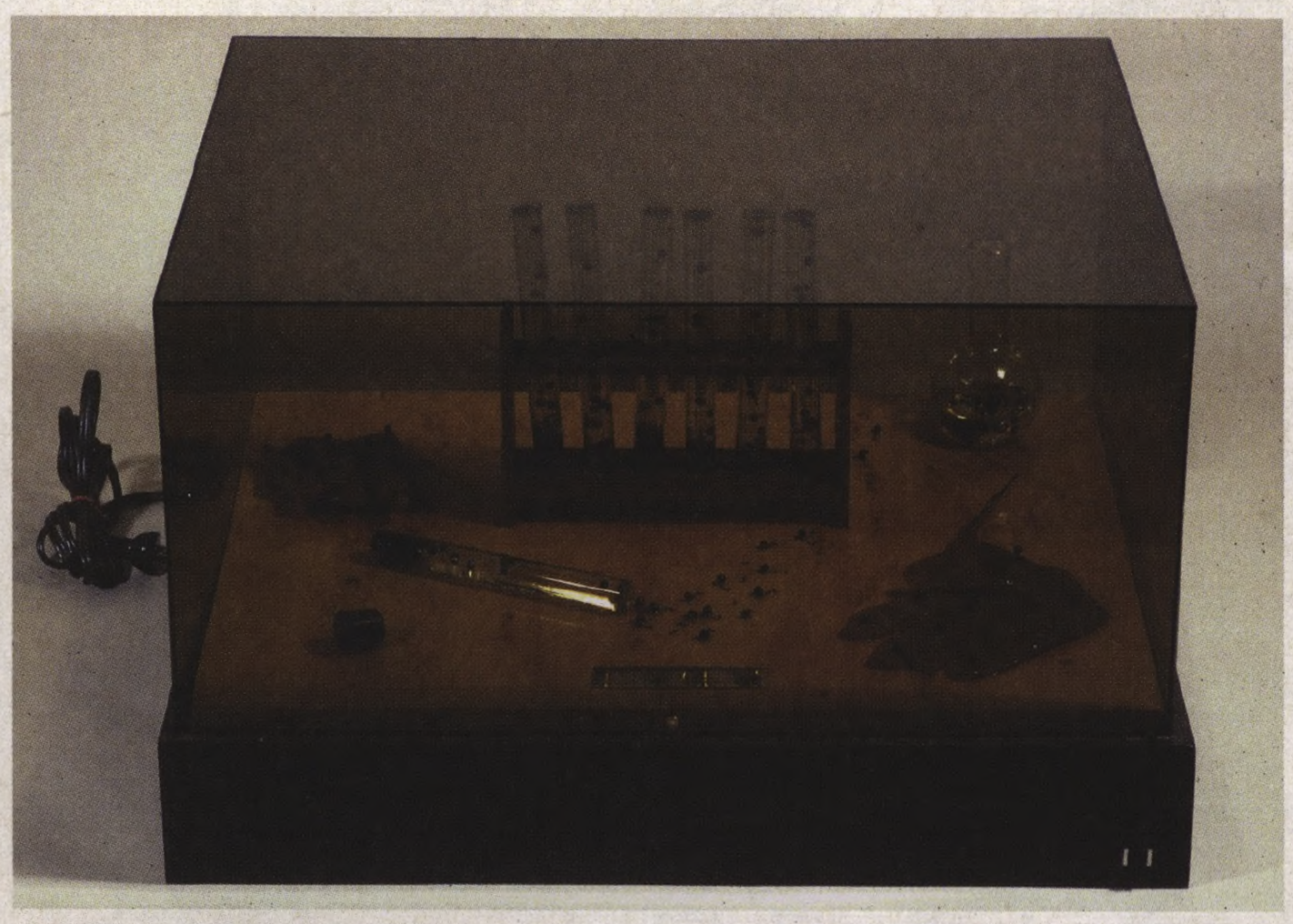
Illustrations of Women's Heads: The notation is designed to "drift" between fairly conventional notes and rhythms, and more suggestive lines and shapes, intended as a rough outline or contour of a phrase, without specifying anything further. The illustrations of the heads (scanned from a book of clip art from the early 1980s, intended for professional graphic designers and illustrators and arranged here in the composition by Jessica Nordell) are almost completely open-ended, and the performer is encouraged to use them creatively!

The articulation marking "(k+)" indicates a key-click and tongue-slap, as suggested by Robert Dick in his book *The Other Flute*.

These non-specifically notated sections should not be rehearsed so much that they become as if they were heavily notated. The performer should be comfortable with them, work with a few ideas in rehearsal, but make every effort to keep them spontaneous.

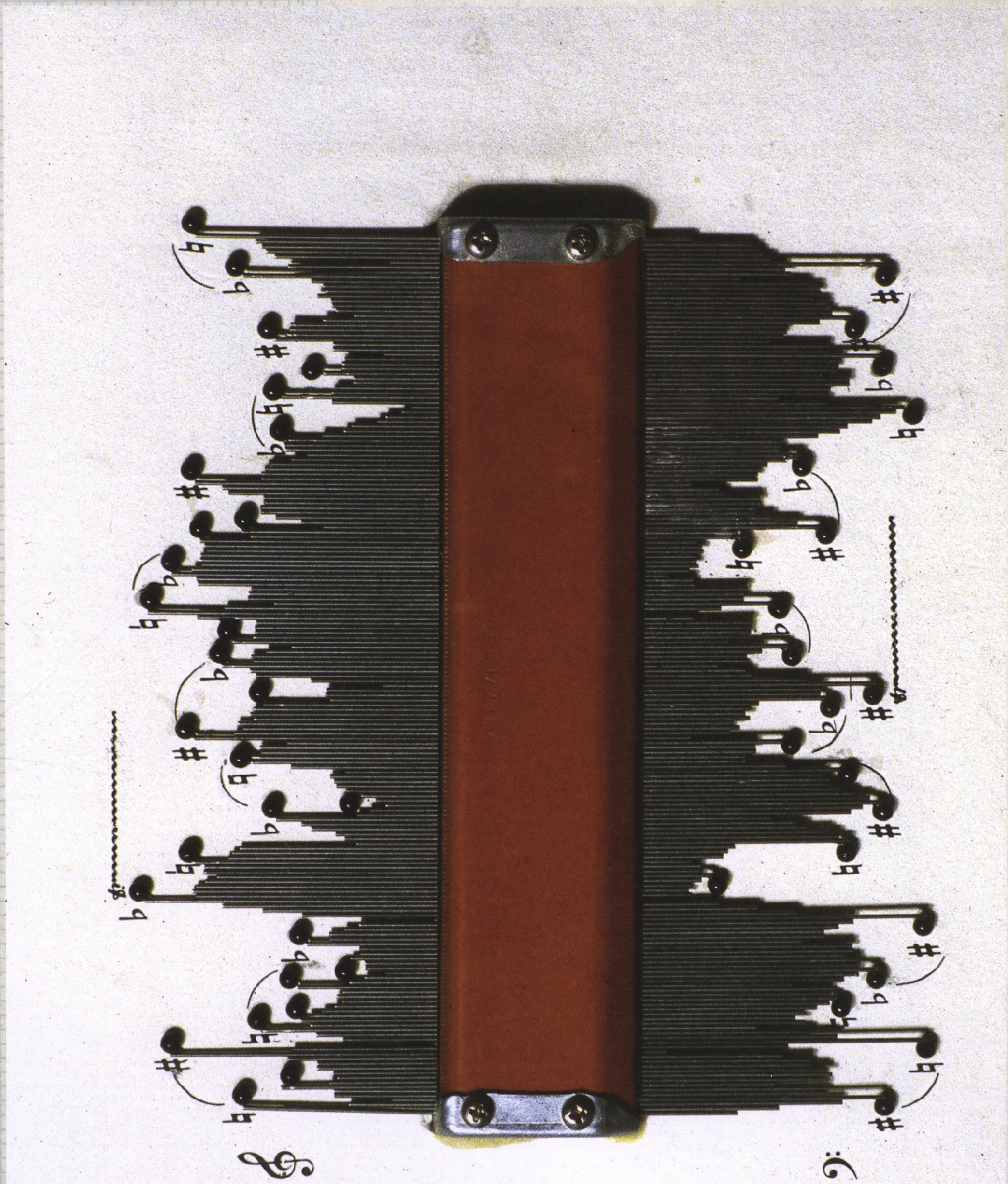


William Hellermann; *To Brush Up On.* For any instrumentation. Used by permission of William Hellermann, © 1976.



William Hellermann; *Experimental Music.* For any instrumentation. Used by permission of William Hellermann, © 1973.

William Hellermann; *Juicy Music.* For any instrumentation.
Used by permission of William Hellermann, © 1982, 1989.



William Hellermann; *The Shape of Music to Come.* For variable instrumentation. Used by permission of William Hellermann, © 1980.

WILLIAM HELLERMANN

William Hellermann; *Music Sweeps Up*. For 2 or more instruments and sweeper and dustpan. Used by permission by William Hellermann, © 1984.

pp

april 15 1976

dear phil

it seems it might be good to get back to where all these thoughts i've been talking about started my feeling is origins often say more about end-results than end-results do

what happened was i woke up one afternoon knowing that hearing is only another way of seeing i was out on my desert again the same desert where i found that if i let myself be all alone totally centered any sound i heard would be felt as a sound i made and that this opened the door to an understanding of how to listen the trick being not to listen but to "enter into" to "become" the sound

anyway this time i was out on the desert and i heard a sound and turned around and saw that a little insect had made it "fine! we're all here doing our thing" then i heard another sound a special one not typical of what you're used to hearing i turned around and nothing was there! ouch i was scared i knew i didn't make that sound it wasn't one of my sounds

in thinking about this it hit me any sound i could form an image of an image of what made it or why it was being sounded was reassuring it could even be beautiful (high heels, going down the hallway with all the usual fantasies) if i couldn t form an image it was dis-orientating the thing is a sound always has a source so to hear something is to see it (the current cop out with sounds that don t have images is to say "those aren't sounds they're music" which is the danger with doing music) the other thing is every source has a sound if you can hear it

now this is probably obvious except to a musician it felt like a real insight our training is based on the idea that music is "pure" and the seeing of images while listening is for the hopelessly naive or for children at any rate it's clear to me that i wasn't alone in having this hangup since with most of the sounds i hear i can hear no one's looking

one of the consequences of this "flash" has been my work on a series of pieces i first called "visible musics" now i prefer to call them "eye scores" (the score as a sore to be rubbed) however the "scores" didn't come directly out of an "intellectual" awareness it was just that i started looking a lot in fact it was after i had done a number of them that i received the knowledge (from others of course) that they had a life as purely visual experiences (scores in see) that they could "sound" to the eye (sounds don't have to sounde to be sound) this completed the circle and i understood that the "sound seen" and the "sight heard" were realities and not just verbal constructions (see scores and ear sights)

in working on the "eye scores" i became increasingly aware that to see them entirely "in see" was to not see them also to hear them only was to miss the point to get out of touch with the source so that they went back to the old place of "pure music" (if music's only music it isn't music it's muzak) in other words the scores were aimed at the "sound-made" music experience with the scores being "resources" for hearing either in the imagination or in performance as one but only one manifestation this is quite different from the now traditional score which is aimed at the "sound-heard" experience where the score is only a symbolic fixing of what you should be hearing

i feel there is a sharp distinction to be made here between the score as resource and what is called "graphic music" in the first place the term "graphic" is absurd in the sense that all notation has always been graphic mozart's as well as architectural plans it seems the term came into being only to point up the difference between what is/was academically acceptable (conventional notation) and what is/was going on - the thing is the final resting place of"graphic music" per se is in the fixing of new conventions (viz "the index for new musical notation" at lincoln center funded at great expense for the last five years so as to "codify" all the symbols we've used for left hand pizzicato and so on) on the other hand what we're talking about here is the score as a un-codifiable resource that works that is designed to work on the individual imagination its point is that it be open to interpretation

to express this difference i've come up with the term "score art" it seemed necessary to use the word "art" so as to imply an openess to the "reading" of the score - the image could lead to other images to dance to words to theatre as well as to sound "artyness" being out of the question since a score to be a score isn't a pretty picture to the extent that layout factors come into play (elements of design) they are in the service of some other idea than just themselves the main idea of course is that of the score as a sign or set of signs to be read by the viewer as resources for the doing of non-functional performance events (ie for themselves)

(5)

the essence of "score art" is that it is "visionary" and is the setting down of a vision one works to be true to the vision and not to alter it to make it into readily translatable indication for a piece of music or readily enactable form of dance poetry etc as i understand it all creation starts with visions however it seems the traditional practice in our culture is that the "artist" or whatever then realised a version of his or her vision as the "work" somewhere in the 50's a change seems to have taken place especially in this country to present as the "work" the vision itself what i mean is that say earle brown in composing what we now know as "December 1952" would most likely in december 1912 have taken the graphic image he received of vertical and horizontal lines as a source for himself alone and then "notated" a version of that experience in conventional musical symbols by not doing that and passing along to us his vision as a general reality for all to deal with a new state of affairs came into being (a new state of affairs that was probably not new but just so old we all forgot it) and that this new state of affairs has to be understood as another category not just an extension or modification of the existing practice of "scores" handed down through the ages ("score art is not the art of scoring")

working with visions is a tricky business (is this vision just a fantasy?) (is this vision just a vector into my own hang-ups?) everything depends (once these questions have been resolved) on having faith in the value of personal experience as being more than an isolated truth (the score as a vision shared) the nature of vision being that it is always terribly specific in its details and always terribly vague in what it could possibly mean hence the special virtue in enacting visions in setting down in images your own vision you discover details you overlooked when you saw it (if you're me you discover how easy it is to fuck up a vision by trying to improve it - worse yet to make it clearer) in giving it to someone else to perform their eyes give new insights into other meanings in listening/seeing a realization more awarenesses come (all the unplanned on incidentals can seem to fit in even logically) it is this sharing of the vision as"an active element in a process" that makes "score art" make sense to me as a separate category after all any painting or piece of music could have been received in a dream and set down as it was received and then shared as such the difference with what i call "score art" is that the sharing is to take place as re-enacting physically of the experience a re-living of it even when one simply looks at it the awareness of this fact that it is an instigation for deeds to be done means it has to be seen differently from a vision realized as a finished product ("score art is always revelatory in aim and is not unrelated to <u>yantra</u> and to <u>mandalas</u> even when it is apparently of less exalted intent")

there is an apparent paradox in working this way - out of visions to the extent one remains true to the vision as a finished truth not to be messed with one creates a finished object having its own identity and not being a means to an end as a traditional musical score is to the extent it is presented as a"score" it is <u>not</u> a finished product and the viewer/reader has to look for the performance i love this it's not a question of having it both

ways it <u>is</u> both ways (anyway who wants to have it <u>one</u> way)

(the nice thing about scores is that the work itself is not the work itself the other nice thing about scores is that they are something else without just being documents of something else (as with conceptual art-ifacts))

however it seems wrong to get too fussy about making distinctions here (it's very likely that the root awareness behind what i'm calling "score art" is that anything can be seen as a score (anything can be seen as art)) one gets a very different impression of a piece of music - the score - looking at the composer's manuscript from when looking at the printed version the experience can be a "score art" one where energies and insights are revealed that are outside the facts of what notes to be played at what time i think also of your "metal meditations" series where the score came after the vision as another enactment of it (at least it seems this way to me for the most part) where through the hand on paper the "exact" sound energies are revealed as a visual gesture i also think of the bulk of your work and of many others where the word functions as the visionary element as a form of "score poetry" (your use of calligraphy complicates the issue beautifully here.) at any rate the nature of "score art" is that it cuts across boundaries any symbol can be taken as an indication for an action in any mode of expression (sound sight movement touch smell(?)) and any mode of expression can be taken as a symbol for enactments (a score) in itself to me this is beyond intermedia (certainly beyond what is called"mixed media") the point is that the symbols are not to be taken necessarily in the way symbols are most often taken either as abstractions (here the triangle means life) or as code equivalents for precise actions (a note on the second line of the staff with a treble clef on it means depress the key on the piano called g) but as indications for experiences to be experienced with meanings to be determined as your meanings ("the essence of score art is no one but yourself is keeping score")

in reflecting on this meditating on the muddle it became clear that my urgings towards pictures as scores my "let's have a look at this (the score) was not merely a conditioned hang up of my training the idea of"visionary music" and"visions"was not just a verbal accident either it seems every word we have for this relates to the eye -"imagination""seer""in the mind's eye"- and it seems to hold for all languages through all ages (there must be exceptions?) all of which took me back to where i started (this letter that is) that hearing is felt as another form of seeing (that words without images are just words)(that sounds without images are just sounds) and that the only valid source for an unheard of sound was a new image in other words a score and that the score seen in this light was not in its essence an academic thing of using writing to get at something which was better got at by dealing with the something itself as i felt (feel) it has to a large extent become but was our god given means of making probes (soundings?) beyond what we already knew (to find what we already knew but had forgot or over-looked) and that to share a new sound formation want to share a new image behind that sound as well (the score had a public role as a necessary part of the performance)

the urge to set down these ideas came from the feeling that the age-old practice of the musical score had taken on a new life and that this new life was not being stated with clarity (of course in practice it was it just wasn't in words) what i mean is to an extent the received practice of score making had in our century more and more taken on the role of being a means of asserting ownership ("who "wrote" this - the composer or the performer?" "how can you copyright...that?") and a form of authority ("but i mean what notes do you want here?" "can you sing it?") to the point that the real point of most of our activity was being lost in a maze of discussions about which is the prefered symbol for this and that which is the clearest notation which is more exact and so on while it was clear to me and most of us (even though we often got sucked into some dumb arguments on occasion) that what we were doing was coming from another place that had little to do with the "exact fixing of sonic events in time" it wasn't a question of being "un-conventional" or of "expanding the resources of notation""to achieve new conventions for new sounds" it was just that one was working out of enlarged conception of the role of a score that moved the score out of a place where it was a set of more or less exactly fixed materials for the making of art(music dance architecture) to a place where it was an artistic statement all by itself

the "art" thing got in there then not only to enlarge the reading of the scores (playing them as movement or theatre etc.) but also because it was so clear that the eye content was not merely incidental (like say many manuscripts are) it was as much the message, as the performance which took place in a sense it was like a drawing in that a drawing is where traditionally visual thinking takes place and here it was musical thinking that was taking place in terms of line and image the "score" was an arena where the nature of things was being investigated both by the "artist(composer?)" and the viewer/player that was clearly world's apart from the desire to "fix" or "pin down" the details of a future performance

(it's to be remembered that all western music notation grew out of the catholic church's desire to fix and control the details of their religious ritual so that in every country in every church an identical performance practice would prevail without personal and/or nationalistic touches therefore conventional notation is always to some extent colored with authoritarian and bureaucratic intent even though one has to use it for the sake of clarity the last approx. 1500 years have produced certain refinements that are useful)

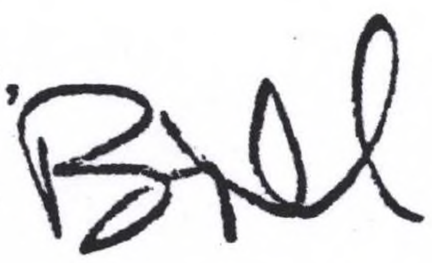
Finally, i feel strongly that the "score art" activities are one of the major artistic contributions of our century their special beauty is to be an active image into which one can read active meanings, is asked to read active meanings to the extent "score art" was non-specific it could act as a means of making discoveries always with the beautiful feature that these were images telling you to do something not only images designed to enhance your surroundings and it's very important

that the images told you to do something without telling you what to do this is what made "score art" quite different from conceptual art which told one what to do but left un-specified what it meant one of the great sadnesses is that all this was and still is limited to a "behind the scenes" dialogue between the composer and the performer with the implication being that what is heard is a "finished performance" as the "object" itself (a recording?) rather than a shared experience gone through by everybody (of course every experience gone through by everybody is a shared experience i mean here a sharing in the "making" of it) In other words one of the great beauties of "score art" is that it asserts the "sound-made" music experience over the "sound-heard" one to the extent that "score art" and a certain way of see-hearing can be brought to everyone's attention those scores and performances of them can become a form of group music making

so, with all this in mind i feel a lot better (differently) about going ahead and doing certain things like concerts and shows with all this in mind maybe i can find some better ways of going about doing them the name of the game should be "evening the score" in the very best sense of the term now that i think about it with all this in mind maybe i should go to bed (or something)

love and kisses to you both,

best,



p s "how come nobody ever sings sharp?"
"how come nobody ever sees flat?"

William (Bill) Hellermann wrote this letter to composer Philip Corner (p.58) to discuss "Score Art." Bill now says, "I was struck at how much of my discussion was concerned with the use of the word 'art.' I think today, people are much too comfortable with ascribing art to anything they admire—hairdressing, interior decoration, pastry, etc—and probably find my letter to Phil pathetically hung up on a term."

MARA HELMUTH

Mara Helmuth; *String Paths*. For up to 6 performers, each with 1-5 percussion instruments. Used by permission of Margaret (Mara) Helmuth, © 2007.

String Paths: Each performer chooses 1-5 percussion instruments and one color. The colored objects on the graph are derived from warped text strings. Following the path of the symbols of the chosen color, and listening to the others, the musicians compose and improvise their parts.

Instructions:

- Before the performance, choose a beginning point and some mappings between graphic objects of the chosen color and sounds.
- Follow a path along the objects of your color, reacting to the objects encountered.
- At all times listen to the other parts.
- Gaps in the path indicate silence.
- If during the performance, you hear sound collisions, from other performers with your part, that appear to be at different places in your path on the graph, jump to that part of the path that connects with the other musician's part.
- You must remain on the path of your colored objects, but may move at any speed, forward or backward, loop or stop as desired.

Layers:

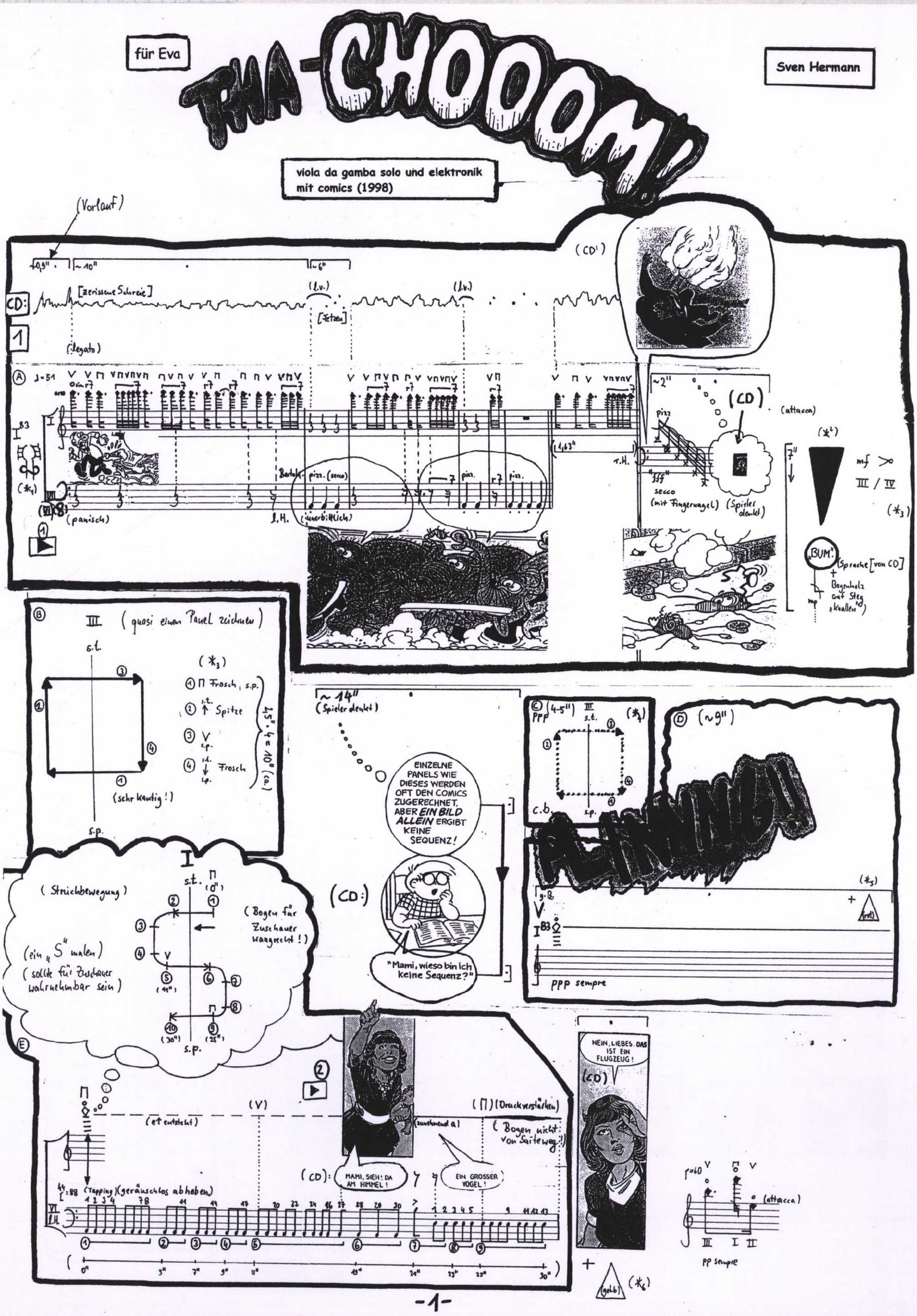
- black: *abstract*
- red: *zapfino font*
- green: *"listen!"*
- purple: *"wake up..."*
- brown: *sand font "read the writing..."*
- blue: *hoeffler ornamental font*

für Eva

THA-CHOOOM!

Sven Hermann

viola da gamba solo und elektronik
mit comics (1998)



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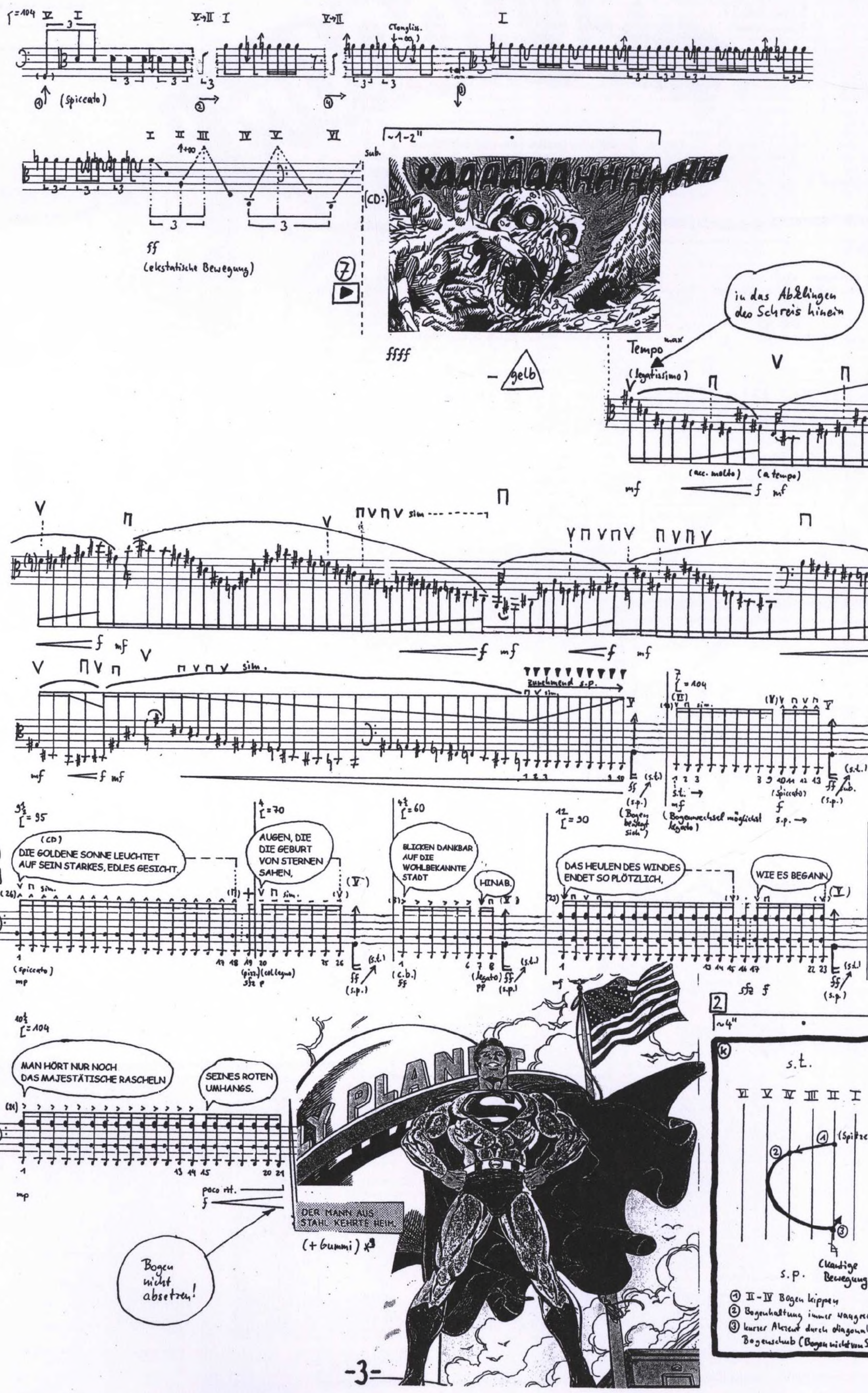
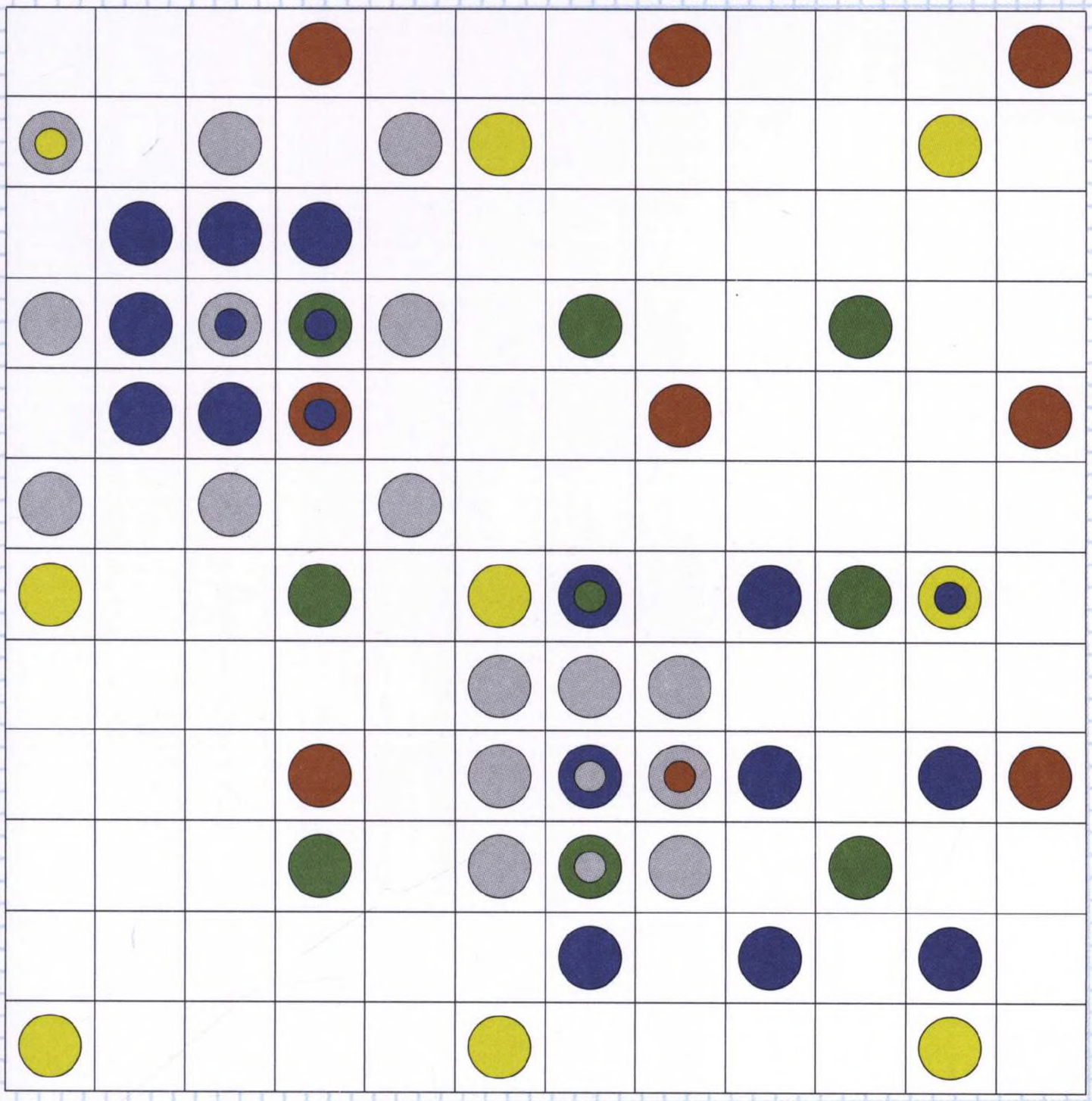
Sven Hermann; *Tha-chooom!* For viola da gamba solo with CD and slide projections. Used by permission of Sven Hermann & Interzone perceptible, © 1998.



Sven Hermann; *Tha-chooom!* For viola da gamba solo with CD and slide projections. Used by permission of Sven Hermann & Interzone perceptible, © 1998.



Christoph Herndler; *The Quadrature of the Keys/The Quadrature of the Strings*. For piano(s) and/or strings.

Used by permission of Christoph Herndler, © EIS 1996.

o	o	ol
o	ol	l
l	ol	l

o	ol	l
lo	ol	ol
lo	ol	l

of	ofð	f
ði	ð	ði
ðis	i	ði

fð	ð	ð
ðis	ð	ði
ði	ðis	ði

lo	lof	lo
lof	o	lo
of	of	ofð

lo	lof	lo
lof	o	of
of	ofð	f

ðis	i	ði
i	i	is
i	is	s

ðis	i	is
i	is	s
sai	sai	sai

ai	sai	ai
ail	l	ls
s	su	ls

ail	sai	ai
ls	s	ls
s	su	sun

un	n	n
nf	f	n
foag	foag	oa

n	nf	n
nf	f	foa
foag	oa	oag

s	s	su
s	su	sun
u	sun	u

s	su	sun
u	sun	sun
un	sun	u

foag	oa	oag
oag	oa	oag
g	ge	g

g	oa	oa
g	oa	oag
g	ge	g

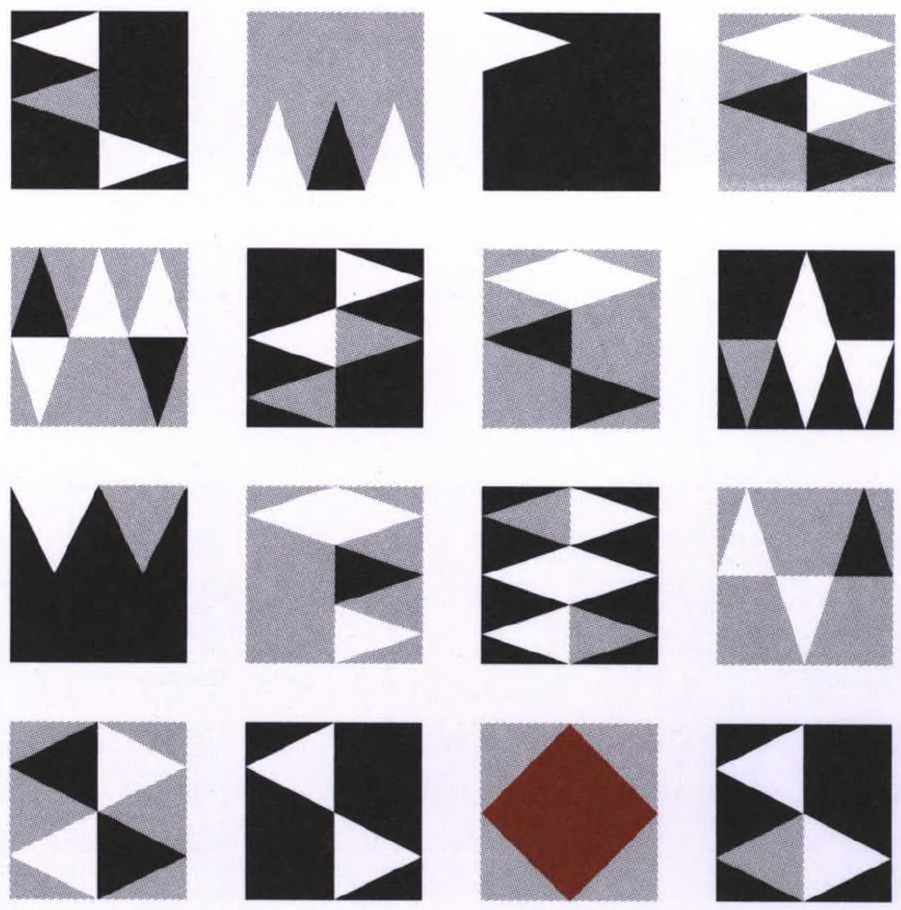
ge	get	get
g	ge	e

get	e	et
e	e	et

e	e
t	

Christoph Herndler; *All of This I'll Soon Forget*. For voice(s).

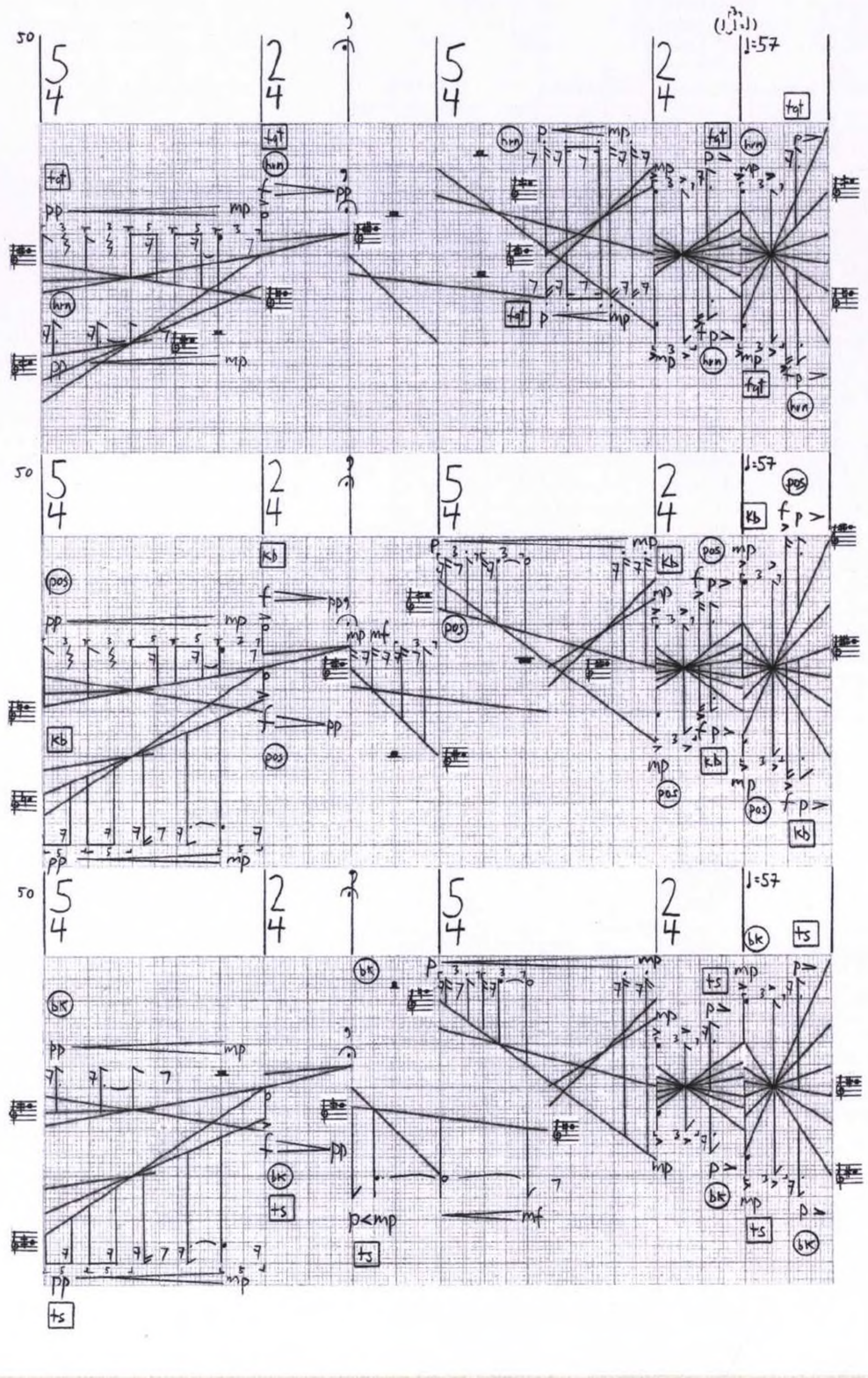
Used by permission of Christoph Herndler, © EIS 1998.



Christoph Herndler; *39 Steps*. For any instruments.

Used by permission of Christoph Herndler, © EIS 1994.

ALAN HILARIO



Alan Hilario; *Überentwicklung-Unterentwicklung*. For bass clarinet, bassoon, tenor saxophone, French horn, trombone, and double bass. Used by permission of Alan Hilario, © 1998.

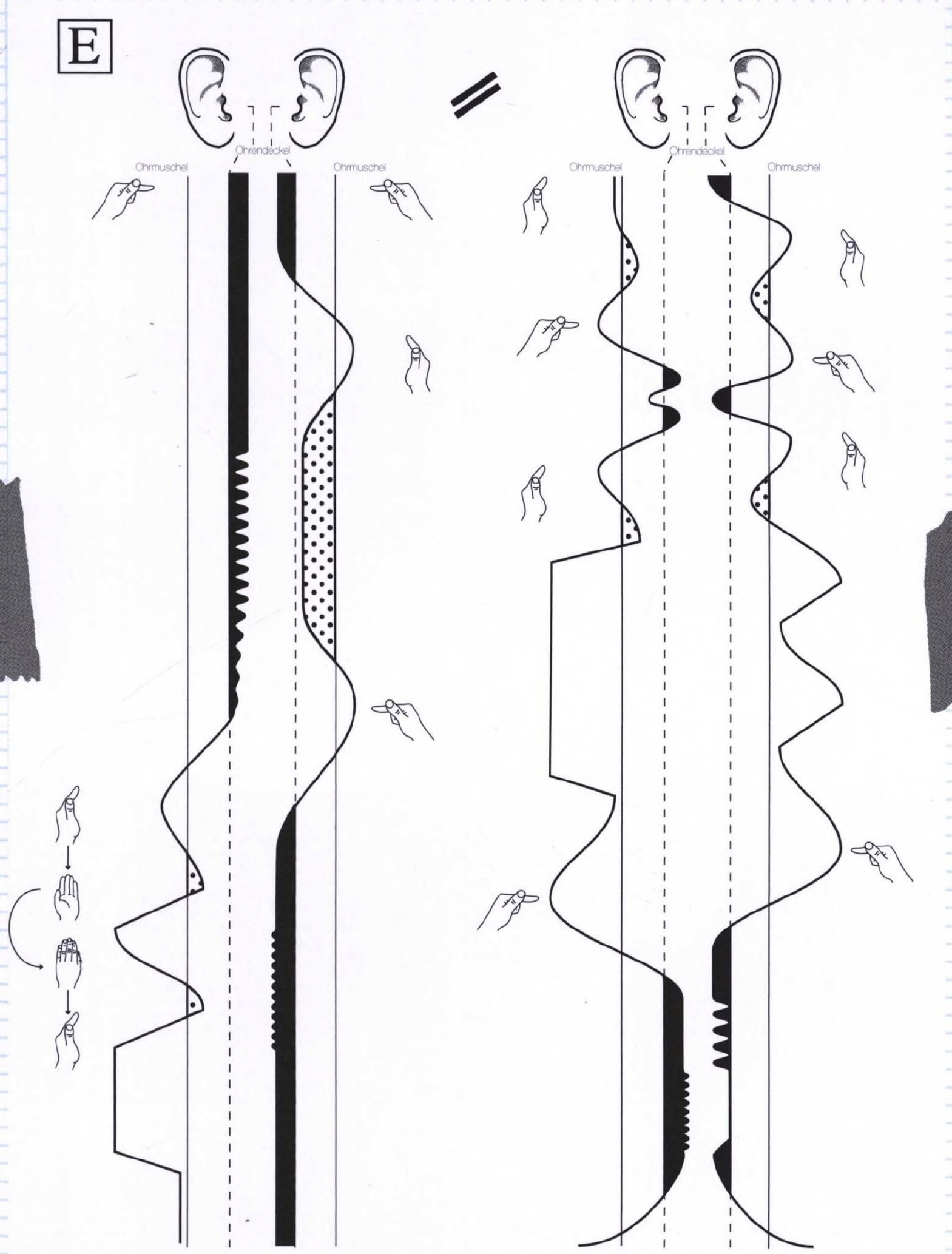
Überentwicklung—Unterentwicklung: The microintervallic conception in *Überentwicklung—Unterentwicklung* could be described as the negation of certain premises: instead of subdividing the whole tone into smaller intervals—quarters, eighths, sixteenths—or using the octave as a measuring unit and subdividing it into any possible number, I have notated the pitch parameter graphically so that every conceivable microtone is possible.

On grid paper, where 5 millimeters in the vertical represent the ambitus of a quartertone, a maximum of 6 straight lines were drawn, inclining or declining and crossing at definite points. The millimeter paper functions only as orientation and not as a strait-jacket for the diverse geometric figures. This is analogous to a city map whose information doesn't predispose or limit one's movements.

The representation of pitch structure is orientated in the vertical coordinate; the horizontal coordinate then represents the rhythmic parameter. Traditionally notated rhythms in this coordination system then show which part of the graphic should be played. If, for example, the same graphic is combined with different rhythms then the result will be a different succession of microtones and glissandi.

The score contains the graphical representation of pitch in time copied 3 times, each copy assigned to a pair of instruments, each instrument with its own particular rhythmic articulation of the graphic (abbreviations: fgt = bassoon, hrn = French horn, kb = double bass, pos = trombone, bk = bass clarinet, ts = tenor saxophone).

In this piece, the precisely structured score—determined in many ways simply by the visual appeal of the graphic itself—collides with the rather diffuse and organic result of any performance by musicians.



Robin Hoffmann; *oehr für Hören solo*. For listening solo. Used by permission of Frankfurt Main, 6 VIII, © 2007.

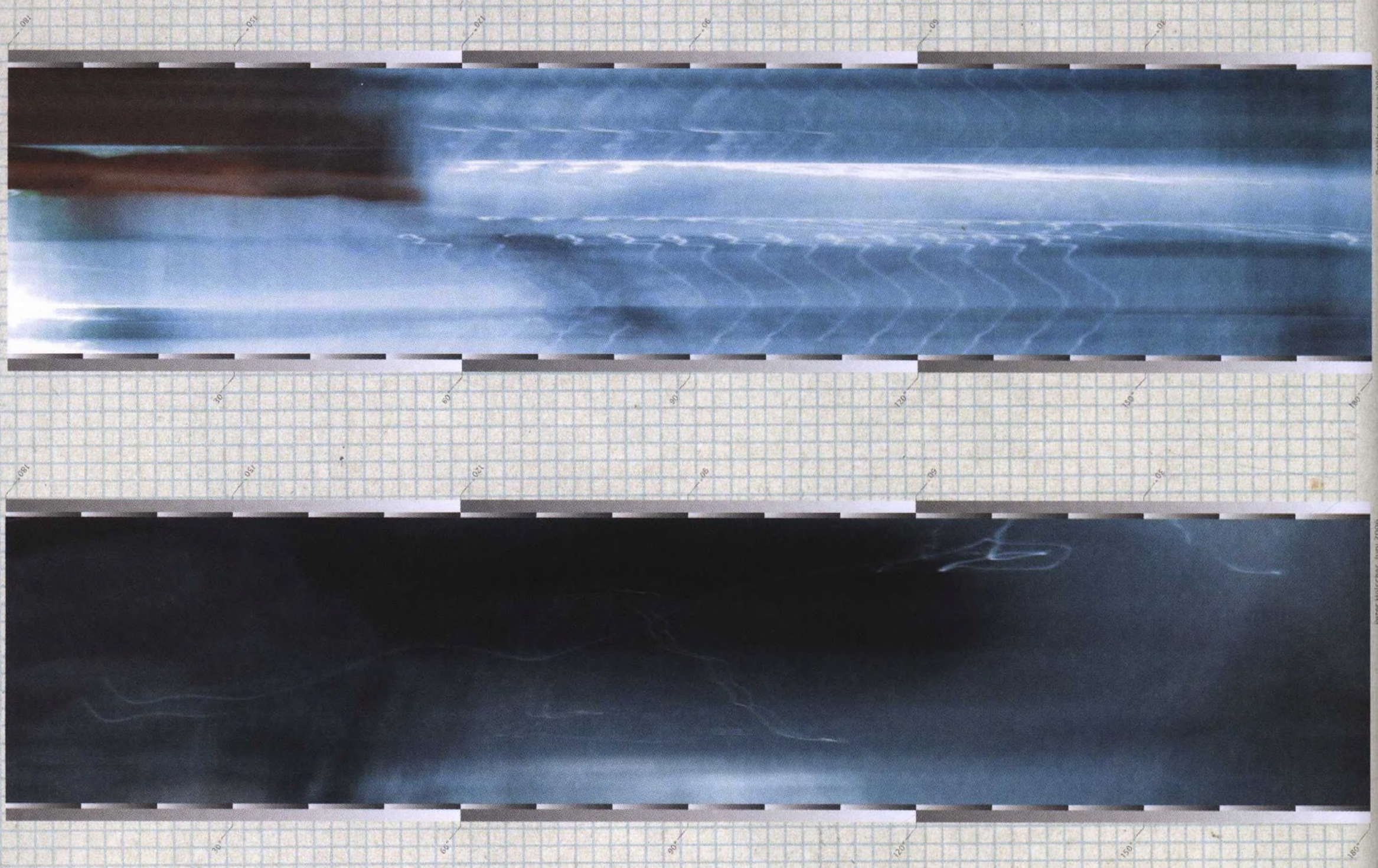
œhr für Hören solo is a piece of music which remains, for the audience, silent. It does not impart itself through external acoustic events, but rather orients its attention toward the individual listening situation of the performer or musician. An audience that merely passively listens is excluded. A listening situation is composed instead of singular sounds. The piece probes the threshold through which sound must pass in order to reach the body.

The temporal evolution is displayed in the score vertically—from top to bottom. The movements of both hands at and on the auricle (outer ear) are notated chronologically.

The hands drawn into the score specify further details with regards to the position of the hands. They are to be interpreted from the perspective of the performer, and should have the following results:

- Hand to the side—with a cupped hand in front of the auricle of the ear
- Back of the hand—cupped hand behind the ears
- Palm of the hand—cupped hand in front of the ears
- Index finger—seals the ear with variable pressure upon the ear

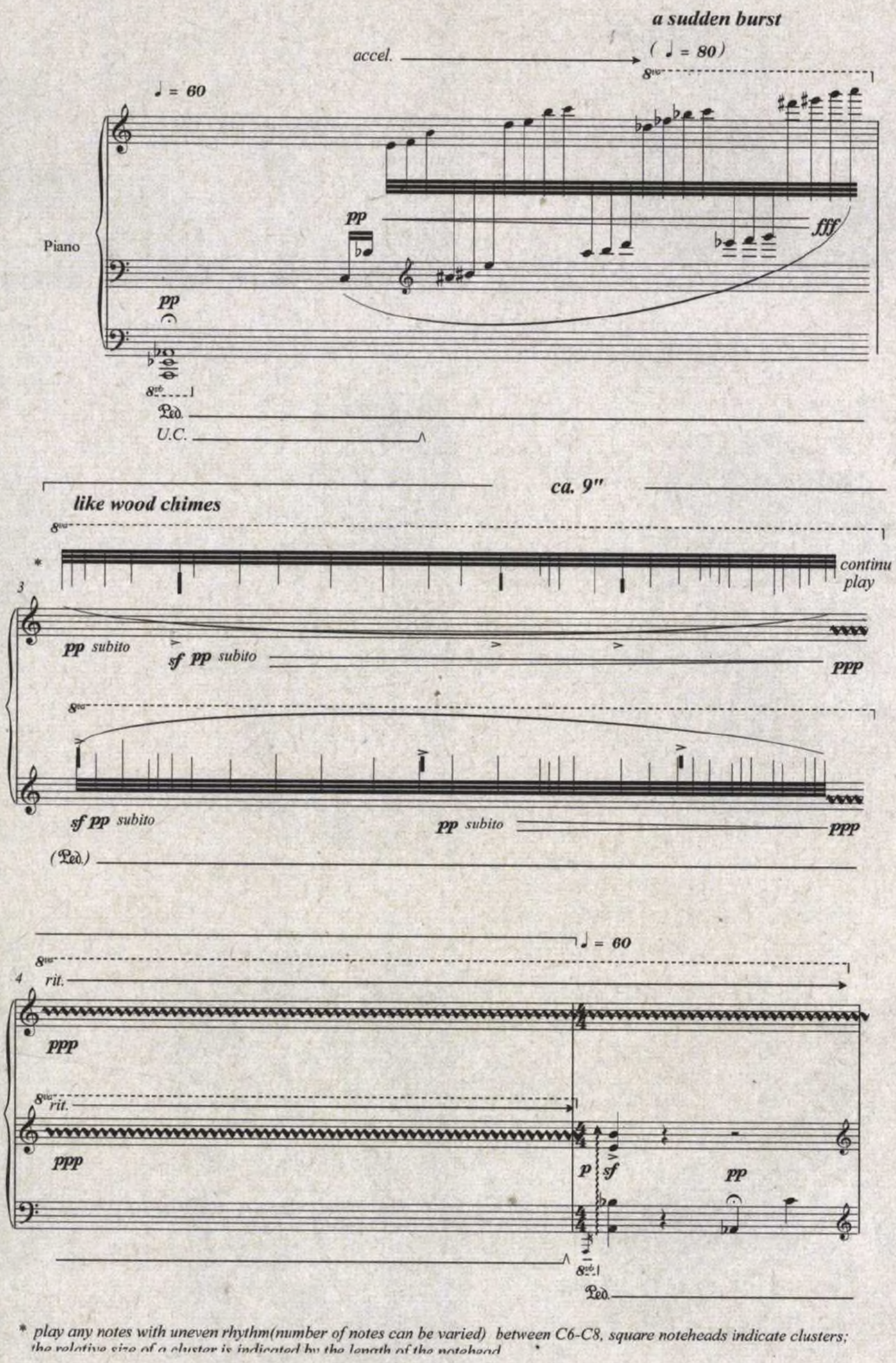
PETER HÖLSCHER

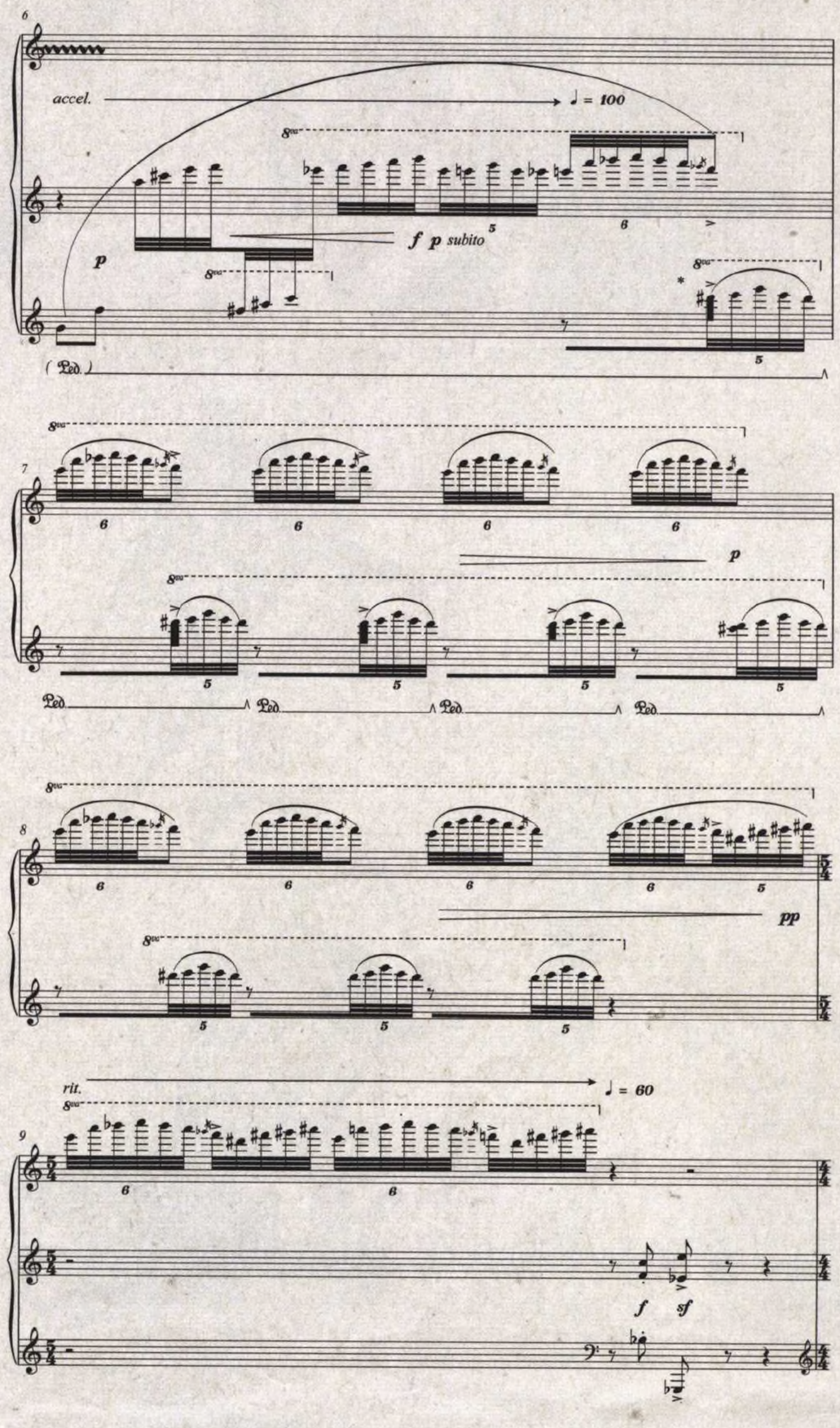


Peter Hölscher; *Das Licht im Dunkel der Wolke.* Used by permission of Peter Hölscher, © 2006.

Blazing Dawn

Tsai-yun Huang April 2006

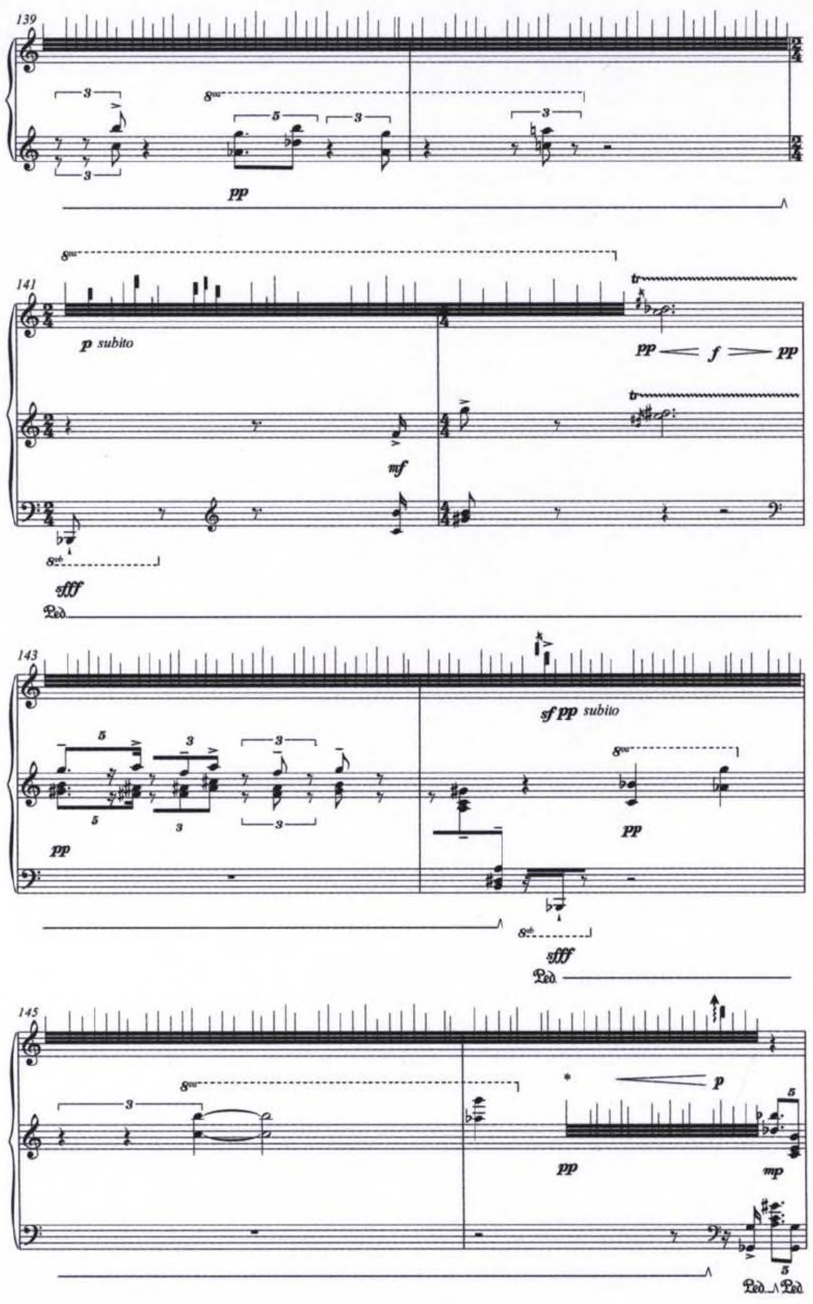


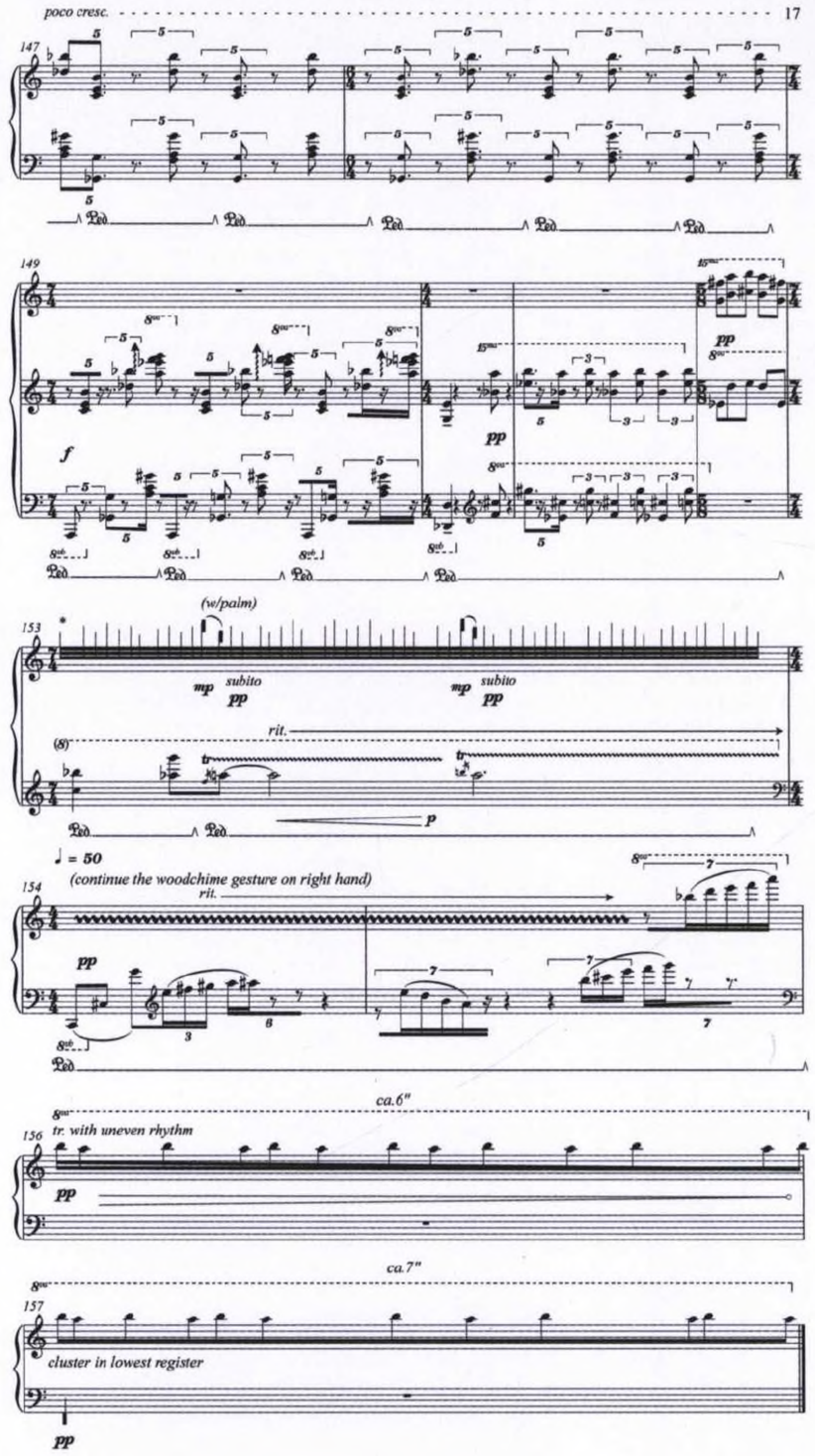


Tsai-yun Huang; *Blazing Dawn*. For piano solo. Used by permission of Tsai-yun Huang, © 2006.

Blazing Dawn: I composed the piece from an orchestral point of view. The features of different instruments are not only for the resources of sounds, but also for the integration of different gestures. In addition, the decay and resonance are important issues in this piece; the application of pedals and the different articulations give the music a variety of colors.

TSAI-YUN HUANG





Christoph Illing

Felt and folded – *ineinandergeschachtelt* (a book-object-score)
By Holger Schulze

Again and again I open the pages of this delicate book. As I open it the softness of the fringy margins strikes me. The pages are ripped in a thoughtful, delicate way, thus as I flick through..., no: as I unfold this book I sense velvet in these fluffy margins. Thin hand-made paper and a dense typography, called Microgram.

Here are editions of this partitura, all hand-crafted by its Berlin-based and techno-experienced composer Christoph Illing, that bear a tender drawing on all the pages. The same drawing of an androgynous, young human being, naked and cuddled up before me—his or her shy observer. But not all editions show this drawing. Flickering through the pages those cracks bear—eventually, eventually not—ever and ever new insights and throughsights on this drawing: Never do I see the whole picture of him or her, so keenly desired according to pornographically inclined aesthetics of dominating broadcasting corporate media. Eventually do I see nothing more than the bare, fine, hand-made paper. Void.

This book is called *ineinandergeschachtelt* (meaning approximately: nested, boxes in boxes) and it shows on each page another word. *Rau*, *leise*, *voll*, *flehend*, *vulgär*, *schrill*, *zornig*, *jovial*, *wohlklingend*, *gebieterisch*, *markerschütternd*, *verführerisch*, *explosiv*—hoarse, low, full, pleading, vulgar, sharp, angry, jovial, melodious, commanding, heartrending, seductive, explosive. Consecutively numbered from 1 to 62, these words are taken from a paragraph of Michel Serres's famous (yet still rarely acknowledged) plea for a renewed anthropology of the senses, *Les Cinq Sens* (1985). These words cue my imagination, my vocal sensorium, my imagination about how my voice could sound: *egalitär oder komplizenhaft, arrogant, ermutigend, destruktiv, oder liebkosend, ironisch, aggressiv, zynisch*—egalitarian, or matey, impertinent, encouraging, destructive or tender, ironic, aggressive, cynical. How would I feel my voice? How could I sense myself speaking?

The partitura starts with the general vocal instruction "(Sprich nach jedem nummerierten Papier: ineinandergschachtelt)" "(After every numbered paper speak: ineinandergeschachtelt." Performers of this piece are expected to speak or sing or articulate or simply perform the German title of the piece, "ineinandergeschachtelt" 62 times (respectively 124 times when performing both complementary partituras of book I and II: the second consisting of the torn out halves of all pages).

After the first 57 instructions, taken directly from Serres, the pages change, the book and partitura transform. The pages are no longer torn. The fringy, velvet, folding and unfolding look and feeling disappears abruptly. The pages are now integral again. And if they showed one before, they bear no drawing anymore now. Simply words. Firstly: "Felt Sense." And then: "(Richte Deine Aufmerksamkeit auf Deine Körpermitte und darauf wie sich Dein Inneres anfühlt...)"—"(Point your concentration to the center of your body and sense how your inside feels right now...)"

The performer is left with him- or herself. And the last five vocal instructions present phrases that leave space for the interpretation of the performer: to state how she or he feels and senses the words, the drawing, the paper, his/her own situation right now—or even something else. "58. Alle diese ausgesprochenen Worte sind ..... 59. Die Zeichnung ist ..... 60. All dies Papier ist ..... 61. Meine Situation ist ..... 62. ....." —"58. All of these spoken words are ..... 59. The drawing is ..... 60. All this paper is ..... 61. My situation is ..... 62. ....."

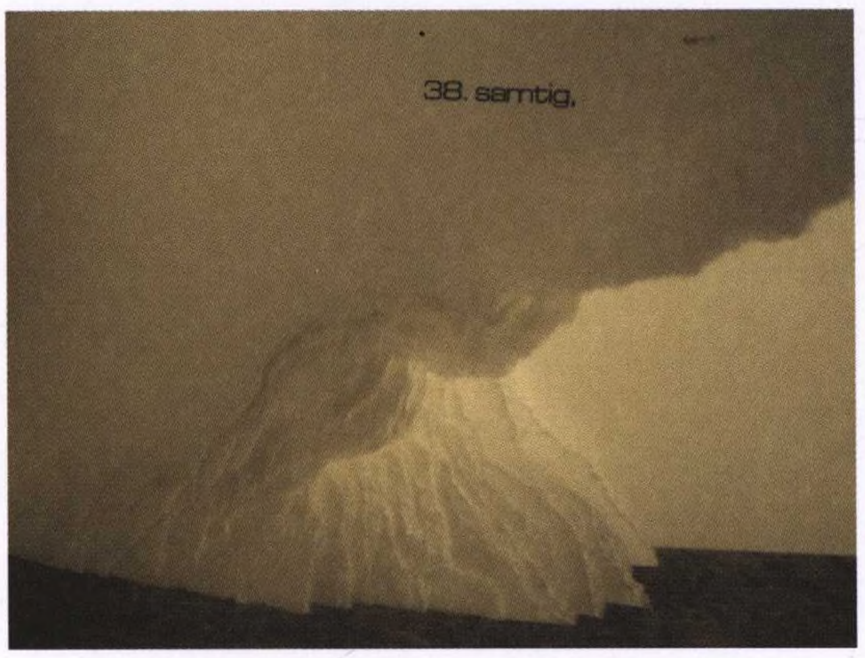
The performer is drawn back to her or his felt sense of the actual situation and its effects on him or her. The term "Felt Sense," Illing refers to, is central to the philosophy and phenomenology of language, developed by American thinker Eugene T. Gendlin. Gendlin, who is also the father of the Focusing-therapy, worked on this theory since the 1960s. At the core of his writings and practices lies the realization—in a field between Wittgenstein and Husserl—that there is a bodily sense of meaning, a proprioreceptive cognition that bears the ground for any individual making

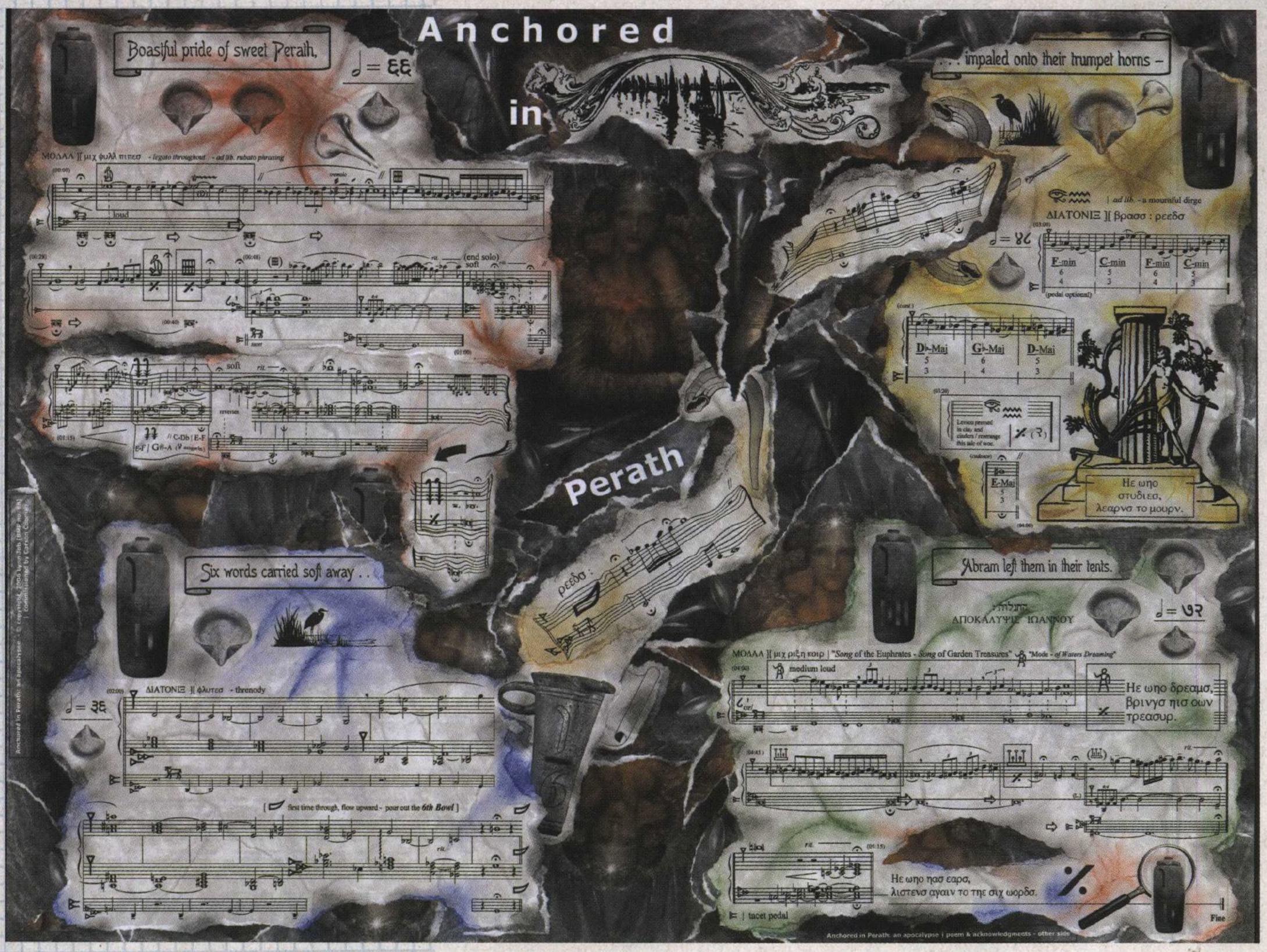
use of words and speech acts. According to Gendlin, language does not end when we are grasping for words as dominant theories of language typically say. Speaking begins right there and then, when we do not rely on patterns any longer, on clichés and routines; when we give ourselves the space and time of letting newly, bodily grounded constellations emerge, a felt sense out of feelings, sensations, sounds, smells, images, metaphors, phrases, words that come up. Meaning emerges out of proprioreceptive cognition. Meaning thus is bodily anchored.

In the work of Gendlin this openness to new generations of meaning is often represented by „.....". And so it is in Illing's work here. The performance of *ineinandergeschachtelt* can thus not be reduced to a manifestation of vocal instructions. Performing *ineinandergeschachtelt* means to take the book, the drawing eventually, the cracks, the paper, the words, the instructions as groundwork out of which a felt sense of ourselves might emerge. My body, as a performer, becomes the stage. *ineinandergeschachtelt* happens in my felt sense.

As the singer Ulrike Sowodniok, performer of the world premiere, says:

"The structure of the material itself—the torn paper—moves into the foreground and shows a multitude of perspectives. The body reflects and reacts to the quality of the given words. The voice is not used for deliberate interpretation of affection—in this case it shows through its own structure through the behaviour of the larynx itself the quality and the meaning of the given words. Interpretation becomes reflection."





Lynn Job; *Anchored in Perath: an apocalypse*. For solo organ. Used by permission of Lynn Job & Buckthorn Press, © 2006.

Anchored in Perath: an apocalypse is a 6-minute piece for solo organ inspired by a 4-stanza apocalyptic poem: *Sacred Stream IV: Meditations by the River Euphrates* (1999). This poem is the last in a 4-poem set about the past, present and future of the 4 rivers of Eden—written by me while residing a short walk from the Cliffs of Moher, County Clare, Ireland (the Atlantic coast north of Liscannor Bay). Per-ath' is the Hebrew name for Euphrates, and the individuals who are "anchored" are the 4 angels bound there, loosed for great destruction only at the 6th Trumpet (Rev. 9: 13-21, violent war). Relating to this vision are also the visions of the 6th Bowl (Rev. 16: 12-16, where the Euphrates dries up), and, the 6th Seal (Rev. 6:12-17, a great earthquake). The numbers 6 and 4 become embedded in many levels throughout this layered work of blended poetry, music, and visual collage—hand-pastelled, glued, and torn.

Stepping back from this complex canvas, the musical elements are oppositely calm and reflective, abstractly evocative, bold, at once clear and impressionistic—leaving space for the consideration of a past and prophetic drama so enormous, musical gestures fail to compete for foreground.

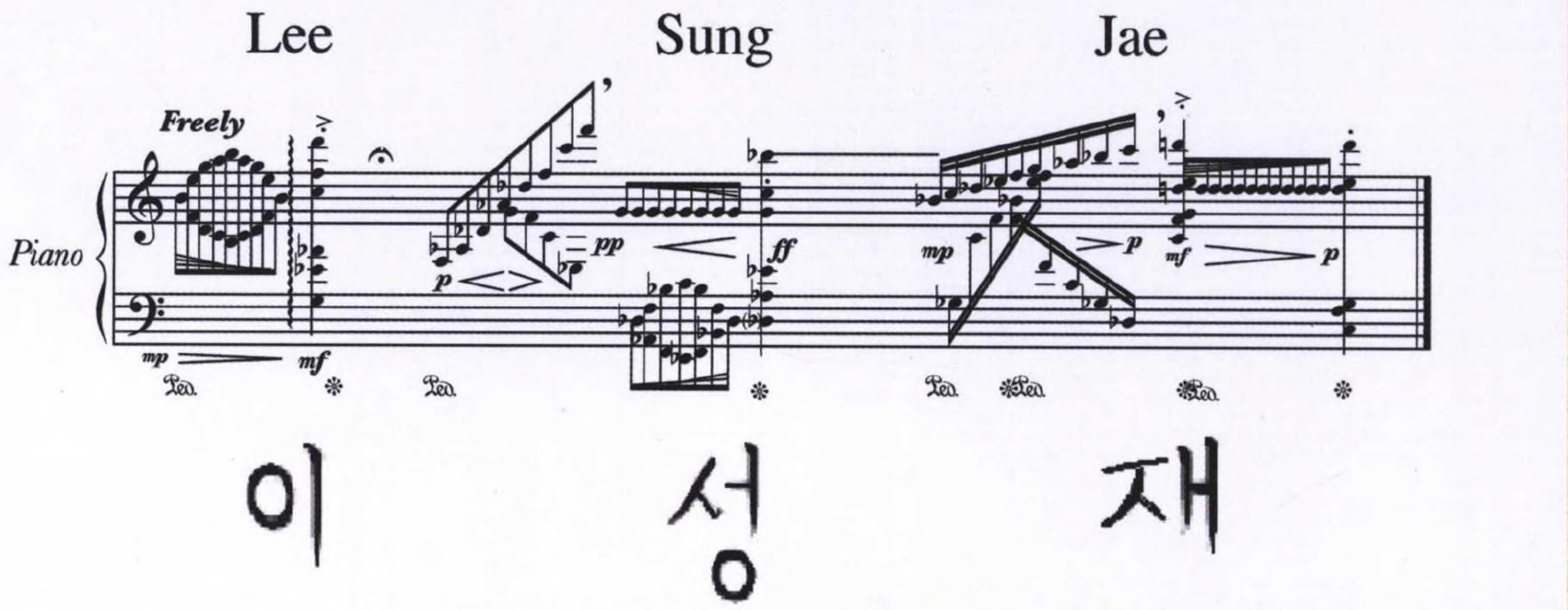
This unique poster art piece developed from commissioning organist Carson Cooman's request (2005) for a graphic notation score (a rare, 20th-century illustrated print genre from which a musician must extrapolate sonic material). He wished for a subtext with something of an archaeological patina.

I chose to make this a very personal work drawing on my Judean desert expedition experiences in Qumran, Israel (1989), years of spiritual studies, and my penchant for symbolist design.

The performer plays from a single, large folded color poster and is supplied with helps and keys to decipher various directions for: cuneiform clefs, Sanskrit tempi, mixed alphabets, 1200 BC oil lamps, Qumran scroll jars, and more. A few sections of improvisation/indeterminacy exist. Real cuneiform music was researched, real artifacts photographed—even down to a silver cartouche "Lynn" made at the Egyptian Pyramids, followed by "Job" faux-embossed onto a clay seal (brought out from the destruction layer of Jerusalem, the time of Baruch the Scribe) shown on the back cover credits. In the center of the poster's top half is a reproduction of a mystic angel by George Frederick Watts "The Dweller in the Innermost" (1886)—completely unknown to me until the last stage of this project and perfectly suited to the vision.

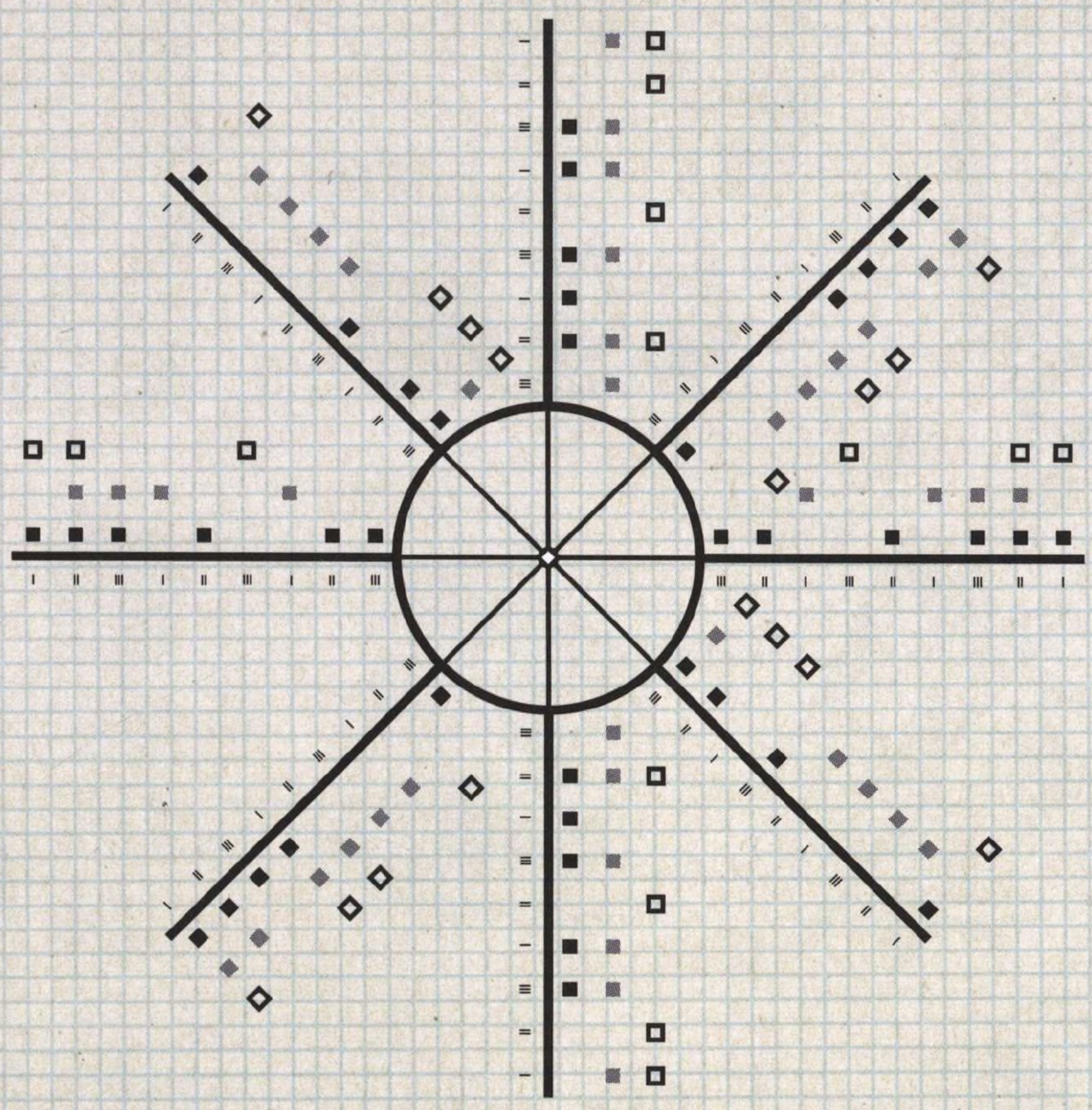
DAVID EVAN JONES

For Professor Sung Jae Lee on the occasion of his eightieth birthday:



David Evan Jones; *In Honor of Sung Jae Lee*. For solo piano. Used by permission of David Evan Jones, © 2004.

JOHN KANNENBERG



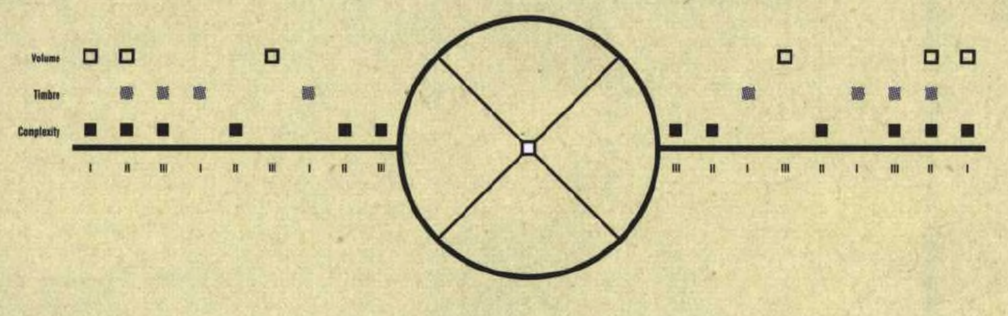
Landscape 1 : Vanishing Point is a graphic score for musical performance composed in January, 2004.

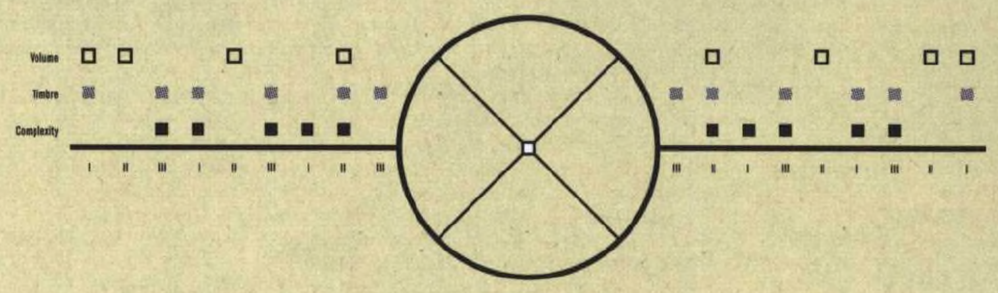
The score is based on a drawing and field recording I made of the shore of Lake Michigan in October of 2003. It consists of four individual "staves," or parts, that rotate around a central, common vanishing point. The score can be performed by four or more musicians. While the score is meant to help guide the musicians through a decision-making process, the music performed is meant to be improvisational in nature.

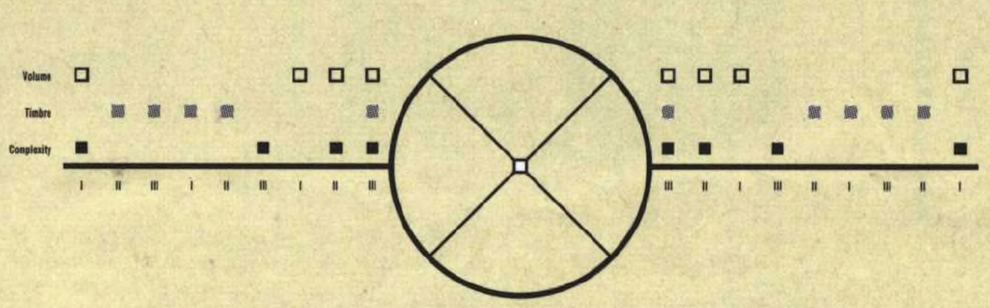
Using two pencil markings from the drawing and two waveforms from the field recording as foundations, I overlaid a grid onto these images and determined the positions of the different colored squares you see in the score where the original images intersected the grid. The colors of the squares represent types of musical decisions: white = volume, grey = timbre, black = complexity. Each vertical column of squares indicates 1 minute of time; the hash marks (I-III) beneath each column correspond to an audible cue, which the performers use to gauge their position in the score—for example, during the piece's premiere performance in March of 2004 at Deadtech Art + Technology Center in Chicago, I kept time by lightly tapping a cymbal one, two, or three times to indicate to the group of performers the start of each new minute.

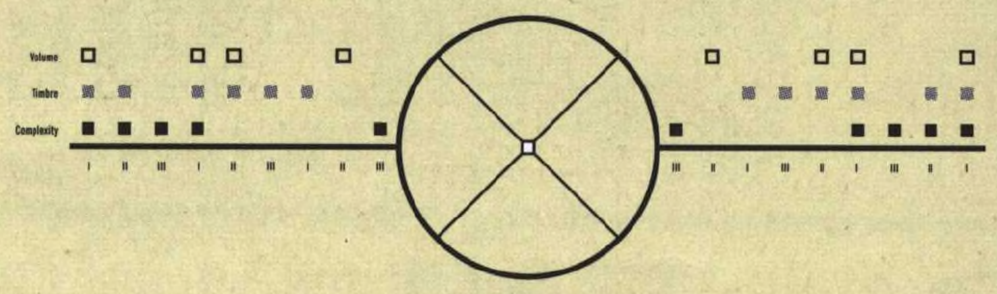
The four parts intersect at a central circle with a white square in the middle; this indicates that the players are to slowly fade their sound to a second of silence in the very middle of the piece, then fade their sound back up after the momentary pause. The process then repeats in reverse, with the piece ending after a 19-minute duration.

JOHN KANNENBERG









About the Score

Landscape I : Vanishing Point is a graphic score for a musical performance with a duration of nineteen minutes. The score consists of four individual parts that can be performed by four or more musicians. While the score is meant to help guide the musicians through a decision-making process, the music performed is meant to be improvisational in nature.

The score began to take form when I made a field recording on the shore of Lake Michigan in October of 2003. While recording the sound of the landscape, I also made a sketch of the landscape which is reproduced in **Figure 1**. The field recording also captured the sound of my drawing, and both the sketch and the field recording have been used to construct the final score.

Two sets of lines from the sketch and two visualizations of waveforms from the field recording were used as the template for the score parts included here. After constructing a grid for the score, I used the sketch lines and waveforms as guides, placing them within the score's grid and placing a square in each area the lines/waveforms intersected the grid.

Each row of squares in the composition grid represents a type of musical decision to be made during the performance: the top row (white squares) represents **Volume**, the middle row (grey squares) represents **Timbre**, and the bottom row (black squares) represents **Complexity**. Each column represents one minute of the complete composition, while the large central circle is a detail of the central minute of the piece. This minute represents the central vanishing point of the composition: white spaces created by descending black lines indicate the gradual shifts both down and up in volume, while the central white square indicates a single silent second.

The roman numerals beneath each column are meant to aid the performers in keeping track of the composition's time. One of the performers is designated as the official Timekeeper; at the piece's premiere, I will serve as Timekeeper and will indicate the minutes to the other performers by tapping a cymbal's bell the corresponding number of times (e.g., one cymbal bell tap for minutes marked as I, two taps for II, etc.).

The performance consists of two halves, each working towards and away from the central vanishing point. Each part's score is an arch form, with the second half a mirror image of the first.

Notes for the Performers

1. Any instrumentation is acceptable. At least one performer must use the accompanying field recording of the landscape as source material for their performance. At least four performers should participate. Any performer may use any part of the score; however, all four parts must be used and there should only be one part per performer. If more than four performers are present, duplicates of the four parts of the score may be used.

2. Structural and melodic aspects of the performance are at the disposal of the performers; however, the overall volume should be quiet in relationship to the performance space.

3. One performer should be designated as Timekeeper and use their instrument to indicate the passage of time to the other performers. A hand signal or other silent gesture (to be decided by the performers) should be used to coordinate the tenth minute and its central vanishing point second.

4. The squares on the composition grid indicate three types of musical decisions: Volume, Timbre and Complexity. During each minute, each performer should concentrate their musical decisions based on the indicated type of decision. Decisions of Volume may include raising or lowering the volume. Decisions of Timbre may include changing the quality of the sound being produced (adding reverb, distortion or otherwise changing the tonal quality of the sound). Decisions of Complexity may include adding notes or chords, changing or adding rhythms, or adding or subtracting sounds.

5. In minutes where there are more than one type of decision indicated, performers should attempt to divide their attention between the decision types equally.

6. In minutes where the only musical decision indicated is Volume, performers may choose to either change their volume or simply not play at all.

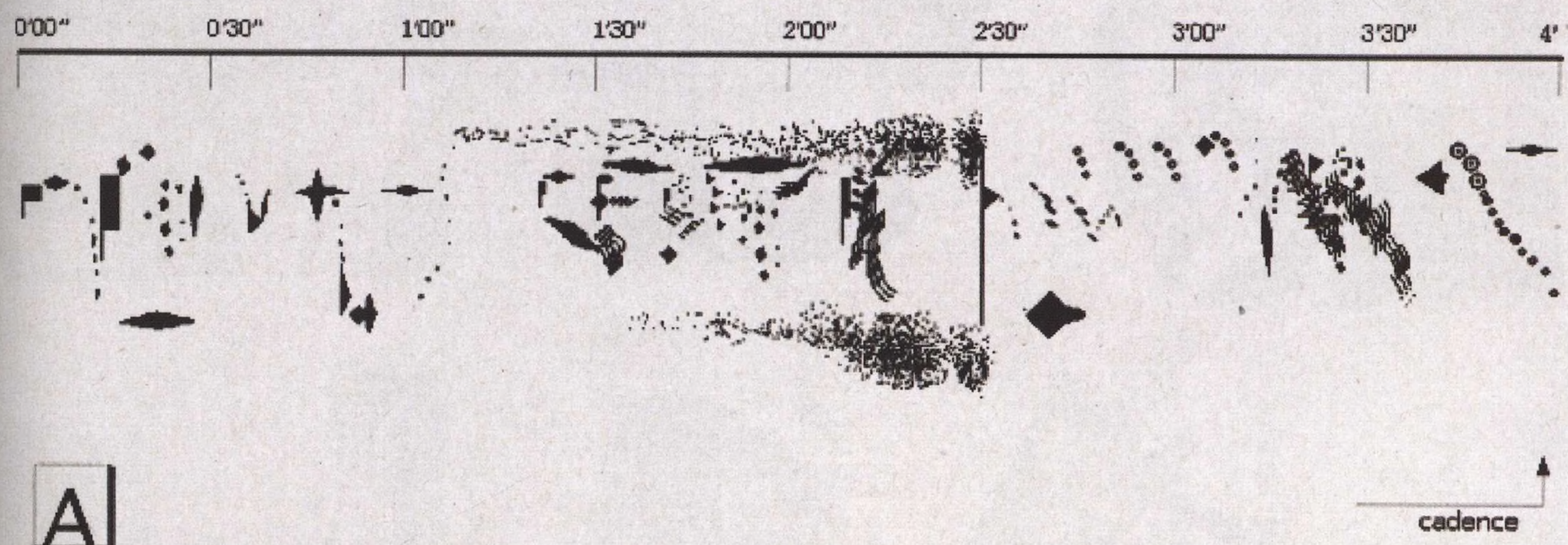
7. Beginning with the eleventh minute, each portion of the score presents a mirror image of minutes one through nine. Performers are not required to attempt to play their initial performance backwards; rather, the decision process should be reversed as the piece is finished.

8. At the end of the nineteenth minute, the Timekeeper should indicate to the performers that they should stop.

Figure 1. Original source sketch, Lake Michigan shore, October 2003.

Score, images and text ©2004 john kannenberg.

John Kannenberg; *Landscape 1: Vanishing Point*. For four or more musicians of any instrumentation, but one must use the accompanying field recording of the landscape as source material for their performance. Used by permission of John Kannenberg, © 2004.

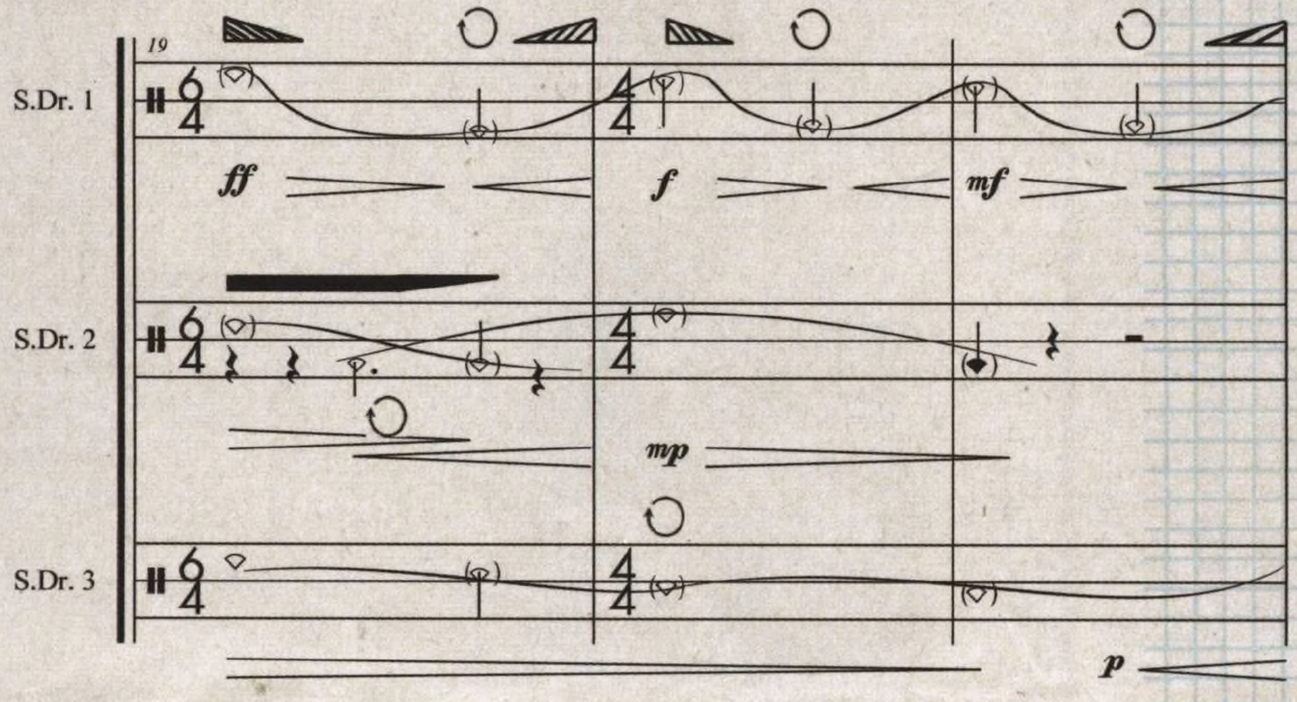


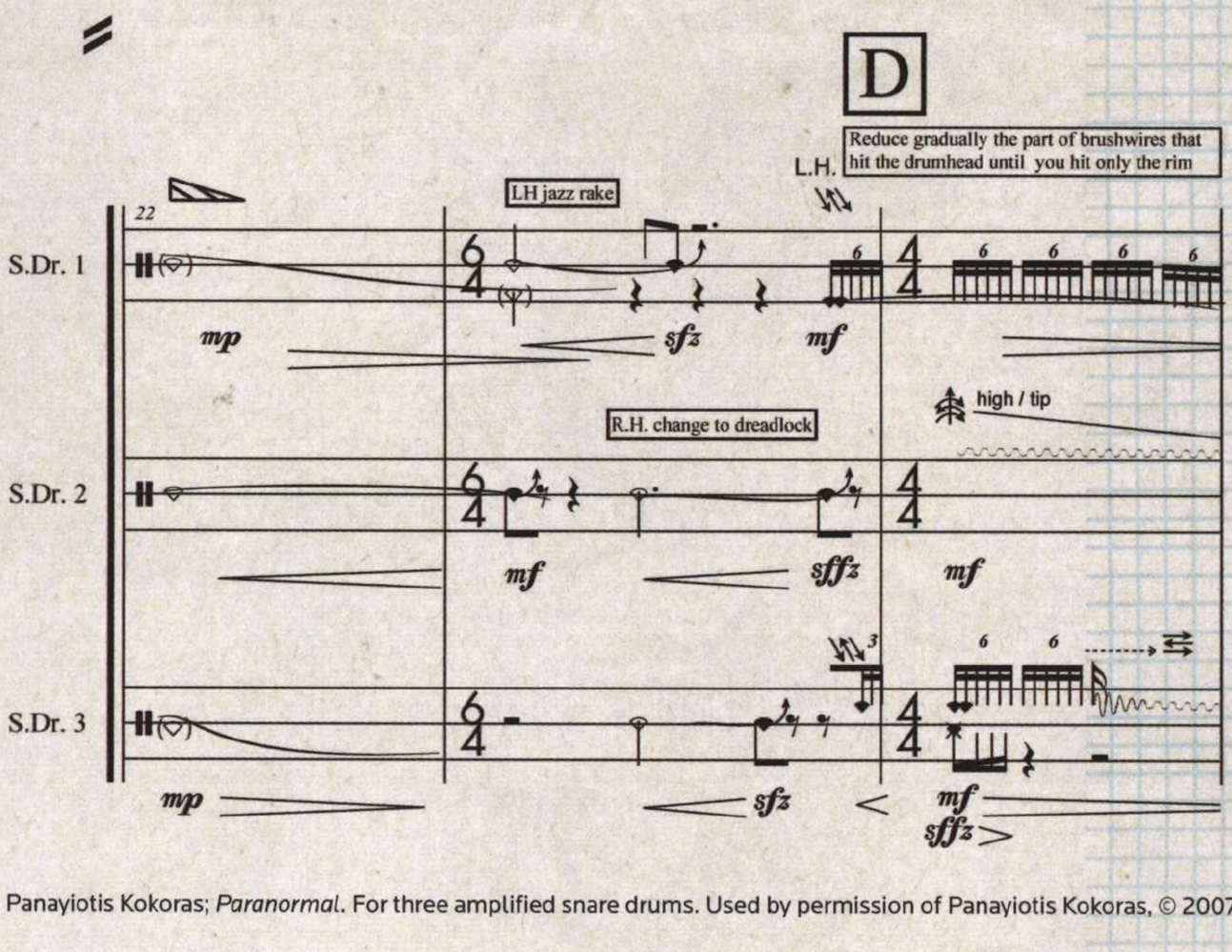
Suk-Jun Kim; *Mi-Dong*. Graphic score for structural analysis. Used by permission of Suk-Jun Kim, © 1999. Image quality best available from composer.

"Cultivate in yourself a good similarity with the chaos of the surrounding ether. Unloose your mind and set your spirit free. Be still as if you had no soul."

by John Cage, who quoted Kwang-tse.

PANAYIOTIS KOKORAS





Panayiotis Kokoras; *Paranormal*. For three amplified snare drums. Used by permission of Panayiotis Kokoras, © 2007.

Paranormal was composed during the winter of 2003. This is the first piece I completed after returning back to Greece after a long stay in England. It was quite a challenge for me to see how my new environment could affect my compositional output.

The first thought I had when I started to work on the piece was to avoid a composition based mostly on pointillistic rhythmical ideas. I tried to create a sort of a sound palette that I was going to use for the piece later. Having a snare drum in front of me I experimented a number of possible locations above and around the drum head using several different kinds of mallets, brushes, sticks, even fingers. I made a classification of the sound database I created with respect to their morphological criteria such as mass, harmonic timbre, grain, dynamics, melodic profile, production context, based on my perceptual and/or cognitive criteria.

Paranormal opens with the three snare drums to create a holophonic texture that carries with it a variety of possibilities for further development and morphopoiesis in the course of the piece. The intrinsic properties of the holophonic texture become perceptible as they fused to single abstract sound entities with temporal focal points and variable peripheral shapes. Listening to the piece one could hear from metallic harmonic shifting to crackly, granular textures and trembling, sweeping gestures, and even more complex sound structures. Occasionally, there are moments that are reminiscent of the sounds of rain, or fire, or air, or even machinery. Amplification is what makes it possible to hear a whole world of sound possibilities, which would otherwise be easily masked by a "bang."

The percussionists' virtuosity is expressed through delicate sound manipulations they control throughout the work. The performers create a variety of sounds by utilizing different points, locations and ways to trigger in the instrument.

Slavek Kwi; *Drawing The Air (Phase 1)* and *Drawing The Air (Phase 2)*. Both used by permission of Slavek Kwi, © 2007.

Statement : • :

My main interest lies in the phenomena of Perception as the fundamental determinant of relations with Re_ality.____----
[the reality is of such bizarrrrrre nature,
that's hard to believe
IT '
ACTUALLY
exists ... /

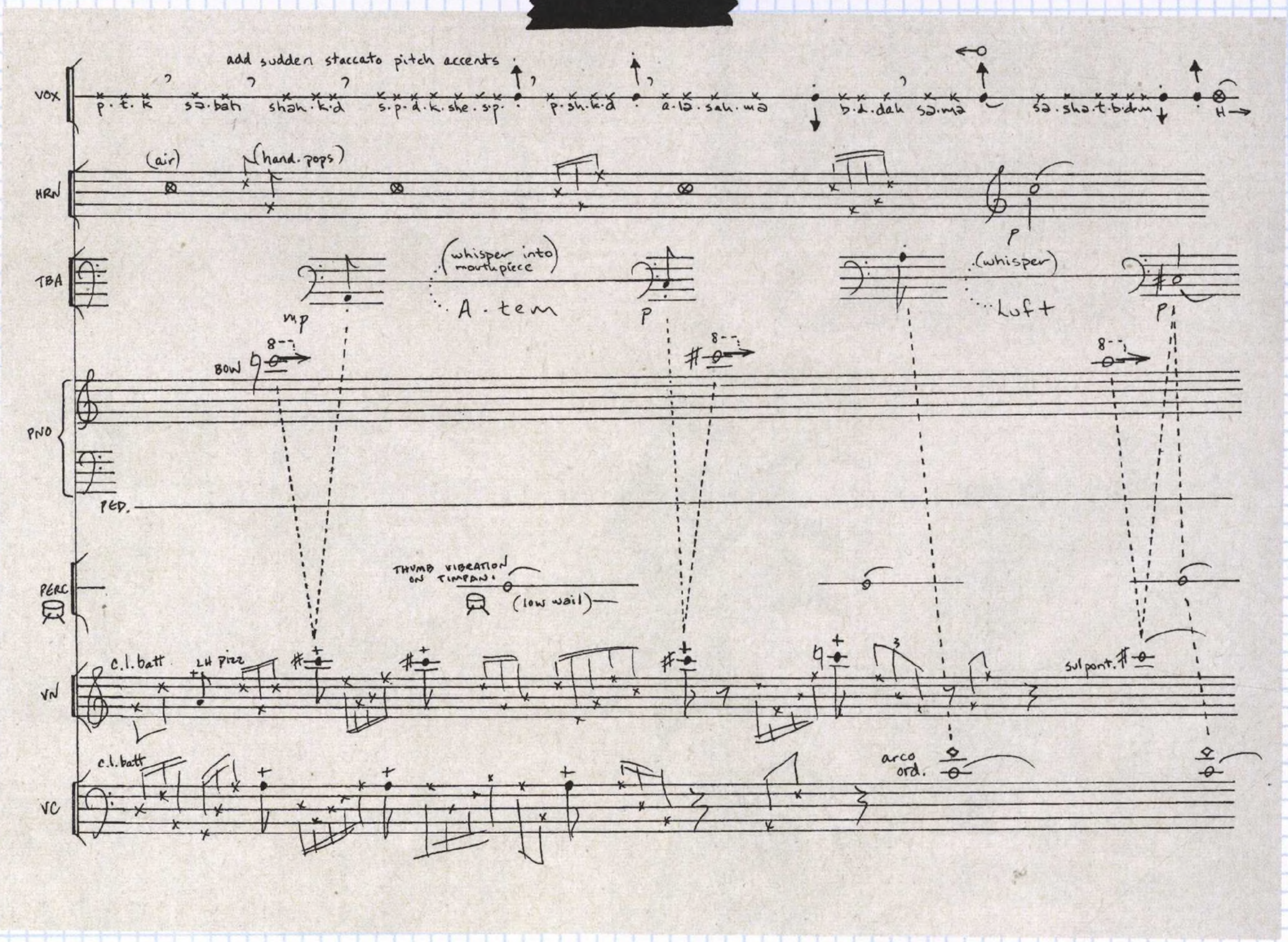
I have been fascinated with sound-environments for the last 25 years, focusing on electroacoustic "sound-paintings". These complex audio-situations are created mainly from site specific recordings, resulting in subjective reports for radio, "cinema for ears" performed on multiple speakers, and sound-installations integrated into the environment. I am interested also in free-music research as part of social investigation. My work oscillates between purely sound based and multidisciplinary projects.

Slavek K w I = artificialmemorytrace

No Cognition_only PERCEPTION

Slavek Kwi; *ASYMFON (post-score in reality particles)* detail. Used by permission of Slavek Kwi, © 2007.

JOAN LA BARBARA



Joan La Barbara; *in the shadow and act of the haunting place*. For voice and chamber ensemble. Used by permission of Joan La Barbara, © 1995.

Joan La Barbara

Visualizing Sound

I see sound. It's as simple as that. When I hear a sonic gesture in my mind, I see a corresponding shape that informs its energy, dynamic, and pitch trajectory.

All musical notation is an approximation; it is an attempt to translate one's ideas into written form to allow musicians to replicate those ideas with some degree of accuracy and flair.

When I create scores, especially those intended for performance by others, I often use the 5-line staff for pitch and rhythmic designations, with graphics above to help indicate how I would like the sound to flow. Often a graceful graphic can help change a straightforward glissando into a sound event having more lyrical movement and elegance.

In the case of extended vocal techniques (i.e., those that go beyond "traditionally" notatable material), graphic scoring is an essential element in helping the interpreter understand the parameters and characteristics of the sound as well as certain details of nuance. Most composers working in this area create their own notational system or vocabulary because many have discovered or invented the sounds they use, or have their own stylistic delivery. The interpreting musician then needs to learn that system or vocabulary, which can be challenging, daunting or inspiring depending on the composer's skill at transmitting the sonic gestures of the mind into something that is discernable and translatable into a form that can be mastered and performed. In general, something that is visually simple, intuitive, and uncomplicated is best, and sending a recorded example of the sound in question, along with the score, is often advisable. There are some conventions that have been adopted, and using symbols that have already entered the scoring (body of literature) allows the interpreter to learn new material more quickly.

John Cage's classic graphic score, *Aria* (see page 44) directs the singer to choose 10 different vocal styles, indicating when each style is to be used by assigning numbers to all or part of a graphic shape. He assists the singer's memory of those decisions by using colors to correspond to each numbered shape, with the graphic itself suggesting the pitch terrain. Time is relative to horizontal space on the page, with empty space indicating silence, and pitch is relative to vertical positioning of the graphic. One could, in theory, decide to notate the work on the 5-line staff, with beats and measures of rest, if one wanted to be able to replicate a performance precisely. It is my feeling, based on many years of working with Cage, that he wanted each performance to be a unique event. He was passionate about experiencing live music in the performance space and his music gives the performer controlled freedom within the boundaries of specific form.

In creating my score for *Circular Song*, I designed a circular mirror-image graphic that displays pitch directionality and breath changes with curved lines, indicating a progression of descending and ascending glissando patterns. Inspired by the circular breathing technique used by wind players and adapted for singing by vocalizing both the inhale as well as the exhale, the work progresses through the series of repeating patterns, broken at specified points in the chosen vocal range, designating when to change from exhaled to inhaled sound. At the midpoint is a figure depicting an ascending set of inhaled and exhaled multiphonics, or double-stops for the voice, followed by a return to the beginning, with the repeating glissando patterns in reverse order until the opening figure is reached again. Transitional figures, non-repeating figures which move the singer from one repeating pattern to the next, are indicated by a small "t."

Conceived in 1974 and premiered in 1975, it is one of my earliest solo compositions, an étude exploring particular extended vocal techniques that I had discovered while exploring the expanded sonic potential of the voice. It is also a very clear "process piece," reflecting my (and a number of other like-minded composers') theoretical concerns during the early 70s.[1]

in the shadow and act of the haunting place, [2] composed in 1994-1995, twenty years after *Circu-*

lar Song, demonstrates the formalization of some of my graphic notation. In translating some of my signature extended vocal techniques for other instruments, I have used a direct correlation of visual symbol to the sound. Jagged, wavy lines indicate ululation (rapid fluctuation of pitch, sometimes used culturally for wails of grief or jubilation, or calls to prayer) for the voice and similar fluttering gestures in other instruments. I often ask my musicians to reflect or mirror the vocal gesture, not imitating that sound, but using an indigenous sound or technique on their own instrument to reflect the energy and shape of the vocal gesture.

I want the instrumental sound to reflect the energy and shape of the vocal gesture, not to imitate it, preferring that the musician choose a technique that explores the sonic gesture in a similar fashion, utilizing the technical range of his or her own instrument. Some of the graphics have become standardized to a degree: blocks for sound clusters; horizontal arrows pointing to the left (above a note) indicate an inhaled sound, to the right, an exhaled sound; vertical arrows pointing up indicate "as high as possible" while arrows pointing down indicate "as low as possible." I indicate specific pitches and rhythms with "traditional" Western notation, using words and graphics to indicate energies, gestural flow, or unusual fragmentation. For instance, inhaled glottal clicks are indicated by a series of dots and small "x" marks, and a fingernail or guitar pick drawn slowly over low wound strings of the piano is indicated with a connected series of "xxxxxxxxxxxxx," and verbal description of how to produce the desired sounds.

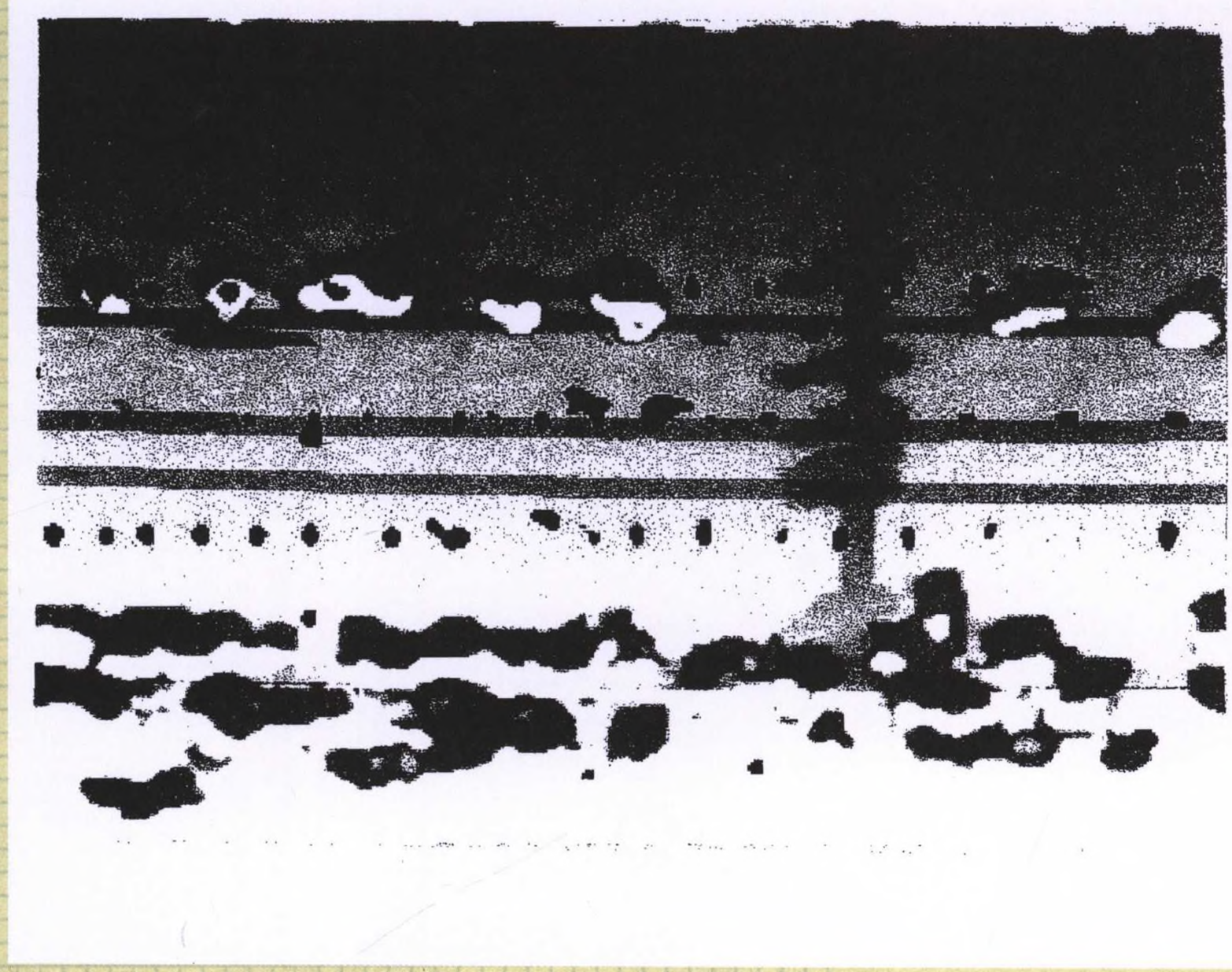
The language I use in my scores is very straightforward. I try to explain what I would like the sound to reflect, whether it is energy, fluctuation in speed, or a specific emotion. I occasionally relate the sound to something occurring in nature ("like a wounded animal," or "like the cries of the last beings on earth"), which may carry emotional content as well, feeling that the musician may relate to this poetic image and may contribute an additional nuance, or a personal facet/aspect/nuance.

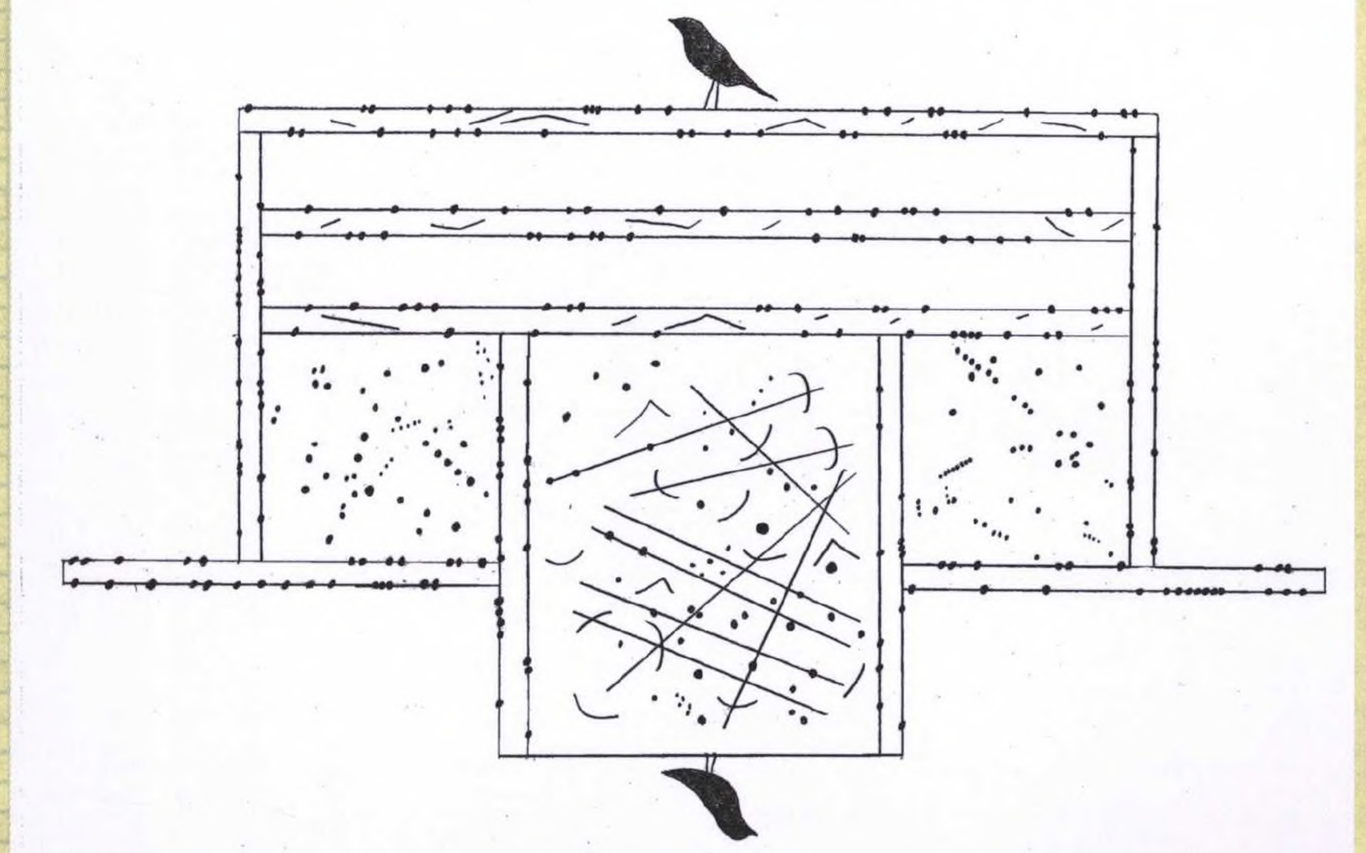
When I sing and when I hear sound in my mind, I often see or sense a visual shape. In my graphic notation, I try to notate the way the sound "appears" to me. I feel that Western notation is only a representation of the sound, a system, agreed upon by a large number of musicians, which approximates what the composer hears in his or her mind. By using graphics in addition to pitch notation, I feel I am approaching a system that allows my internally experienced sound to be better expressed and potentially reproduced with as much accuracy and originality of spirit as possible, allowing for the creative interpretation of the performer.

Morton Feldman once expressed that his music was most perfect in his mind ... nevertheless he put pen to paper and notated some exquisite ideas, in the fervent hope, which we all share, that a musician would breathe life into it.

1 *Circular Song* is one of three compositions on Voice is the Original Instrument, the 1976 concert recording released on my self-produced label, Wizard Music (RVW 2266). My photograph, surrounded by the graphic score for "Circular Song," appears as the cover artwork of the LP. The work is also included on the double cd-set Voice is the Original Instrument/ Joan La Barbara: Early Works *(Lovely Music LCD 3003)*.

2 *in the shadow and act of the haunting place* was premiered January 17, 1995, by the San Francisco Contemporary Music Players at the Veterans' Building Green Room in San Francisco, CA.





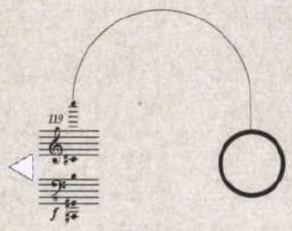
John Lane; *Sparrow Song*. For percussion and narration. Used by permission of John Lane, © 2006.

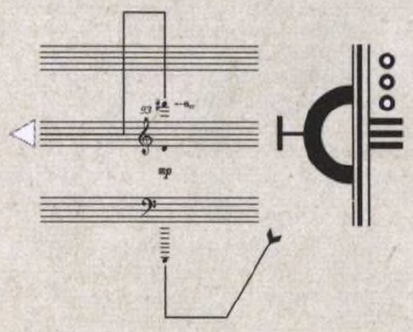
it is not music
only suggestion
a sign of joy
a herald of spring

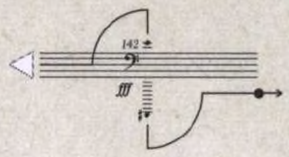
the lone sparrow
sitting amid stark, silent trees
above the wet, cool earth
the spell of winter is broken
he, the firstling of spring

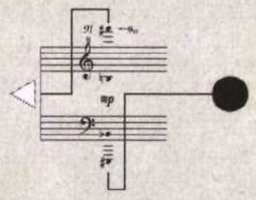
erasure poem(s) by John Lane from the writings
of John Burroughs

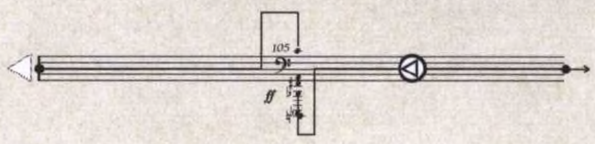
MARK LANGFORD

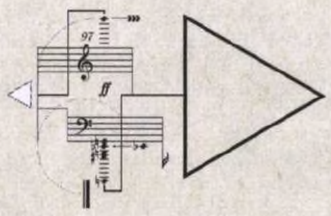


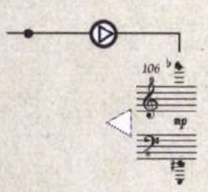


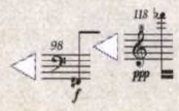


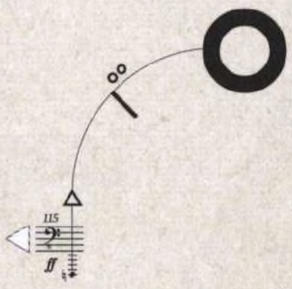


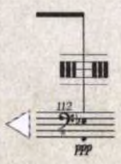


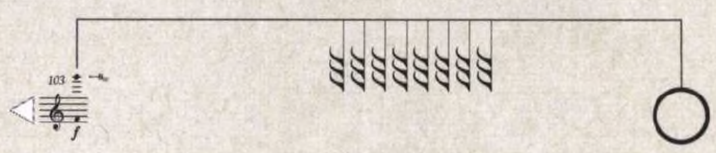


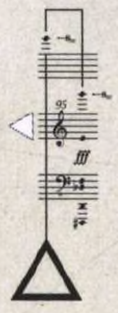


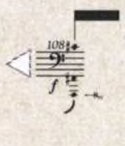


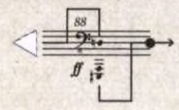


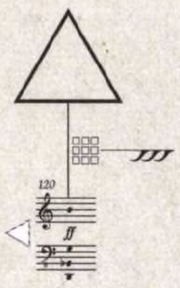


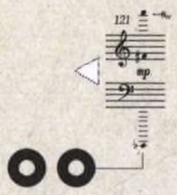


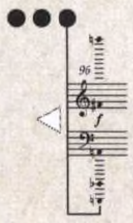


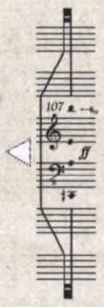


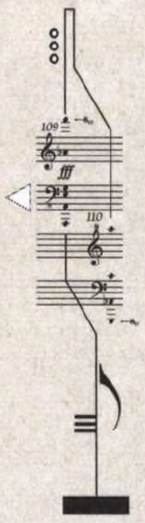












Mark Langford; "Graphic Score Number 9" from *21 Graphic Scores*.

For tape and computer. Used by permission of Mark Langford, © 21 May 2001.

General Notes for Graphic Scores

How did these scores come into being?

It all started when I was at school where I was attempting a class in technical drawing. I wasn't very good at it. The point of my compass gouged out huge holes in the paper and the lead pencil was either breaking or smudging the paper. While studying Music at Victoria University in Wellington, I started doodling again with the compass. But this time I had my prized rotring set of pens. Circular staves were dead easy. It was at this point, I was accused by some, of being obsessed with "Fibonacci numbers" and the "Golden Section." What? Me obsessed? While studying at the Insittuut voor sonolgie in Utrecht, Jack Body sent over an analogue tape of New Zealand bird song and I commenced work on a computer piece with the aid of the two Institute computers Aagje and Betje. They "realized" two works, with the aid of Gottfried Koenig's PR1 programme.

"Composing section 1
Composing section 2
Composing section 3" etc.

God, I didn't know composing could be so simple. Then came the laborious bit. While the Dutch ice skaters were depressed again, because their winter was so mild, I set about to translate the data that was spewed out so obliging by the two computers. Hours were spent scratching off unwanted staves with a razor blade and many more spent calculating the "entry delays" into millimeters. I ended up with a couple of scores, which were really quite useless.

The conversion.

While back in New Zealand I got the itch again to do something with the two scores. And the music slowly metamorphosed from notes on staves in perfect space-time notation, to graphic design. With the odd fibonacci influence here and there.

From go to whoa.

Scores 1 to 5 are a transition from straight scores to rather pointillistic note events. Scores 6, 7, and 8 start a pattern of the circle, triangle and the square. Score 9 is a beautiful Fibonacci spiral. From scores 10 to 21, there is the pattern of the square, the circle followed by the triangle. The final scores are fully digital and have little of the original PRI score present.

In a nut shell.

So, a tape of birds singing their little lungs out became an unfinished digital and analogue work for children called *Vexations for a Dried Out Liverwort*. The written-out scores became the raw materials for my *21 Graphic Scores*. Who said Composers aren't into recycling?

The finale.

I just thought I would end with a comment I wrote while I was a student in The Netherlands. I must have just dropped my rotring pen in the FORTRAN class for the last time.

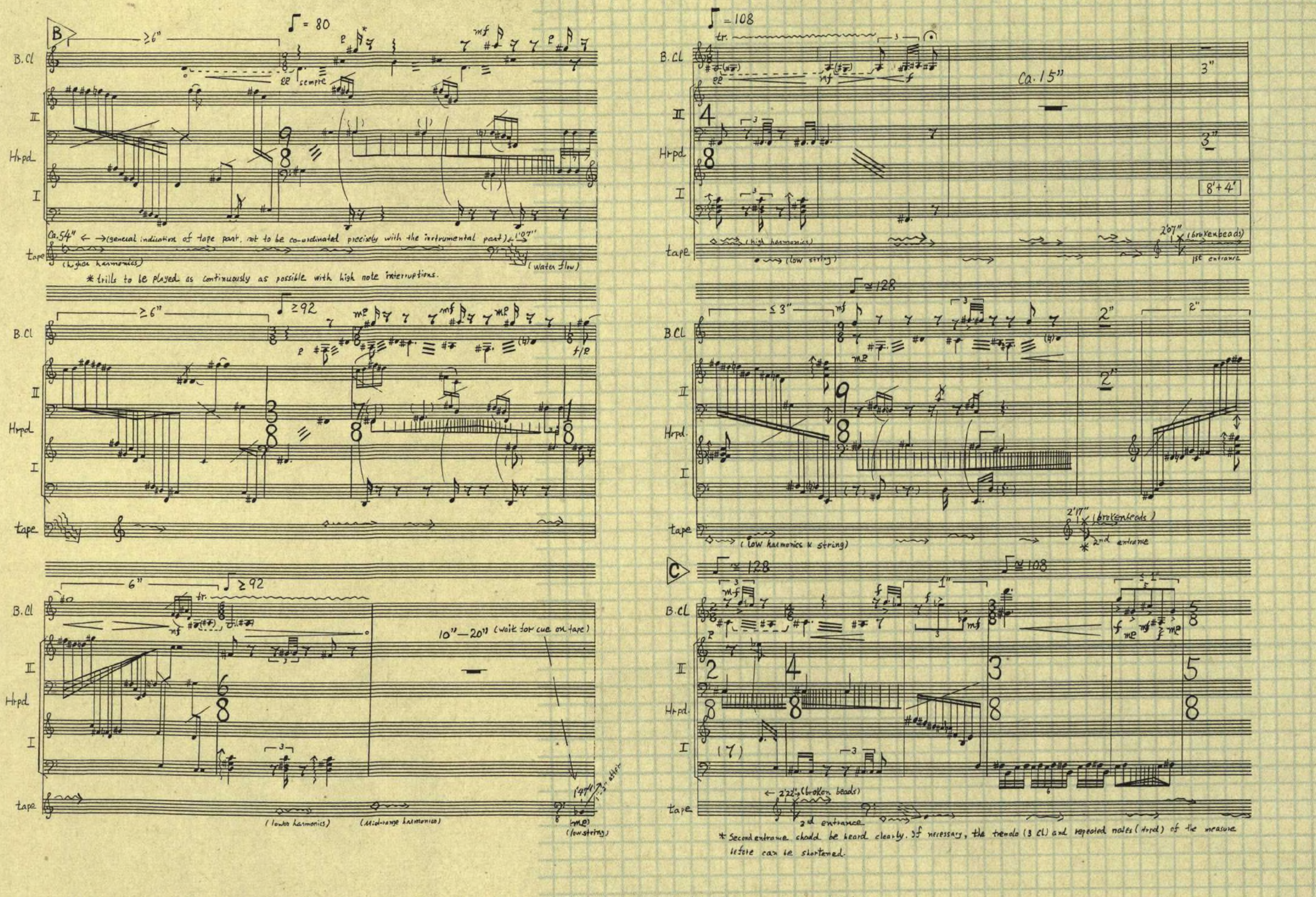
IF(PEN.EQ.FALLEN DOWN)
RESET PEN
IF(NOT RESETTABLE)
GO TO BIN.

HOPE LEE

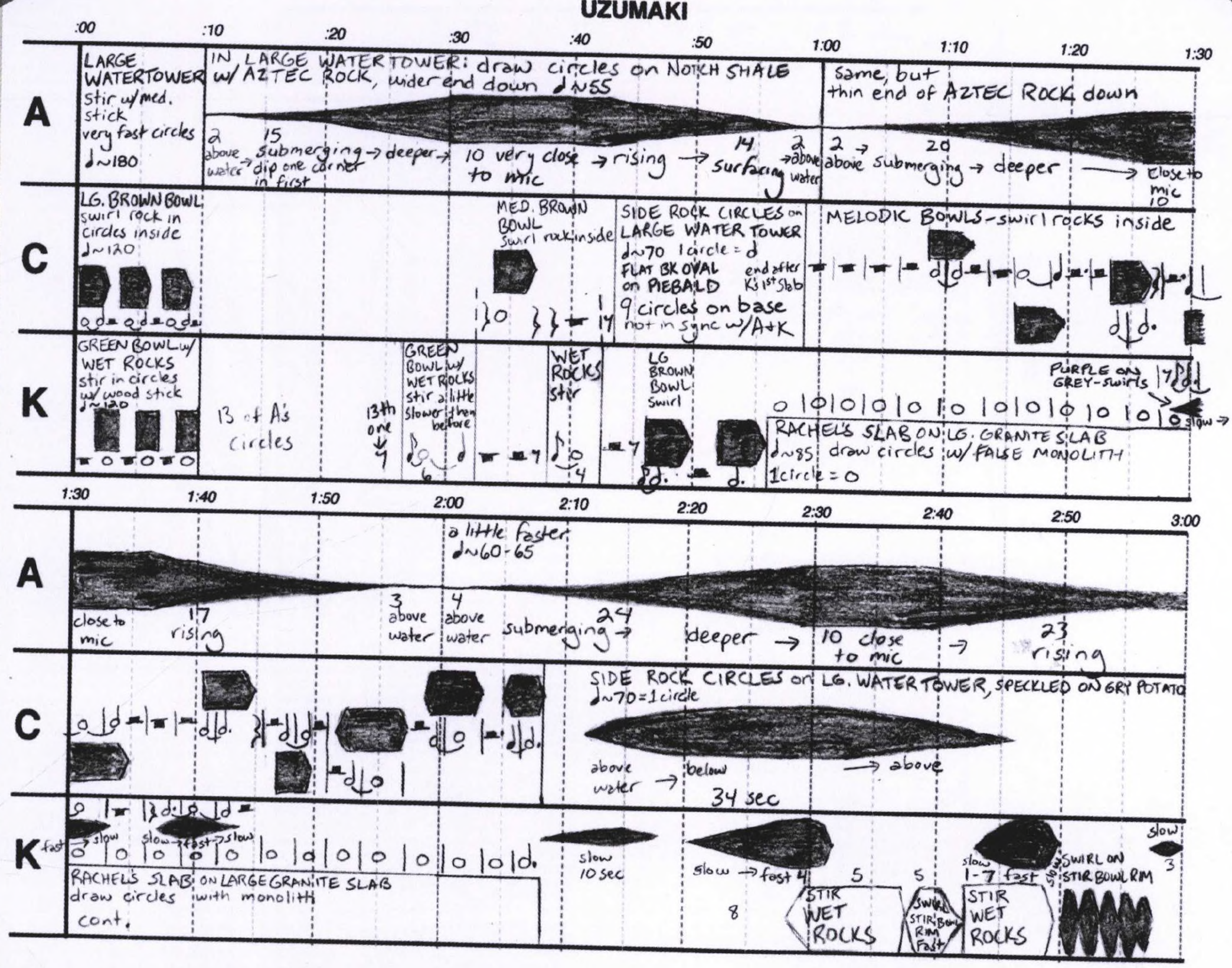
Tangram: As a "cross-cultural explorer," Hope Lee's work often reflects interdisciplinary interests and a view of creativity as an endless adventure of exploration, research, and experimentation.

"Tangram" is a Chinese geometrical puzzle consisting of a square dissected into five triangles, a square, and a rhomboid, which can be combined to form several hundred figures. In this work, music material is like the seven magic pieces found in Tangram. Through arranging, shaping and regrouping, images appear, and impressions are left. *Tangram* is one of eleven works in a cycle, "Voices in Time," for various ensembles based on my research into ancient Chinese philosophy, poetry, and guqing (Chinese zither) music. As in Chinese music where sounds of nature were revered and often emulated, water sounds from Kananaskis were recorded, transformed in the electroacoustic studio, and integrated into the composition on tape. The tape part was realized at the electroacoustic studio at the University of Calgary.

Tangram was commissioned by Dutch musicians Annelie de Man and Harry Sparnaay with the support of a Canada Council for the Arts grant.



Hope Lee; *Tangram*. For bass clarinet, harpsichord, and sound files. Used by permission of Hope Lee, © 1992 (Furore Verlag 1996).



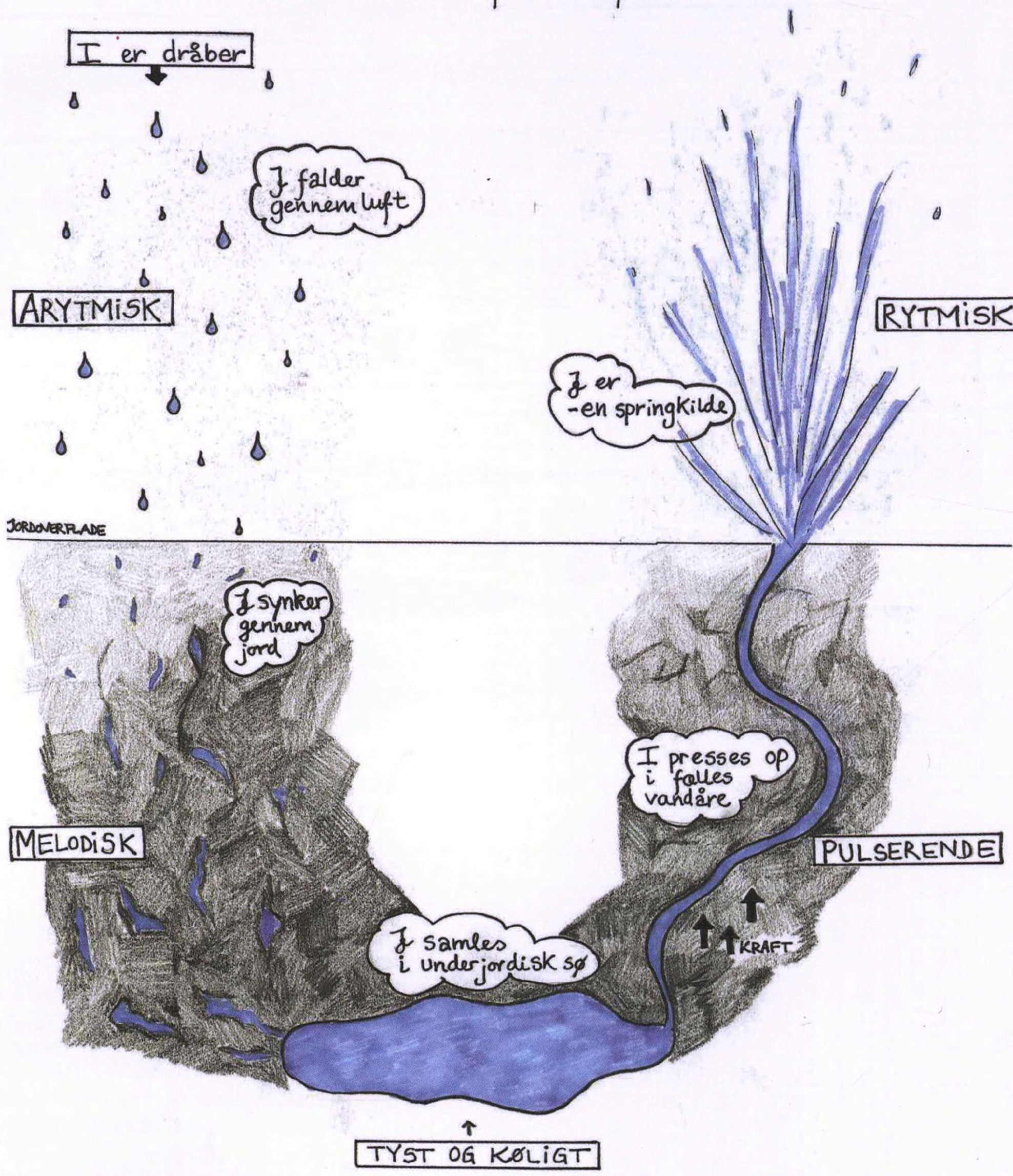
Cheryl E. Leonard; *Music for Rocks & Water*. For three performers playing water and various types of rocks. Used by permission of Cheryl E. Leonard, © 2007.

Music for Rocks & Water is a series of compositions based on motions and gestures from the natural world. Three performers play unique water instruments and a spectrum of types and sizes of rocks: from sandstone to granite, 10-pounders to sand. Rocks are rolled, rocked, brushed, rubbed, stacked, and even tickled. Water is dripped, drizzled, and poured; air bubbles are blown in it at varying depths and stones are played under its surface. The quiet and subtly intricate voices of these natural objects and instruments are amplified via contact, condenser, and underwater microphones. Pieces are conceived especially for real-time performance, with all sounds generated live on stage. Both compositions, and the instruments themselves, are designed to create a visual, as well as aural experience for audiences. Individual works are inspired by ocean waves, the mysterious racing rocks of Death Valley, mountain rockfall, wobbling boulders, whirlpools and vortices, patterns of wind on grass, water flow through falls and rapids, and the shifting of tectonic plates. *Music for Rocks and Water* is comprised of eight short pieces: "Umi," "Jiku," "Himo," "Ashimame," "Shindou," "Uzumaki," "Tenchi," "Hibaku."

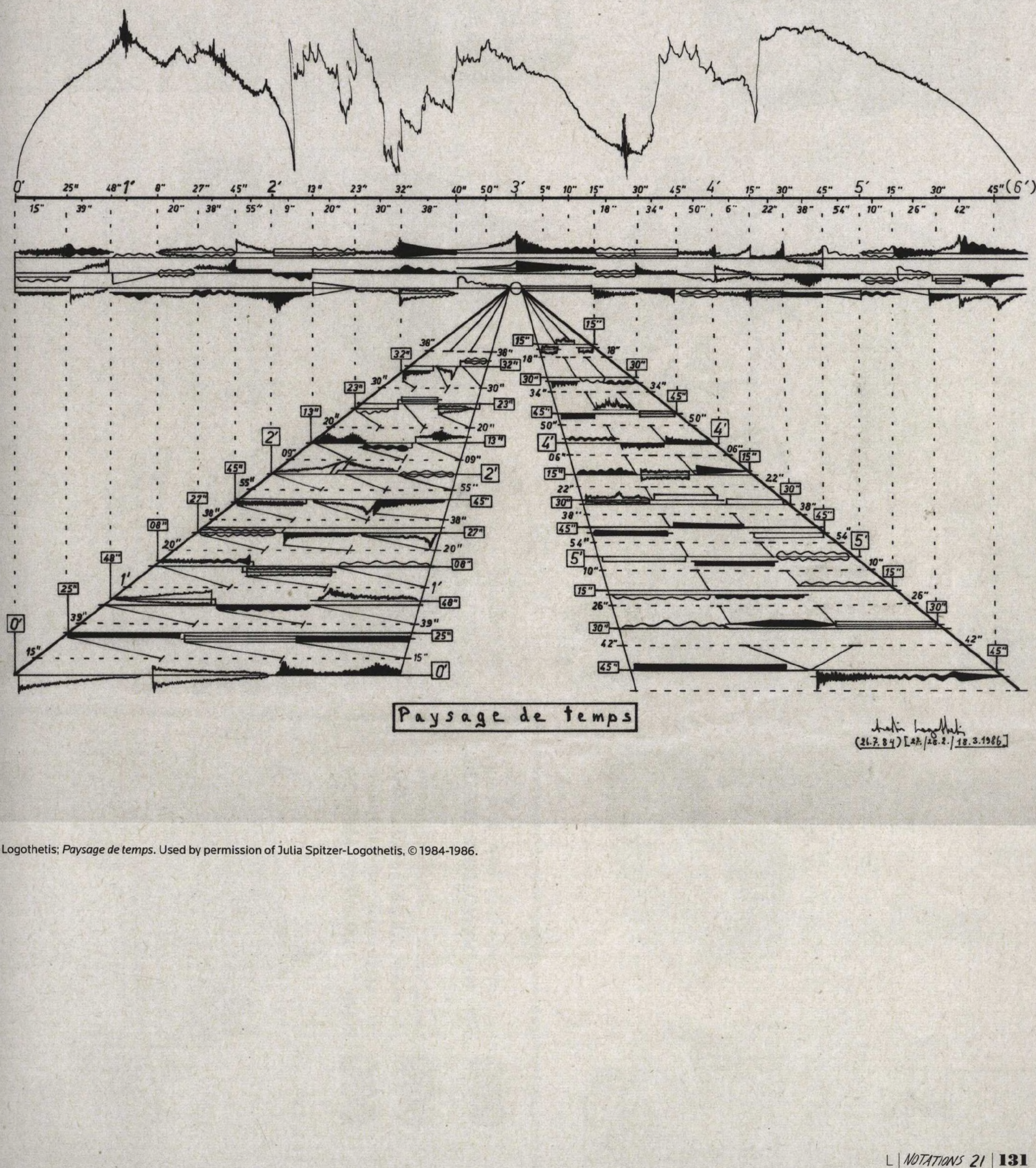
CHARLOTTE LINDVANG

VAND-MUSIK

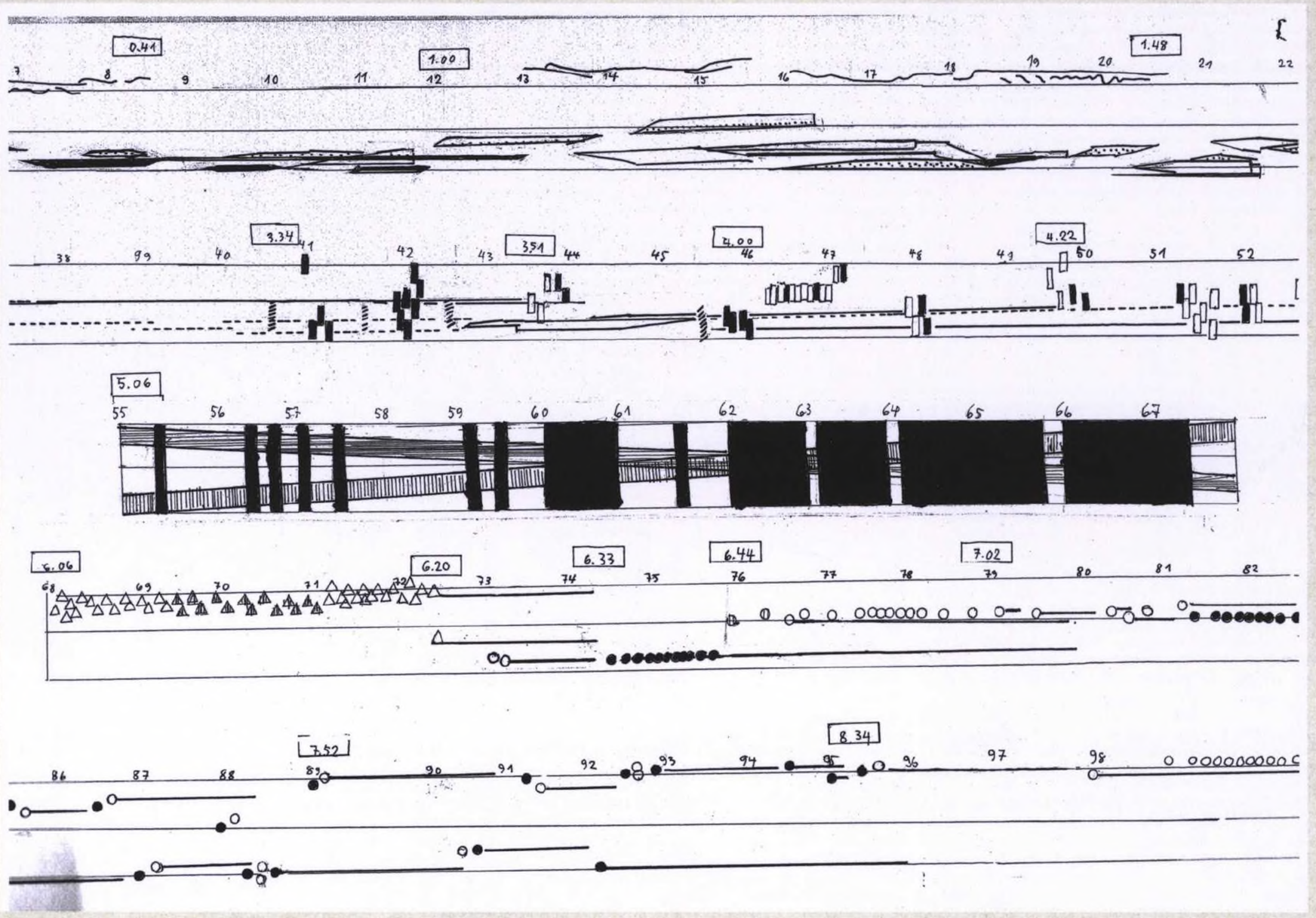
ca. 2 min. til hver af de 5 afsnit.



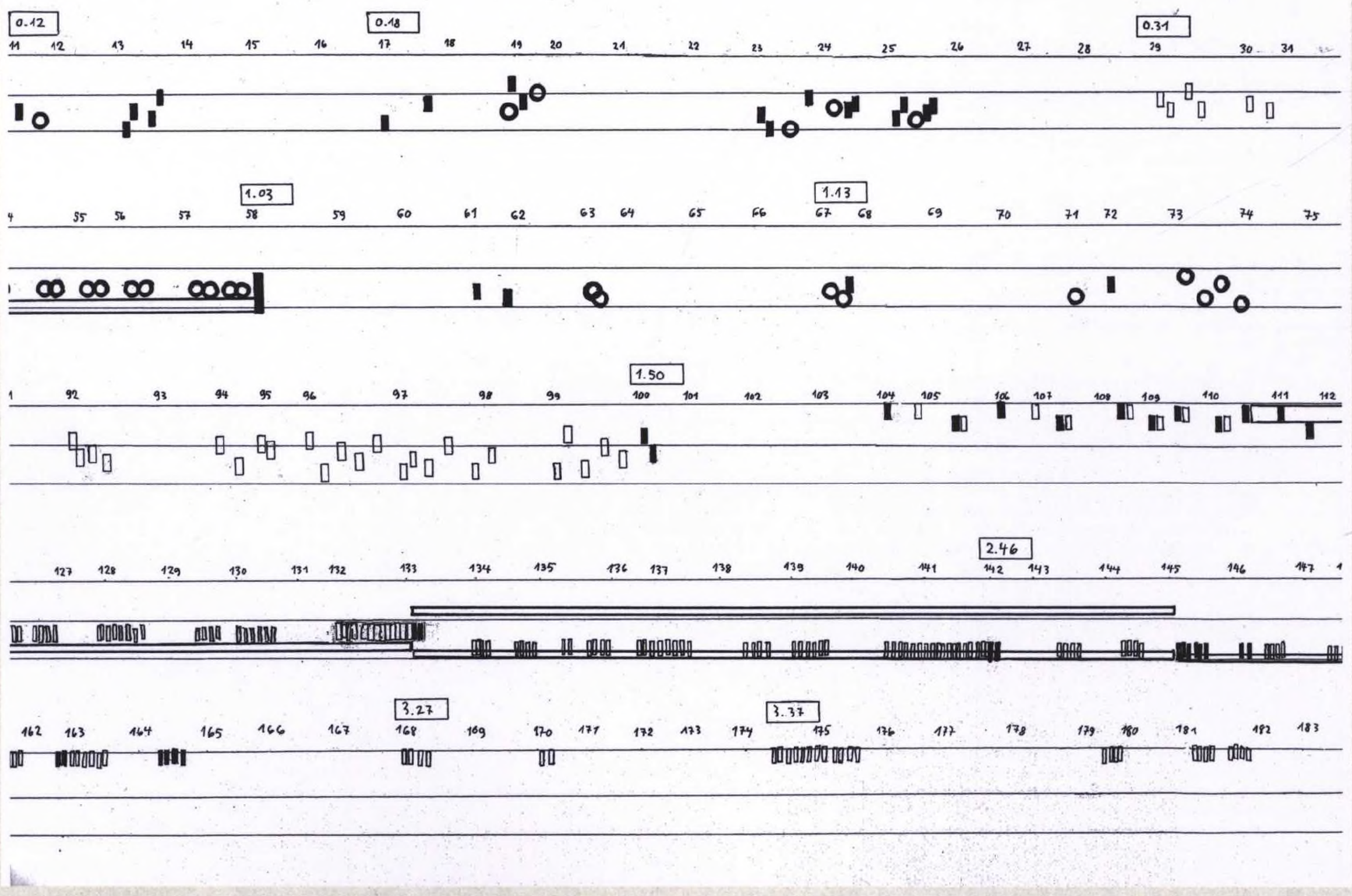
Charlotte Lindvang; *Vandmusik* (*Watermusic*). For improvisation. Used by permission of Charlotte Lindvang, © 2007.



Anestis Logothetis; *Paysage de temps*. Used by permission of Julia Spitzer-Logothetis, © 1984-1986.

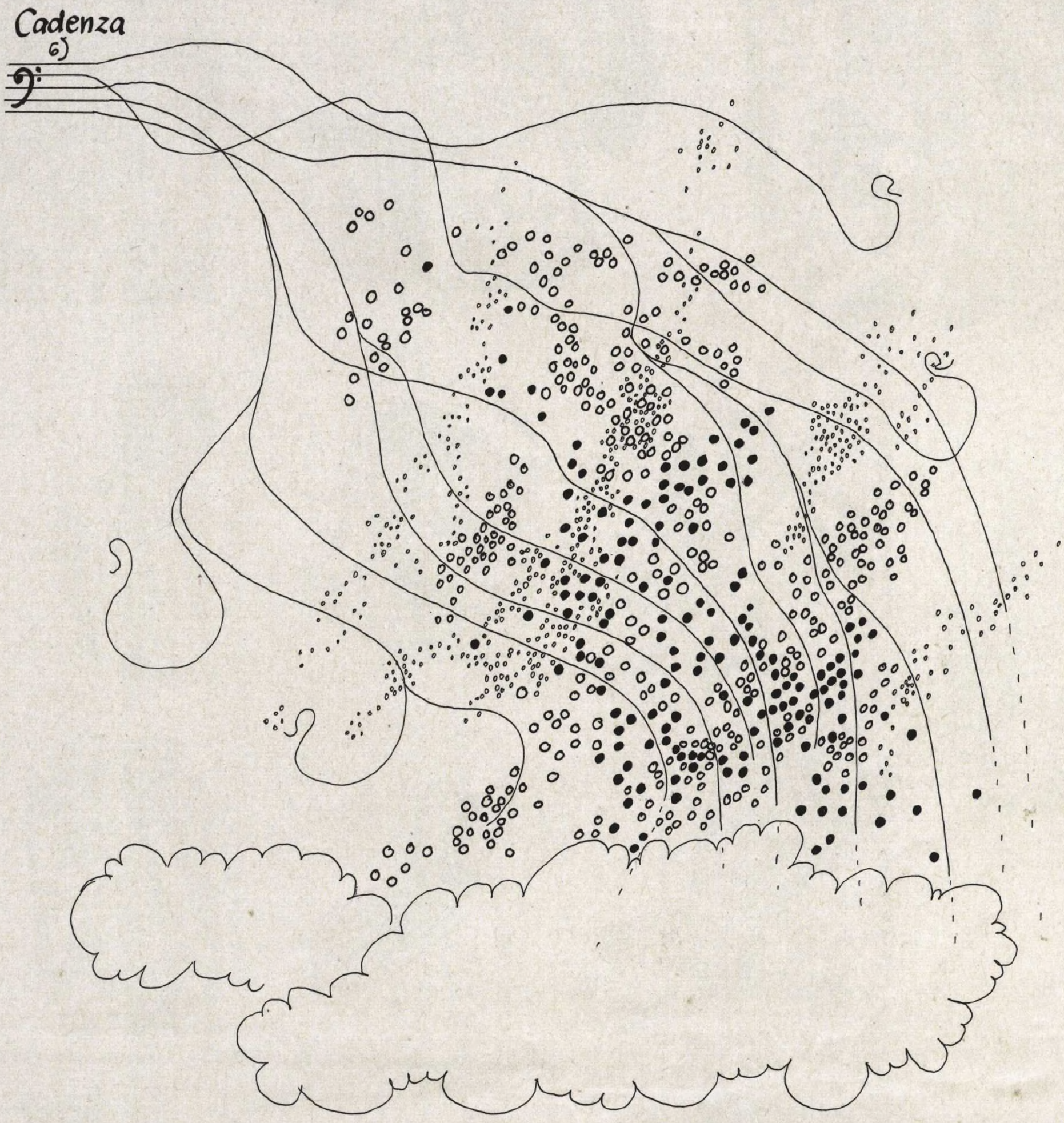


Bent Lorentzen; *Intersection for Organ*. Used by permission of Bent Lorentzen, © 2003.



Bent Lorentzen; *Punti for Organ*. Used by permission of Bent Lorentzen, © 2004.

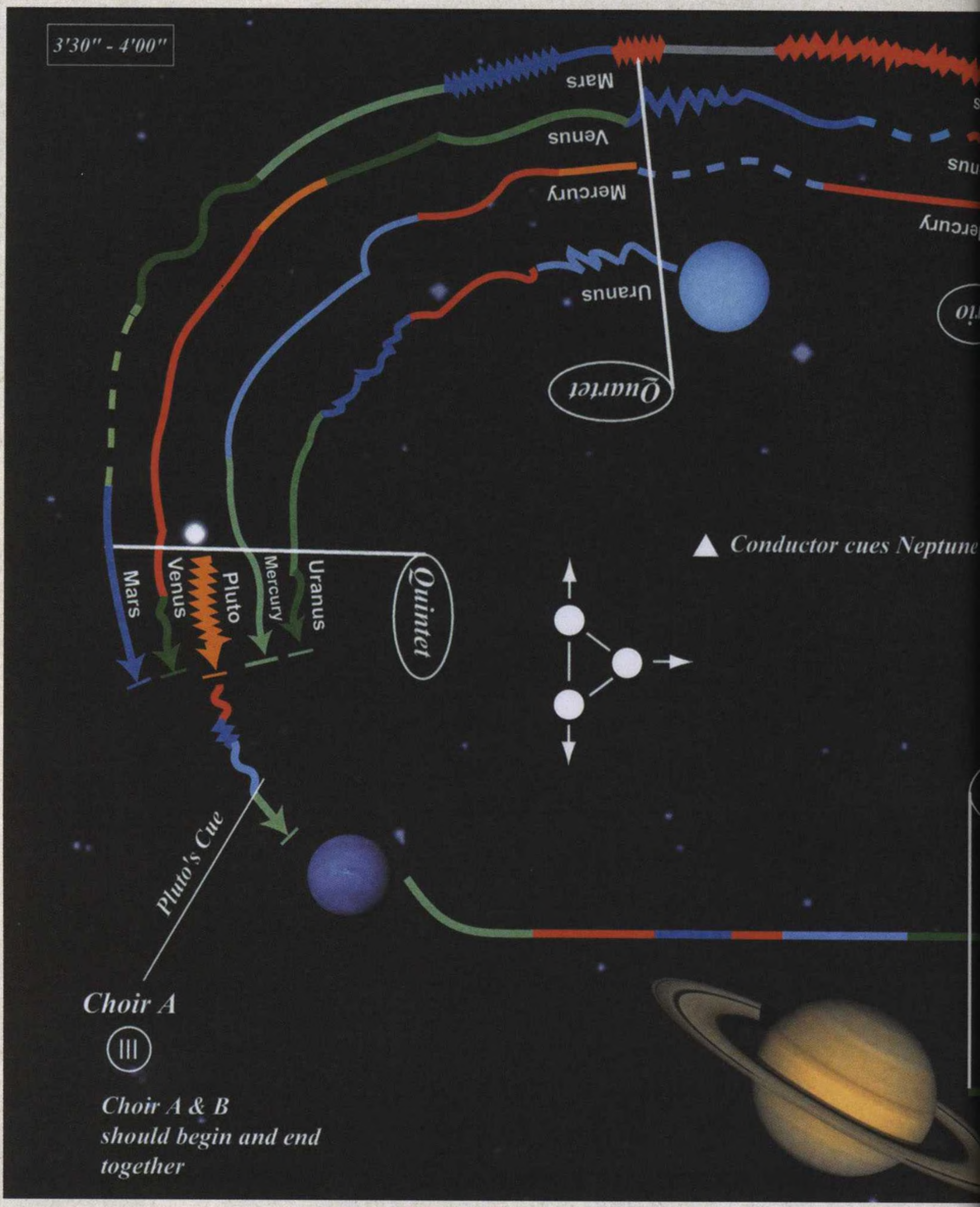
14 (13)



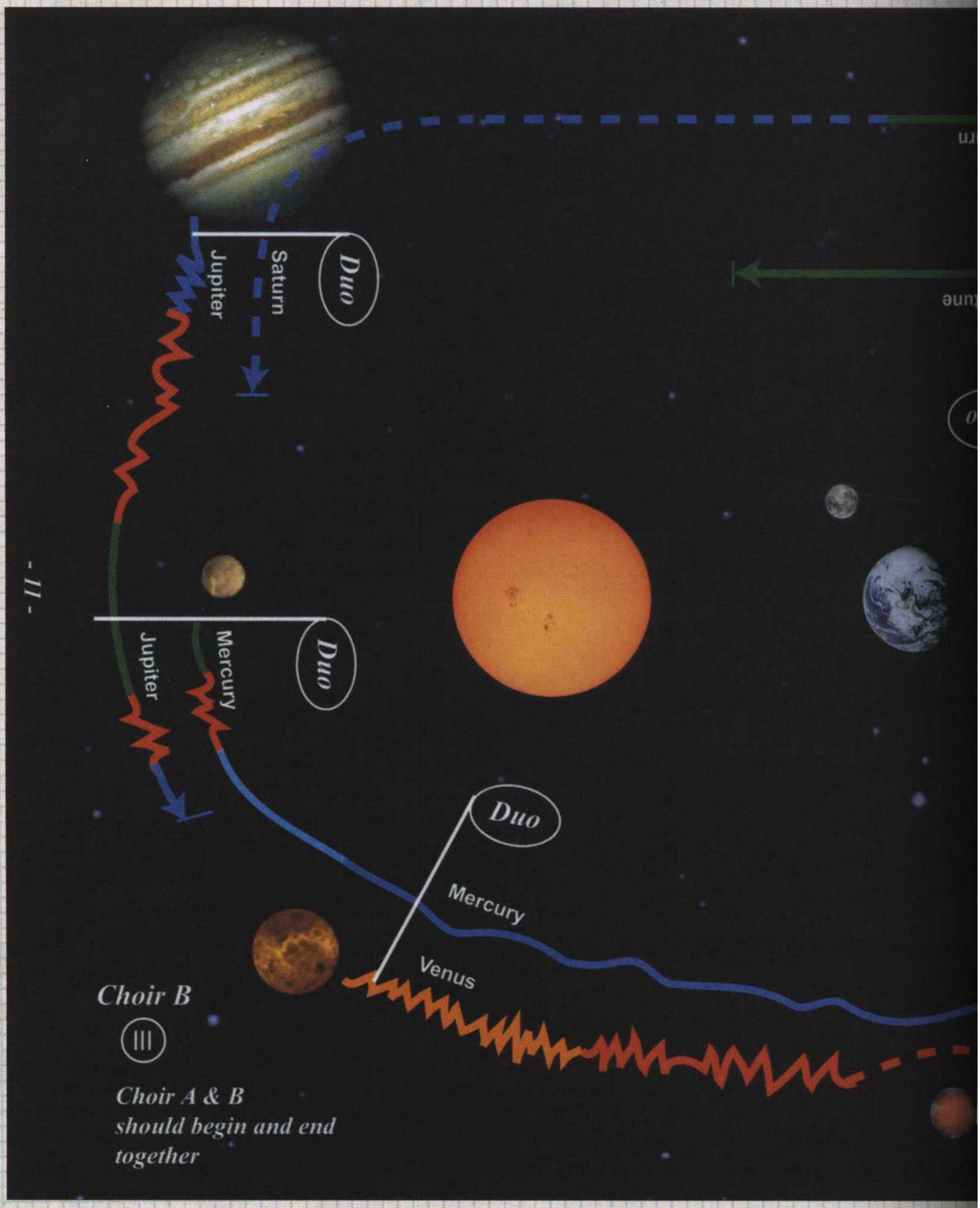
6) Ideal performance
Following is with great effect drained off from the biggest possible height:
F.ex: 25 ping-pong balls, 500 plastic-globes and peas, 10 spiral springs, 10 tins, 5 old watch-springs. It is important, that the sound is as long as possible. At (13) the smoke is on the highest, and from now decreasing. Put down the cello, cover the instrument with a white cloth, and decorate it with tasteless red paper-roses. Go to the bell.

Alternative performance
Push the chair and music stand brutally. Put down the cello. Use the bow as a knife and stab the cello. Scream loud and desperate as a person being murdered. Go to the bell.

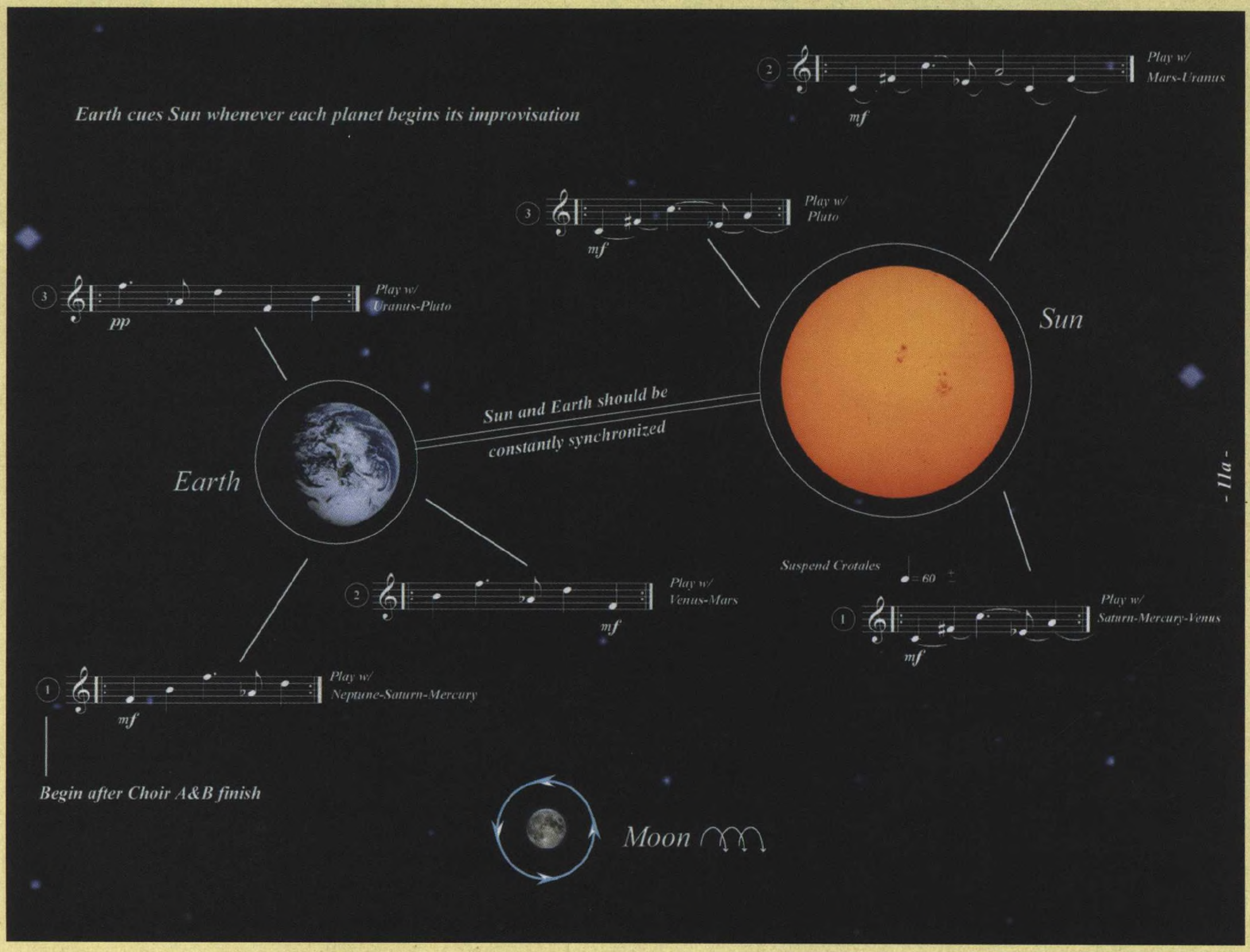
Bent Lorentzen; *The End*. For solo cello. Used by permission of Edition Wilhelm Hanson AS, Copenhagen, © 1969.



Martin Sebastian Loyato; *Celestial Spheres Fantasy for Improvisers*. For 40 musicians. Used by permission of Martin Loyato, © 2005.


Duo
Saturn
Jupiter
Duo
Mercury
Jupiter
Duo
Mercury
Venus
Choir B
III
Choir A & B
should begin and end
together
- 11 -

MARTIN SEBASTIAN LOYATO



Martin Sebastian Loyato; *Celestial Spheres Fantasy for Improvisers*. For 40 musicians. Used by permission of Martin Loyato, © 2005.

Celestial Spheres is an invitation to a spiritual journey, representing the universe as a metaphor for personal experience. The music is based on an original poem that revolves around the interconnectedness of all living beings. The message of the piece is encapsulated in the final stanza of the poem:

IF WE WERE BEYOND THE MIND AND BODY,
OF ONE RACE,
TRANSPARENT,
MORE THAN HUMAN.
IF LANGUAGE WERE WISDOM,
THEN,
OUR WORLD WOULD BE THE SEED OF COMPASSION:
THE LAST REVELATION.

I take a step forward from the Western Classical tradition to create a musical language delving into the mythic realm of the symbolic as a source of inspiration and a call to one's primal wellspring of creativity. Freed from the confines of traditional notation, the performers are responsible for articulating the composer's vision based on a complex system of symbols and instructions. The responsibility carried by each performer within the tapestry of the piece mirrors the responsibility each individual carries in life, as all beings produce a ripple effect on their surroundings. As such, the performer embarks on a journey of personal and collective creation, reflecting the dynamism of singularity and unity at play in our lives and in our universe.

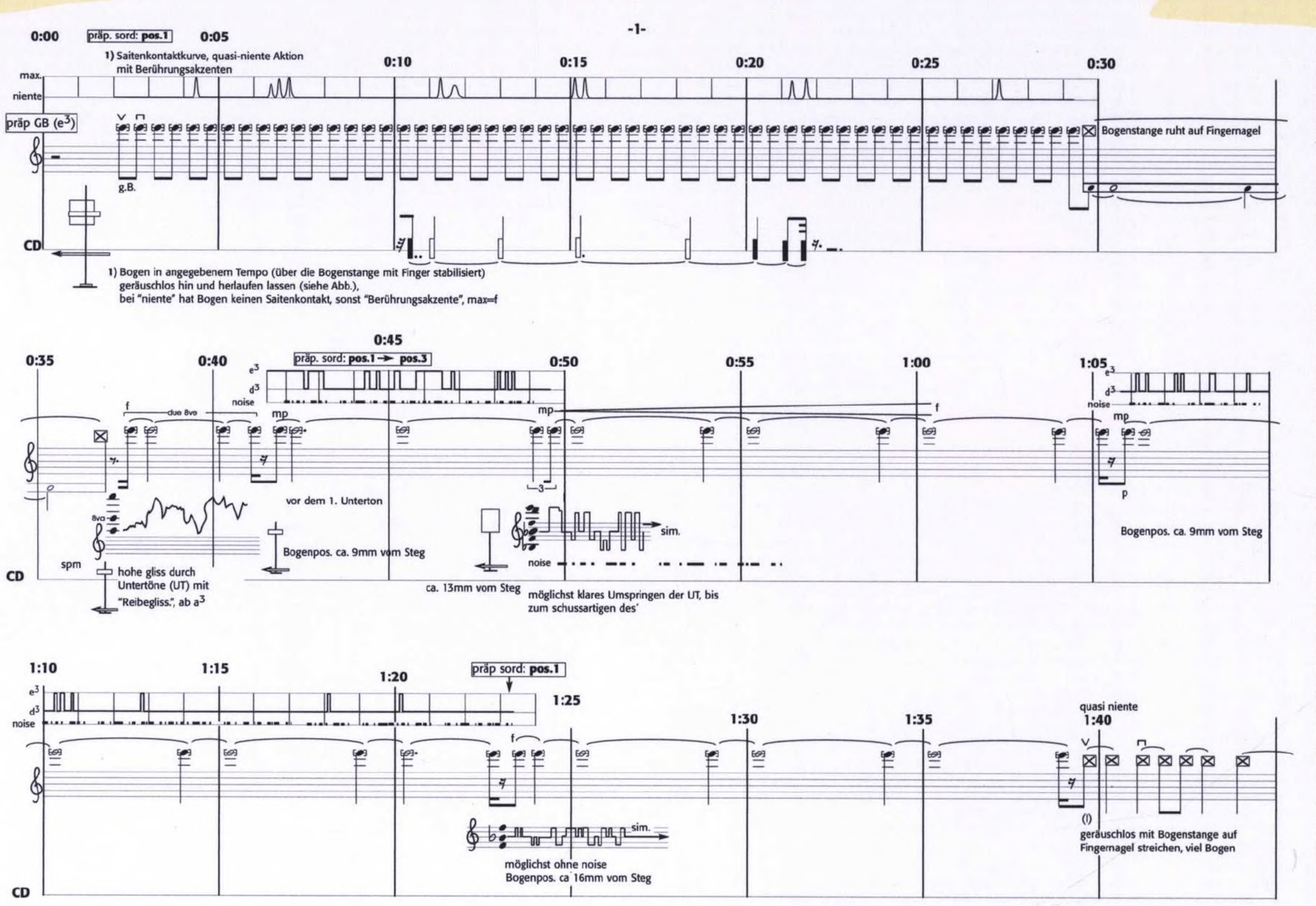
The piece contains approximately 50 symbols and 11 pages of instructions for the performers. For example, I use different arrows to indicate tempo and lines of color to indicate dynamics. Pictures and maps of the solar system constitute another aspect of graphic notation, and reflect the metaphorical conception of the piece. The solar system is symbolized in the instrumentation: mellophone—Venus; horn—Mercury; piccolo trumpet—Pluto; trumpet—Uranus; flugelhorn —Mars; trombone—Jupiter; euphonium—Saturn; tuba—Neptune; percussion—Sun; midi-trumpet—Earth; laptop (electronic)—Moon.

Metaphor motivates the assignment of Sun to percussion, establishing the beating center of the music. The laptop, which represents the Moon, processes signals from Earth, represented by the midi-trumpet, as well as sounds from other surrounding sources. The piece opens with the computer-processed and electronically generated sounds of human activity, some of which are taken from the live audience prior to the start of the performance. These sounds disintegrate and reassemble, rotated through six speakers, to provide background material throughout. Instrumentalists are positioned in the performance space as their assigned planets are positioned in the Solar System.

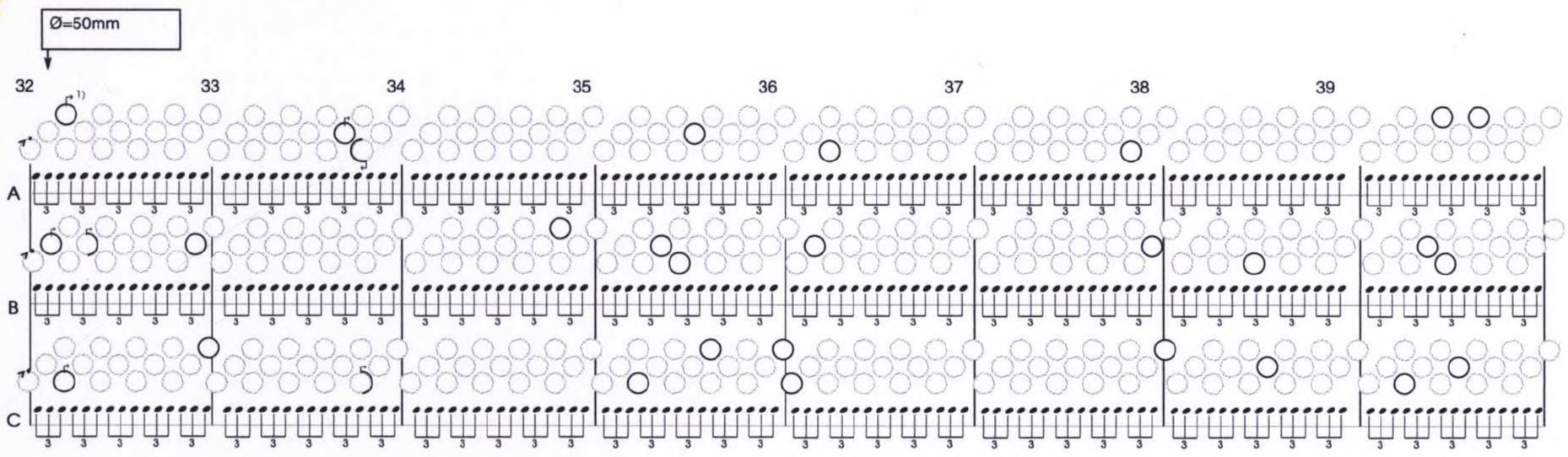
The singers, including a child's voice, articulate text in the mother languages of many currently influential cultures (Latin, Greek, Arabic, Hebrew, and Chinese). In this way the singing represents the godly aspect of human belief, the roots and causes of thoughts and feeling.

The sound of the gamelan, tuned to scales unfamiliar to Euro-American cultures, reflects the human ability to be at once flawed and infinitely beautiful. At the end of the piece, I use a traditional Belenganjur—a ceremonial genre of Balinese gamelan music accompanying ritual procession—as a celebratory backdrop to the emergence of "the last Revelation," which is symbolized in the cry of a newborn baby heard in the electronic part, circling through six speakers.

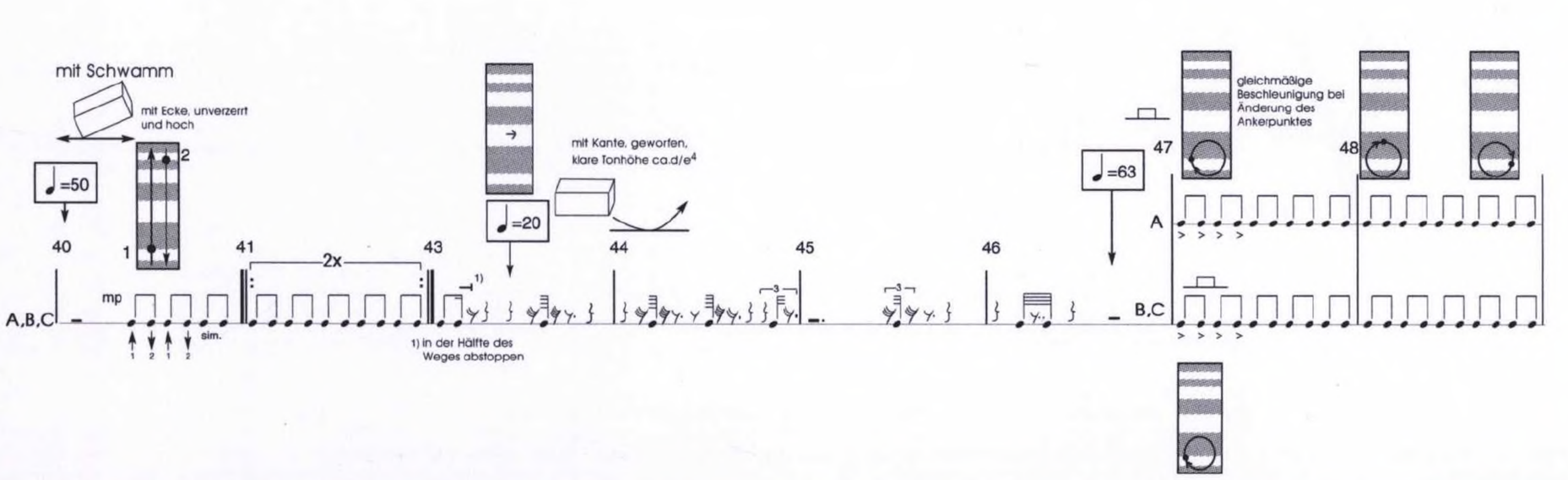
My hope is that the demands of following an unconventional score, of using recurring extended techniques, of improvising together according to pre-existing patterns, and of having to listen closely to fellow musicians in the interconnected play of this music, may all reflect the labor and the joy of human life in the cosmos, for both listeners and players alike.



Michael Maierhof: *splitting 15*. For viola. Used by permission of Michael Maierhof, © 2006.

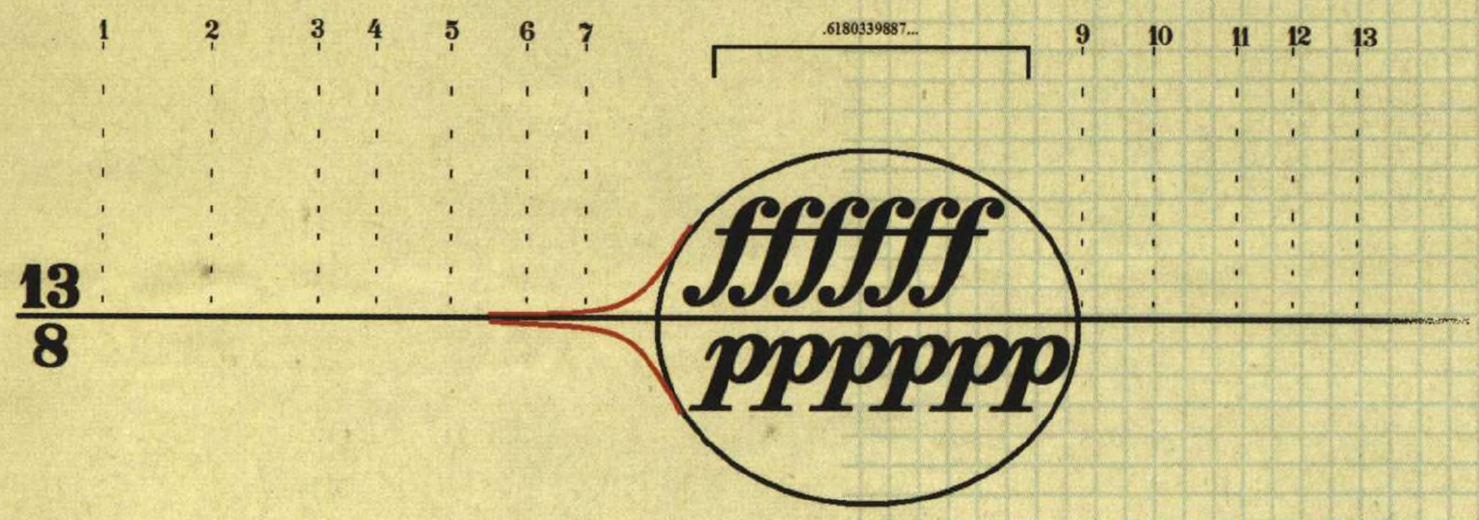


1) nur bei den markierten Kreisen klingend, sonst ist triolische Bewegung stumm

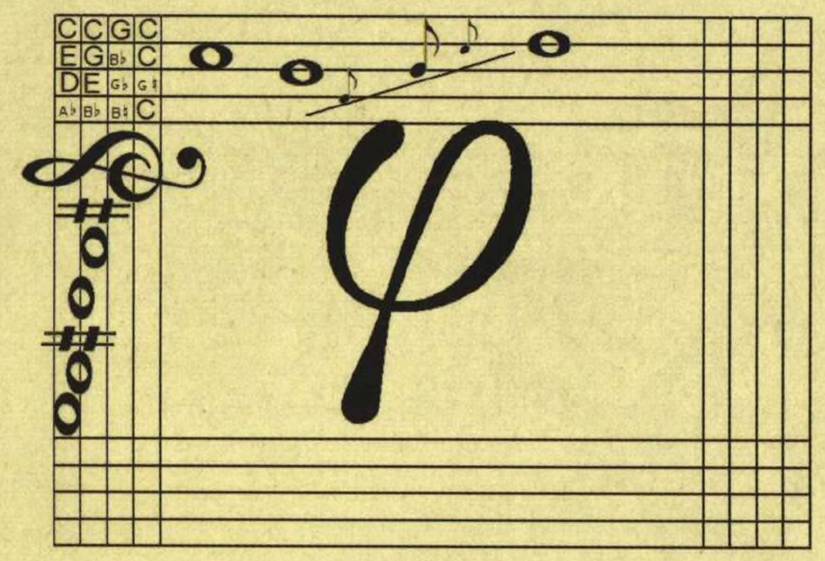


Michael Maierhof; *shopping 4*. Used by permission of Michael Maierhof, © 2006.

TYLER MAINS



Tyler Mains; *Fib Either Way.* For bowed stringed instruments as long as the total number of instruments is equal to a number in the Fibonacci sequence. (1,2,3,5,8,13,21,34,55,89, etc.)
Used by permission of Tyler Mains. © June 2007.



Tyler Mains; *Meditation.* For solo baritone and amplified piano in a large chapel. This is also a golden ratio composition.
The soloist and pianist read the score in opposite directions but both have the full score. Used by permission of Tyler Mains. © 2006.

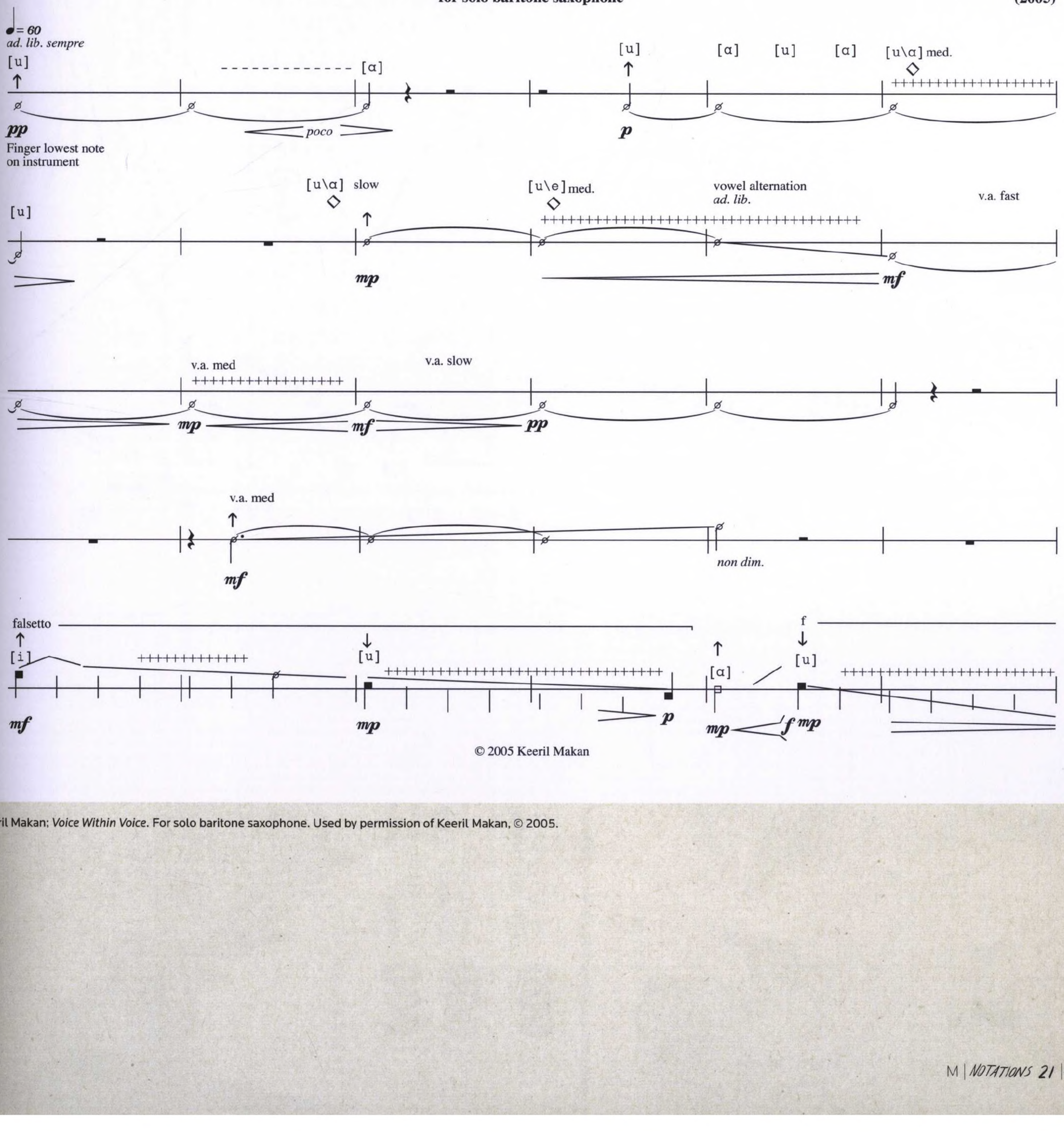
Written for Brian Sacawa

Duration: 8'

Voice Within Voice

for solo baritone saxophone

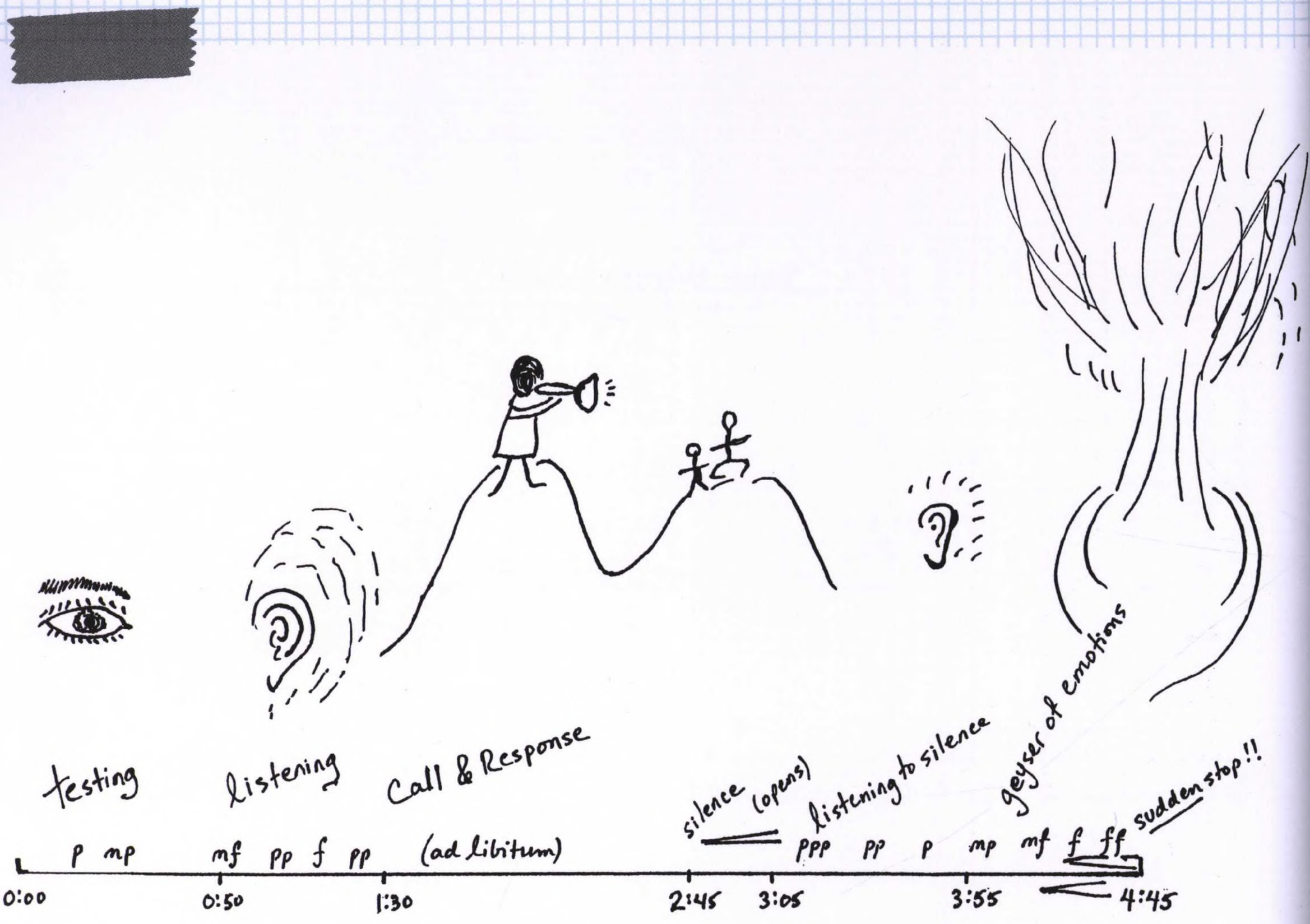
Keeril Makan
(2005)



© 2005 Keeril Makan

Keeril Makan; *Voice Within Voice*. For solo baritone saxophone. Used by permission of Keeril Makan, © 2005.

DAN MARMORSTEIN



Dan Marmorstein; "Structured Improvisation #5—Landscapes" from *5 Structured Improvisations*. For variable instrumentation. Used by permission of Edition Samfundet, © 1999.

My rather straightforward time-code-based graphic score, *Landscapes*, is one of five Structured Improvisations that I sketched out in 1999.

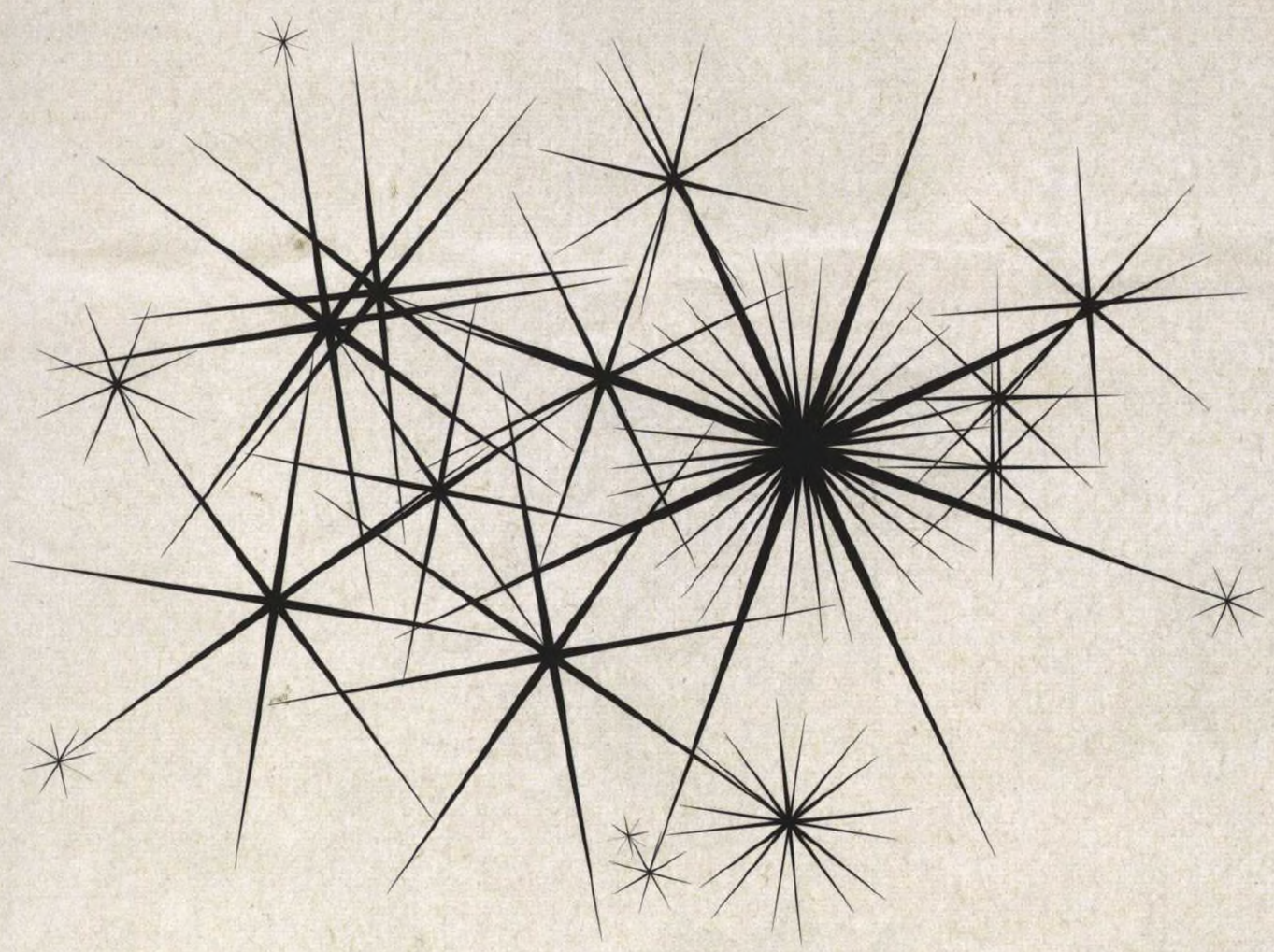
Some of the music we listen to—and much of the music we play—contains elements that are planned out in advance. When the melody, harmony, rhythm, and dynamic articulation of the music (and the constitution of the ensemble) are charted out with precise stipulations prescribed by an author, we have before us a composition. These stipulations convey a formative intention on the part of the composer. When (one or more) musicians perform the composition, the sounds the composer has envisioned and notated are brought into being, with the result that the intention comes to life. In other situations, people improvise ... and play nothing other than what they choose to play at the ongoing instant of the performance, eschewing the notion of following any directives prescribed by a plan; there is no wish whatsoever to carry a preconceived intention into manifestation. The motivation here is rather a desire to bring forth something that has not been envisioned/imagined beforehand, with the hope of discovering (and contributing) something new and different. In its most radical rendition, free improvisation leaves all the luggage of acquired information by the wayside and heads relentlessly toward the horizon of uncharted territory.

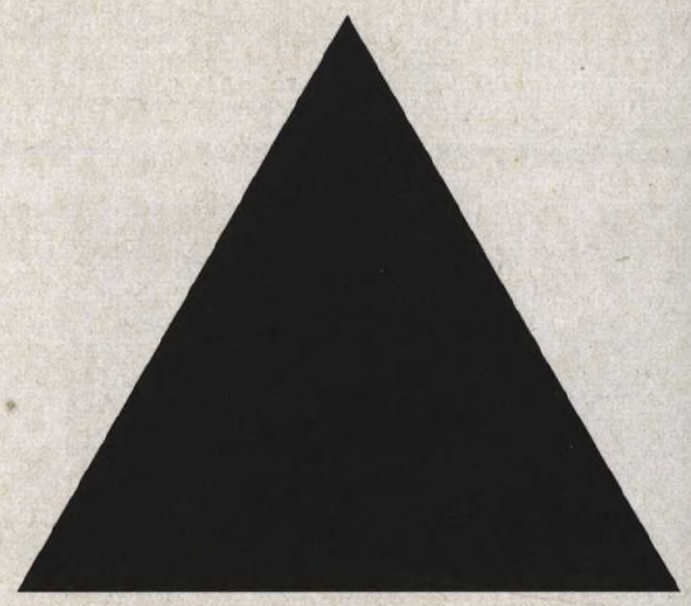
However, in both its genesis and its manifestation, the character of much of what we hear—and play—is situated somewhere in between the poles of thoroughly composed music and absolutely free improvisation. Generally speaking, in folk music, the words of the song and its melody, or in many cases the contour of the melody, are (composed) givens. But the individual player or the collective, as the case might be, breathes his/her own poetry into the interpretation and improvises with respect to articulation, rhythmical organization, and degree of harmonic complexity. In jazz music, it is often the harmonic framework of the (composed) song that is retained, albeit with eventual alterations, while new melodies and syncopations are spun forth against this fixed backdrop, after the initial appearance of the song's "head." In rock and in pop music, generally speaking, performers manage to press their own personal fingerprints on the composition through the deliberately singularized manner of articulating the material and through diverse sequences of repeating, extension, and fragmentation, which frequently leave pockets of time for the singer and the instrumentalists to improvise melodic and rhythmic variations on the given theme.

Structured Improvisation thematically addresses itself to the vast potential for vitality and flexibility situated in the expanse between the aforementioned poles. Placing a question mark beside the constraint on music to crystallize itself in the form of a "piece" and aimed at a reckoning/showdown with this notion, the activity of concocting structures as a basis for improvisation, has its roots in a will to generate activity and play (simultaneously in the sense of "playing music" and in the sense of "play" as a game) that surpasses any compulsion to create finished pieces/works. Paradoxically enough, in the manner of packaging the suggestions in some kind of form that is to be communicated to others, there is indeed an aspect of "opus" which is retained, albeit in the form of an open work.

Copenhagen, August 2007

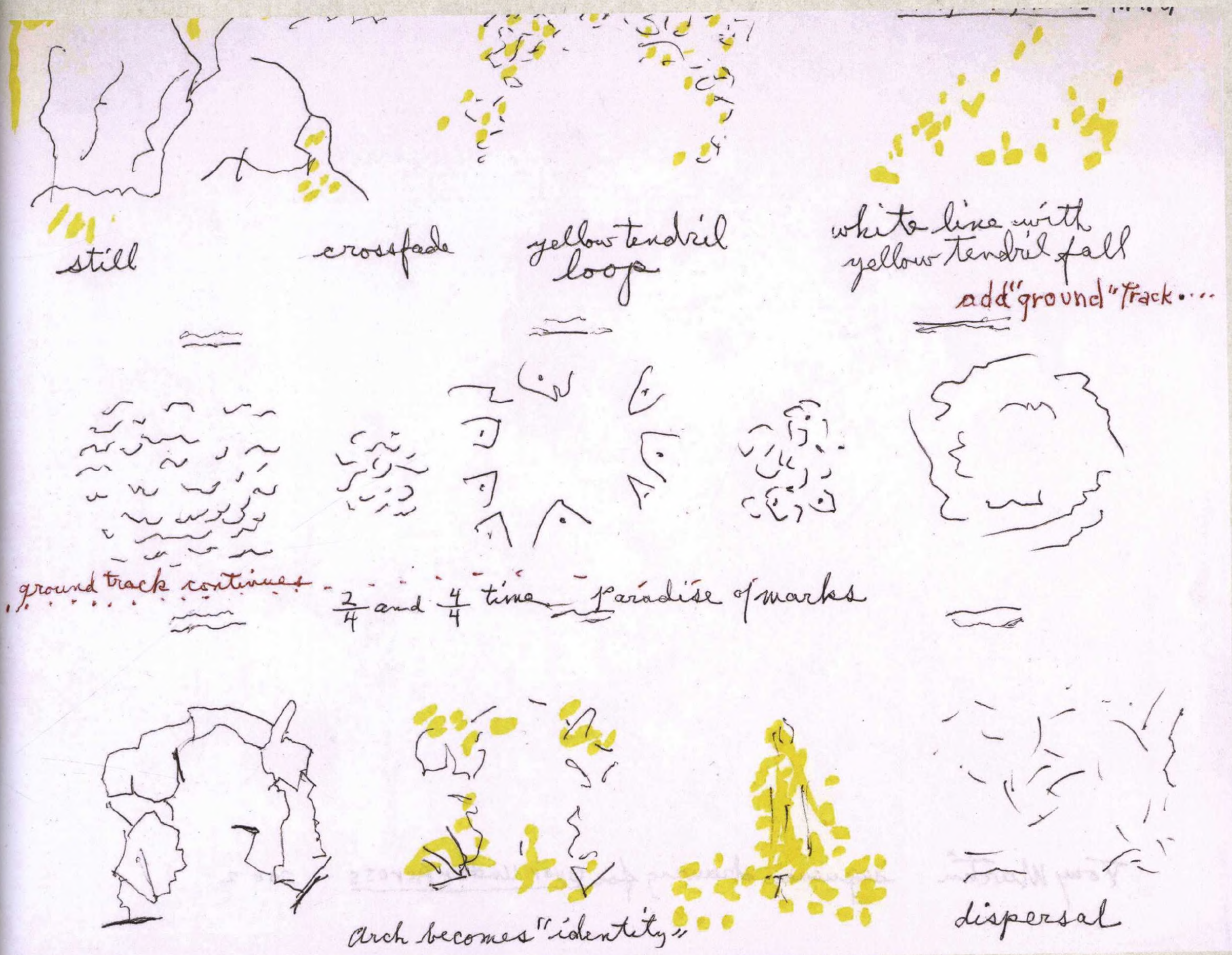
DIMITRIS MARONIDIS





Instrumentation 3 Ottavini, 3 Oboi, Tromba in D, Arpa, Celesta, Piano, Campanelli, 3 Piatti Sospesi)
Durata ca. 5'
Explanations : The conductor has also the role of the composer of this piece. He defines the density, the intensity and also the spatial movement of the overall sound. Each musician improvises on a single free motif according to the conductor signals. The orchestra is the musical instrument and the conductor is in some way the performer. Many rehearsals may be required before the concert as for the orchestra and the conductor to establish a mutual and fast communication. All improvised phrases should return in an F#. At the end of the piece, a full range C major Chord sounds in a *fff* posssibile dynamic that slowly fades out. The duration of that last chord should be exactly 20". When the sound dies out completely, the orchestra stays still for approximately 15". The score is supposed to have an psychological effect on musicians. The first section of the piece should resemble a crystalline sonic world with spectral development, while the second part (major chord) should sound as a solid sound mass denoting the end of the piece.

Dimitris Maronidis; *Constellation*. For 3 ottavini, 3 oboe, trumpet in D, harp, celesta, piano, bell, and 3 suspended plates. Used by permission of Dimitris Maronidis, © 2002.



Tony Martin; *Over, Under, Across*. Visual composition for combined figural and abstract video and computer-generated imagery. Used by permission of Tony Martin, © 2007.

Following page: Tony Martin; *Light Marks Converse*. Visual composition for computer-generated drawing-with-light-in-time video. Used by permission of Tony Martin, © 2007.

Over, Under, Across is a seven-minute visual composition for combined figural and abstract video and computer-generated imagery. First exhibited at Eyebeam, NYC, in 2002.

Light Marks Converse is a twelve-minute visual composition for computer-generated drawing-with-light-in-time, video projected, using software created by me with programmer Hunter Ochs. First performed at Redcat Theater, Performing Art Center, Los Angeles, in 2003 and for "Interpretations" Merkin Hall, NYC, in 2004.

slowly
f, ff, fff etc

leave X/2

BLUE

then
in air
↑
continuous
fade

bone language
long time →

blue + blk

then
2nd blue

12 min

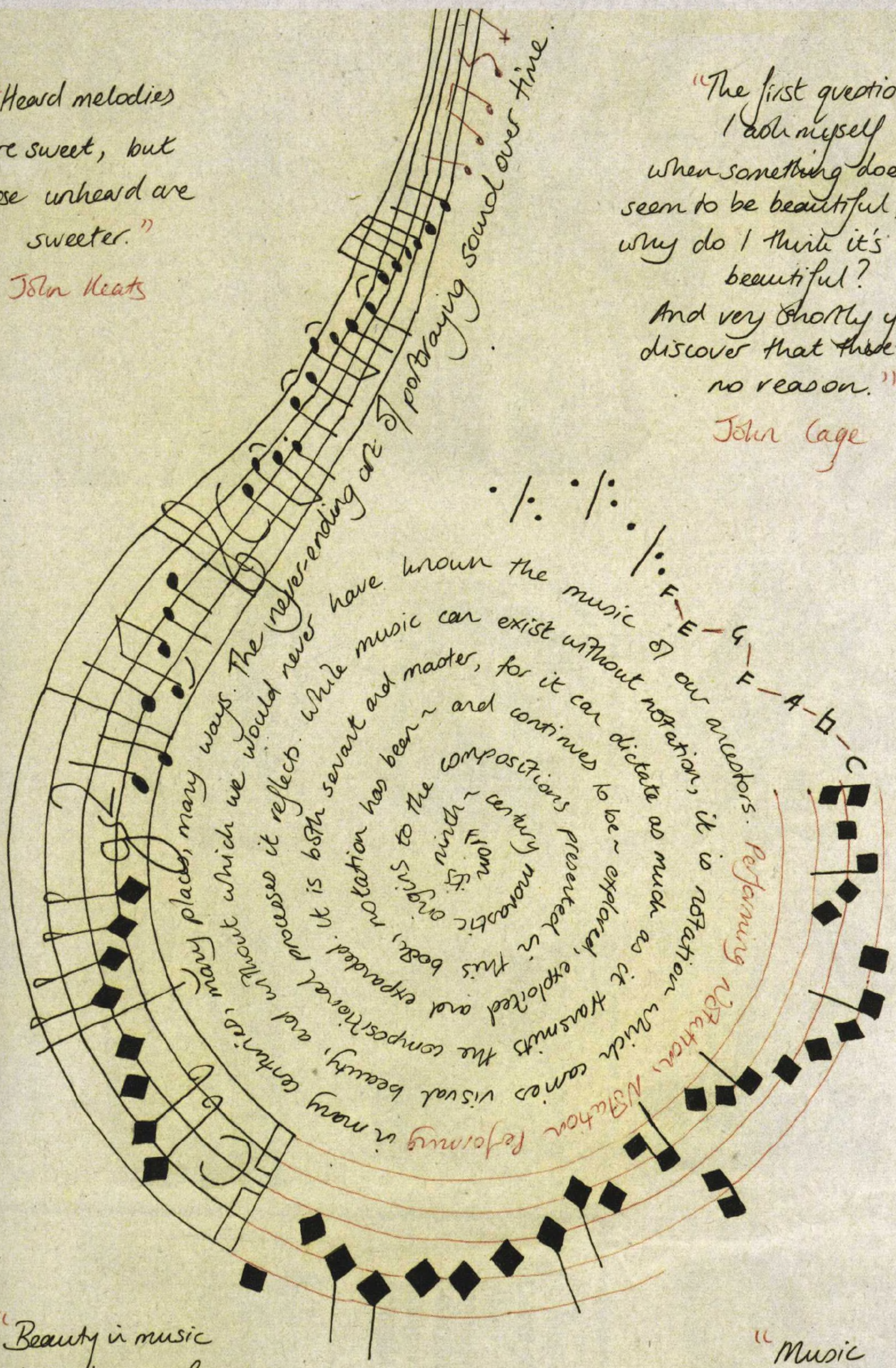
Tony Martin 11/03 Redcat L.A. Score Lightmarks Converse.

"Heard melodies
are sweet, but
those unheard are
sweeter."

John Keats

"The first question
I ask myself
when something doesn't
seem to be beautiful, is:
why do I think it's not
beautiful?
And very shortly you
discover that there is
no reason."

John Cage



"Beauty in music
is too often confused
with something that
lets the ears lie back
in an easy chair."

Charles Ives

"Music
in its most
general sense
encompasses in reality
practically everything."

Jacques de Liège

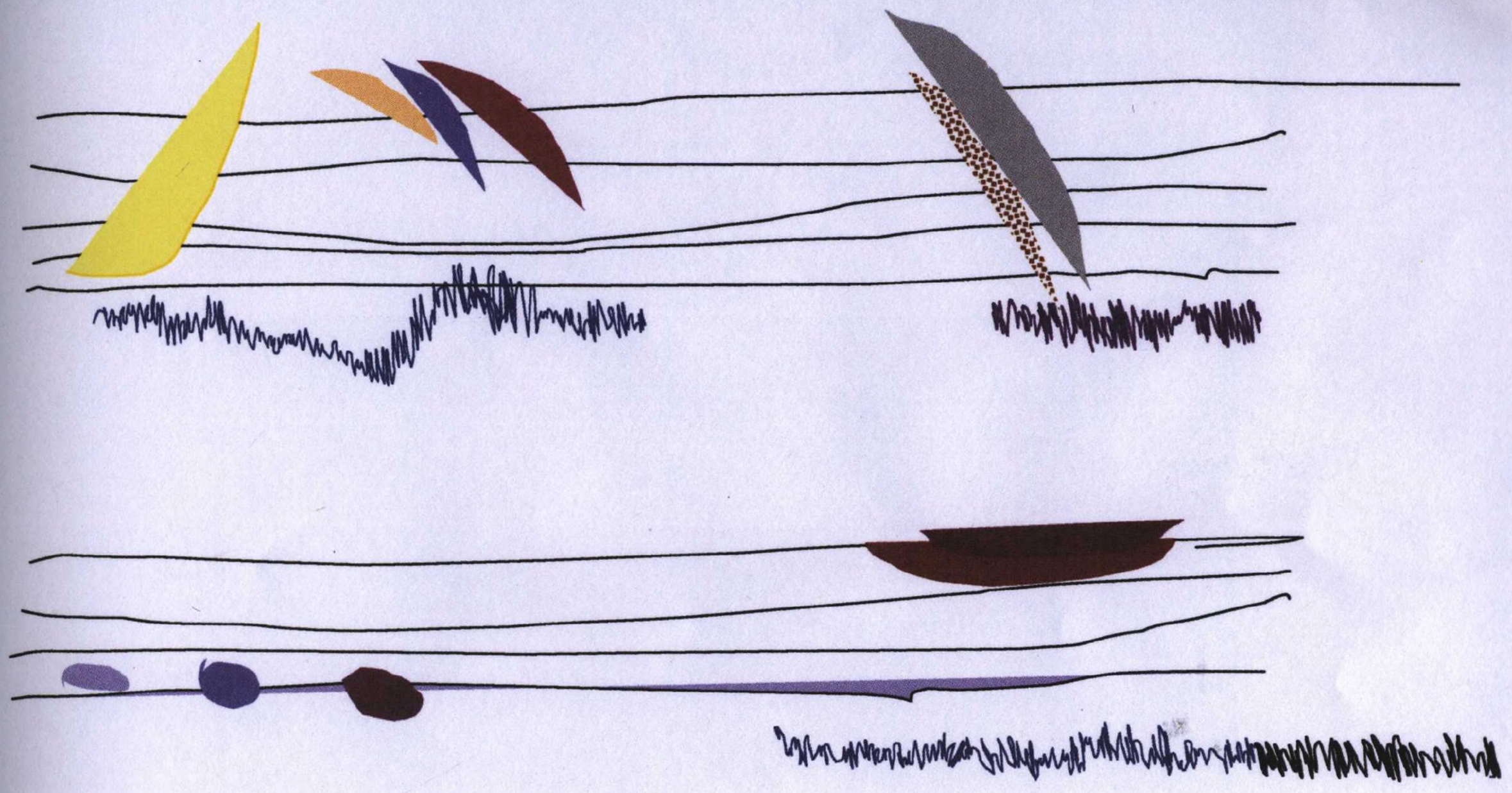
Kate Maxwell 2007

Kate Maxwell; *Performing Notation, Notation Performing*. Used by permission of Kate Maxwell, © 2007.

Cilla McQueen; *Picnic*. For violins, oboe, and bass guitar. Used by permission of Cilla McQueen, © 2006.

Picnic:

Two violins, the first smelling of roses, the second holding a sword.
The setting sun glints on the edge of the blade.
Both violins describe an arc: the first like lips, the second like a slice.
An enquiring sound upwardly inflected.
Two shades of meaning.
Three waves arrive on a shore.
Light limns the shapes of surging dolphins.
A fused pair with a degree of yellow; a smaller, finer leap above the surface; a combination of splash and plunge with a comet's tail of foam deep below as if it spun on rising.
Increasingly emphatic blends.
Blue overlays the rose of evening in a double descent over time to a firm halt followed by a period of silent inactivity.
The oboe warbles rich brown for the duration of three waves.
Its blue eye sheds a yellow and a red tear.
The sound develops a twist in the middle and unfolds in reverse similitude to its beginning on a distorted scale.
A yellow frond in a violet moon thrown like a ball.
A small brown island topped with green.
The bass guitar played in the manner of a double bass bowed.
Distortions modulated and augmented to background feedback thundersheet distantly.
The volume not great but elastic and contained.
One triangular crimson statement low in pitch and high in volume.
A purplish stroll for the oboe following a miniature elaboration echoing the umber.
A small reflection of the rose violin also in miniature, of short duration, nestling in the shoulder of the tune.
Several sharp violin calls of cerulean blue.
At first a single scoop, shortly followed by a traveling razor in the same flavor.
A brief warning from the blade, then a full sound ascending from four identical orange violins.
The violins are taken so high they partake in the section above.
For some time there is silence and closed eyes.
In this place there is no oboe and no wind, merely a vertical chord of trees, blue through violet underlined by indigo.
Red strings come and go in the center of the triple sound which at the blue extremity concedes a predominance of black.



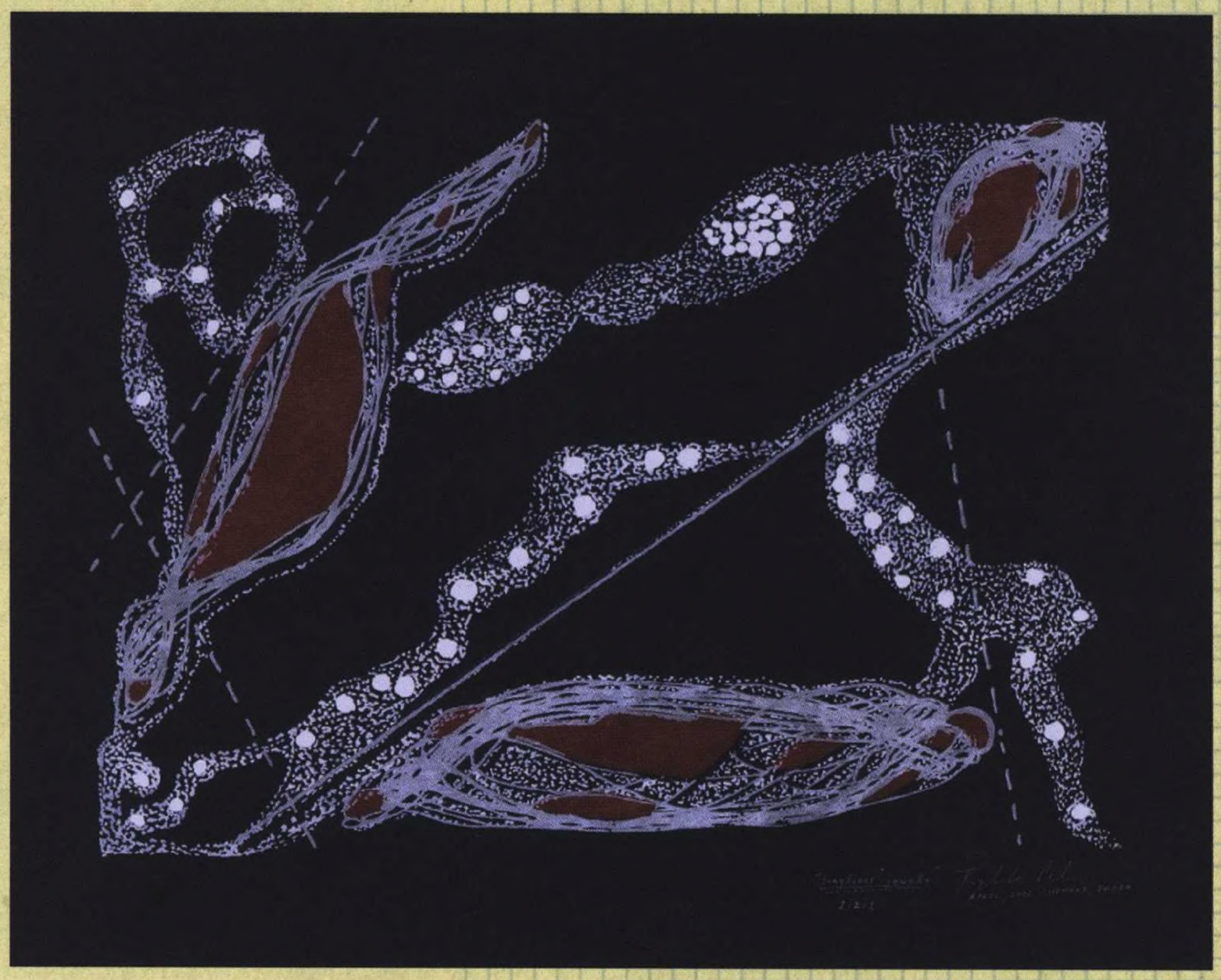
Score for Moths

Cilla McQueen; *Score for Moths*. For chamber ensemble. Used by permission of Cilla McQueen, © 2004.

Score For Moths and **Picnic:** The graphic notations *Score for Moths* and *Picnic* are of the nature of thought experiments. The viewer is invited to hear the music they portray, with or without the mediation of actual musical instruments. If the scores are to be performed live, the musicians may find the accompanying written notes useful guides for improvisation.

I wrote the poem *Thank You John Cage* on first encountering his work in 1980. He taught me the importance of space and silence as active components in both poetry and music.

RAJESH MEHTA



Rajesh Mehta; *Songlines Jewels*. For voice and cello. Used by permission of Rajesh Mehta, © 2006.

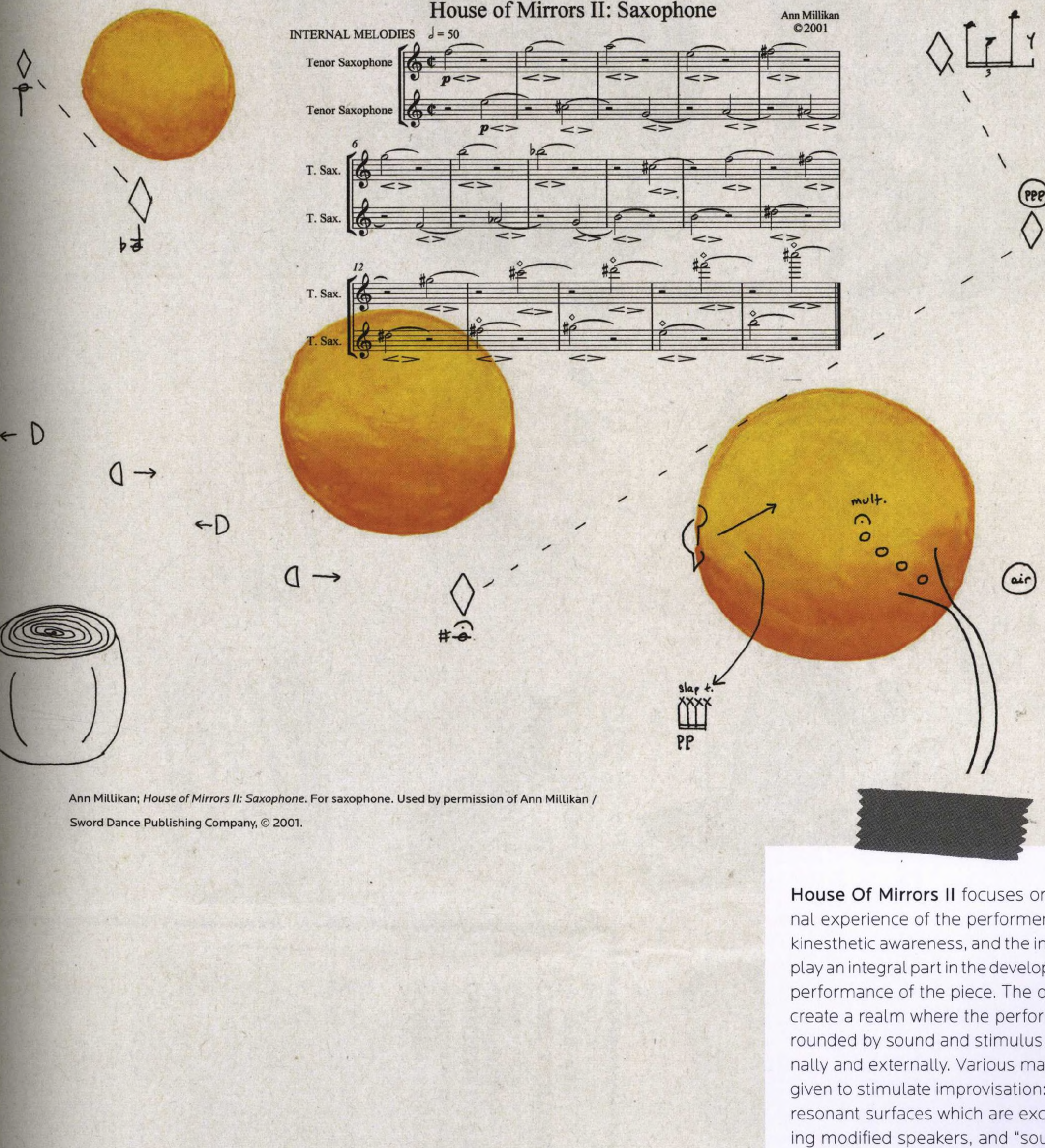
Songlines Jewels was made in 2006, while I was a Senior Performing and Creative Arts Fellow of the American Institute of Indian Studies residing in Chennai, India, for my project "Innovative Music Meetings: Creative Collaborations with Carnatic Music." This intensive research phase with musicians from this highly devotional and song-based compositional tradition had a decisive impact on my work, which became visually evident in these paintings. Although my relationship to Carnatic Music exceeds sixteen years, I realized that I was entering a new phase of visual representation of music that I could hear emerging from this narrative-rich tradition with its inexhaustible treasure chest of musical "jewels." However, the paintings also evoked other cultural associations that I was not consciously aware of while painting, especially the affinity to the unique culture of the Australian aboriginals, their dot paintings, and song cycles: "Songlines," with their built-in navigational tracking devices and an archetypal symbolic world through their concept of the "Dreamtime."

Through my own musical experiences, I have discovered that new notational approaches can act as bridges toward innovative music meetings—they are no longer confined to the Western contemporary New music communities but are tools for visually communicating important musical ideas from any world musical tradition to any other. Furthermore, given the diversity of cultural approaches to music making, symbolic representations of music through new notational forms can evoke archetypal images enlarging the platform for a broader musical-spiritual dialogue.

for Eric Barber

House of Mirrors II: Saxophone

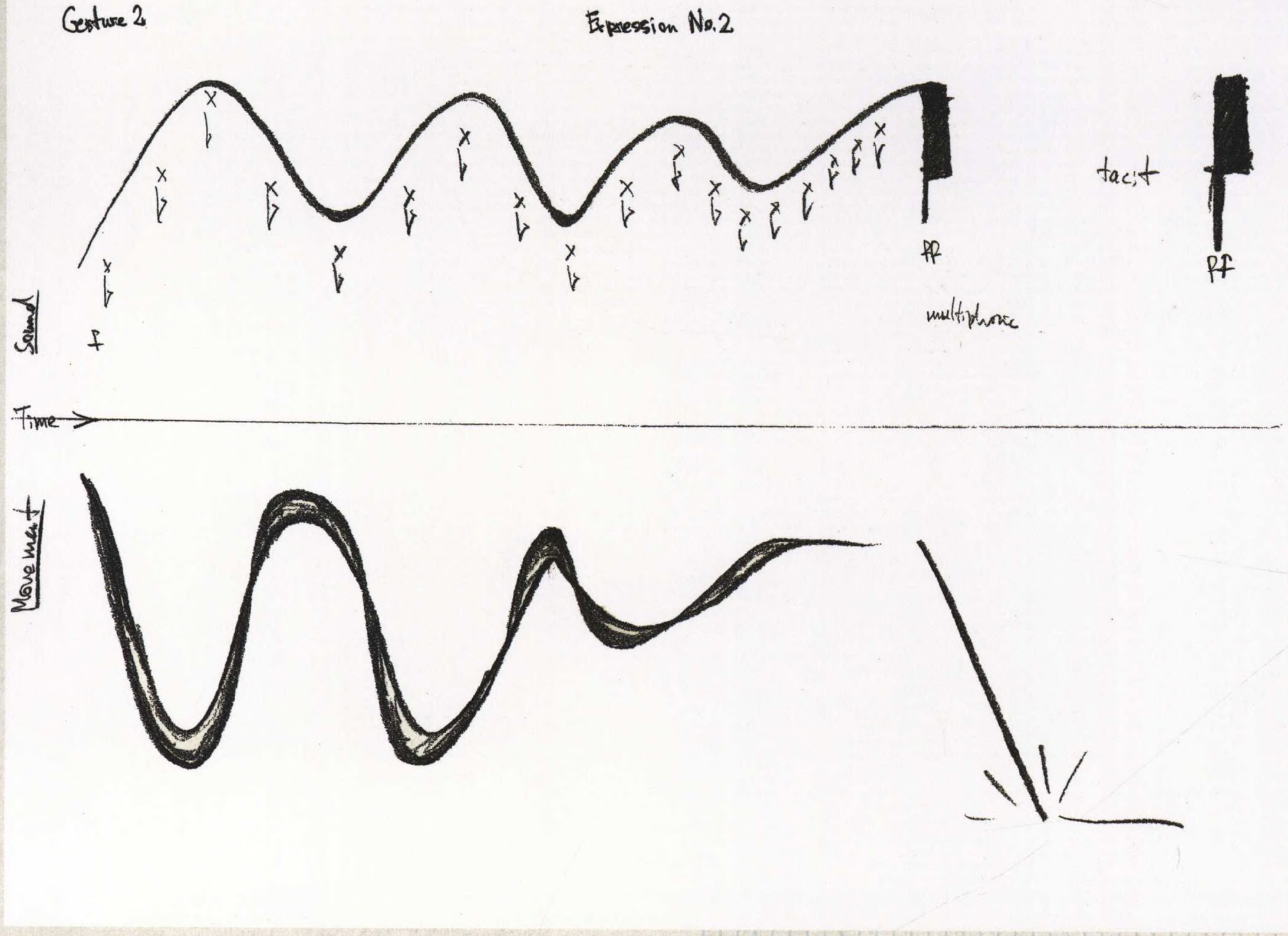
Ann Millikan
©2001



Ann Millikan; *House of Mirrors II: Saxophone*. For saxophone. Used by permission of Ann Millikan / Sword Dance Publishing Company, © 2001.

House Of Mirrors II focuses on the internal experience of the performer. Thought, kinesthetic awareness, and the inner ear all play an integral part in the development and performance of the piece. The object is to create a realm where the performer is surrounded by sound and stimulus both internally and externally. Various materials are given to stimulate improvisation: the score, resonant surfaces which are excited by using modified speakers, and "sound boxes" that are manipulated with the feet. House of Mirrors *II* opens up an exciting new form of theater, where the improviser can enter into another world and take on a character.

RENE MOGENSEN



Rene Mogensen; *Expressions No. 2*. For woodwind or different instrument ad lib and a dancer. Used by permission of Edition Samfundet, © 1997.

Expression No. 2: Sound/movement—movement/sound counterpoint. Two gestures are given, one on each page. The top half of each page shows a representation of a sound gesture. The bottom half of each page shows a representation of a movement gesture. These two parts suggest a counterpoint in sounds and movements. Counterpoint here meaning the sense of an apparent causal relationship between the sound and movement. The interpretation should begin with Gesture 1, immediately followed by Gesture 2. The alternate view image is for both sound and movement, but does not represent a time line.

**Four groups of performers playing
wine glasses in four different ar
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lit space gradually change
the chord by drinking
or filling the wine
glasses until
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**Four groups of performers playing
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choruses of wine glasses.

Smash all the glasses at the same time at the end !

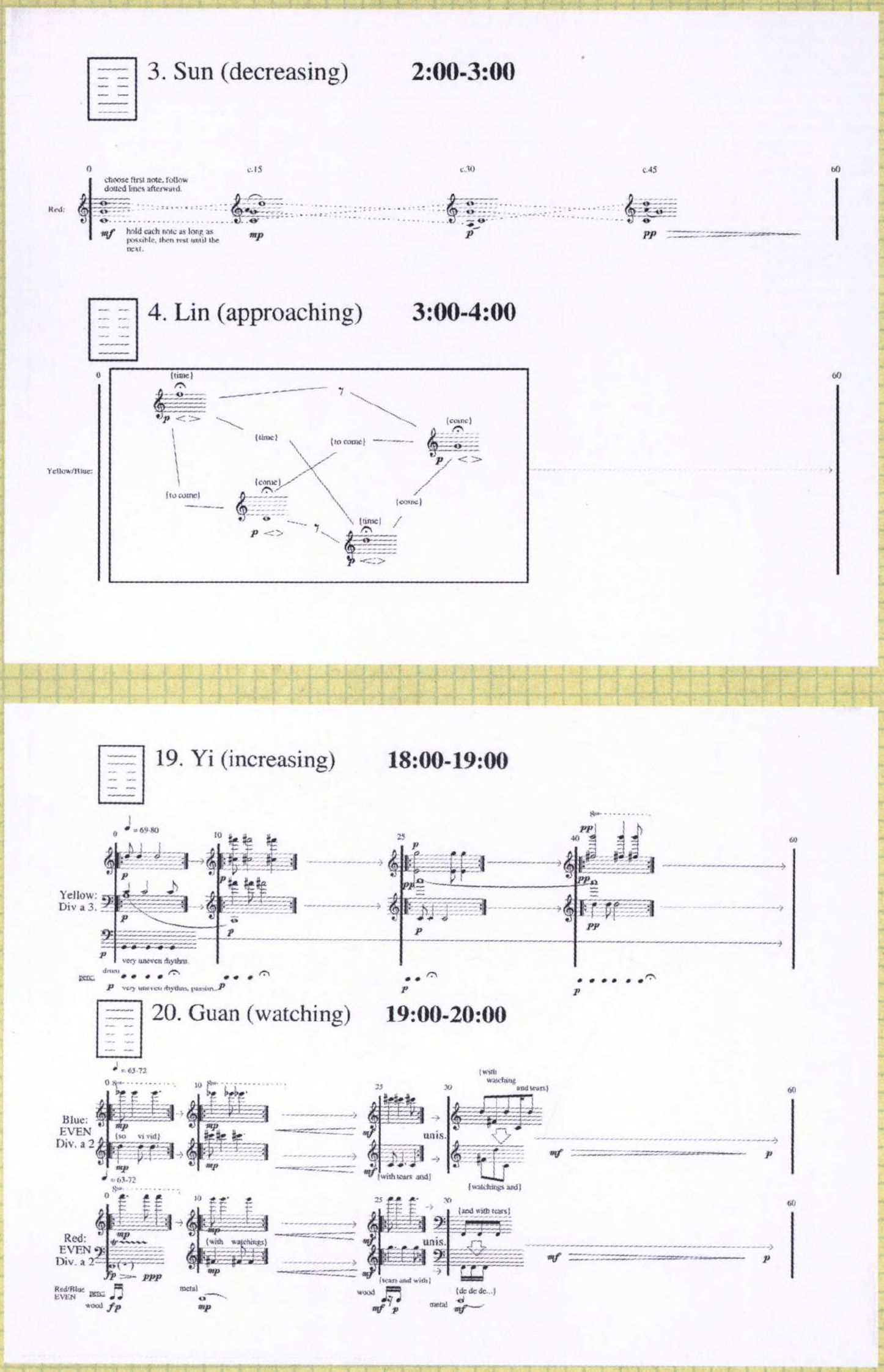
Stephen Montague; *Kristallnacht*. For four antiphonal choruses of wine glasses. Used by permission of Stephen Montague, © 1998.

Kristallnacht: On the night of November 10, 1938, Nazi thugs in cities across Germany smashed the windows of Jewish shop fronts and homes in an act of racial violence now known as "Kristallnacht,"—"the night of broken glass." This work was written on November 10, 1998, from the safety of another era, as a meditation on the 60th anniversary of this tragic event.

Kristallnacht is from a series of works I began in 1975 called "graphic/text" scores. Each work is a set of instructions telling, in words arranged in an analogous graphic layout, how the piece is to be arranged and performed.

Duration: unspecified.

ROBERT MORRIS



Robert Morris; *Oracle.* For singers and instrumentalists, including percussion.

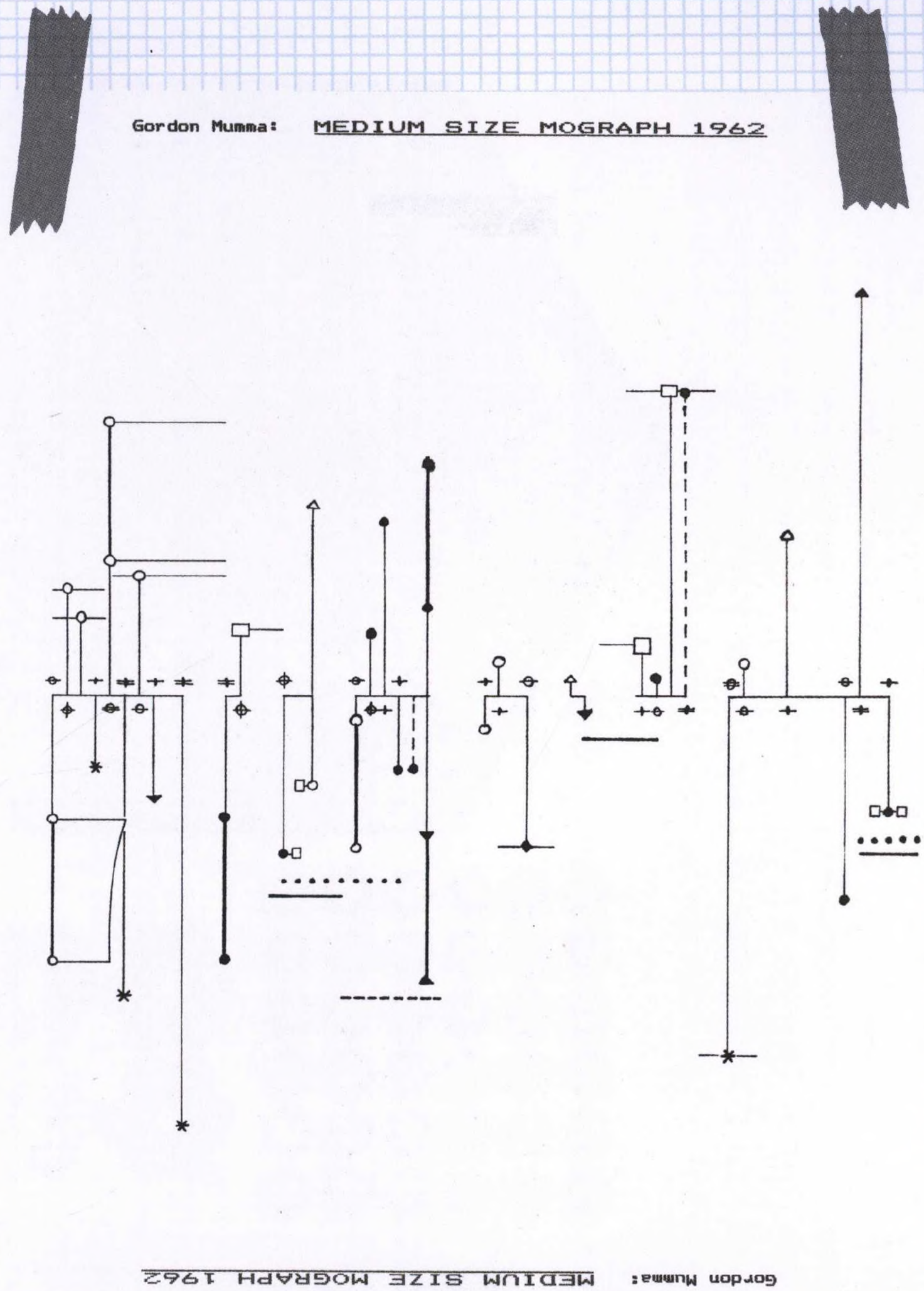
Used by permission of Robert Morris, © 2005.

Oracle is a sixty-four-minute composition for singers and instrumentalists including percussion. It is the third of my pieces designed to be played out of doors, in a park or in the country, woods, highlands, and the like.

While a performance of *Oracle* can be publicly announced, it can be performed by invitation only or without any announcement so the audience is simply the people who happen to be in and around the performance space.

Oracle uses a spatial notation similar to those used in other outdoor pieces, *Playing Outside*, *Coming Down to Earth*, and *SOUND/PATH/FIELD*. The piece is divided into 64 sections, each lasting one minute. Sections are either 1) undivided with the players using the spacing of events on the page to determine timing or 2) divided into divisions of time that are integer multiples of a five-second interval.

The structure of *Oracle* is based on the *I-Ching*, one of the Chinese classic texts (compiled c. 1150 B.C.) in which sixty-four hexagrams are used to suggest appropriate actions in response to questions posed by the reader. Each hexagram is a collection of six lines that are either broken (- -) or unbroken (Ð). Each section of the piece has a header that gives the hexagram and name of the section and its beginning and ending time in minutes. As in the other outdoor pieces, a section is associated with a basic pitch and chord. Thus there is a sequence of 64 notes and chords that guides the music's progress.



Gordon Mumma; *MEDIUM SIZE MOGRAPH 1962*. For two pianos. Used by permission of Gordon Mumma / BMI, © 1962.

MEDIUM SIZE MOGRAPH 1962 is one of a series of MOGRAPHS—compositions for piano solo or various combinations of pianos. The first two words of each MOGRAPH title indicate the length or size of the composition. The title is a pun on the word "seismograph," and includes the year of the composition. The pun is relevant because the structure of each MOGRAPH was derived from the P-wave and S-wave patterns of earthquakes and underground nuclear explosions during the early 1960s.

For this *MEDIUM SIZE MOGRAPH 1962*, the notation is best described as a map of the choreography, and is read vertically. Unlike the traditional music notation that indicates specific pitch, register, duration, and dynamics, this choreographic notation is a map of the physical movement of the pianist's actions at the keyboard. Specific pitches are not indicated—only the general areas where the pianist articulates the keys of the piano keyboard. The central vertical line defines the left and right sides of the pianist's body.

Though the complete score of this *MEDIUM SIZE MOGRAPH 1962* is on four pages, the notation is also vertically symmetrical, so that the pages can also be performed upside down, thus resulting in eight pages of choreographic instructions. All of the notation details, such as the dynamic markings, read the same upside down.

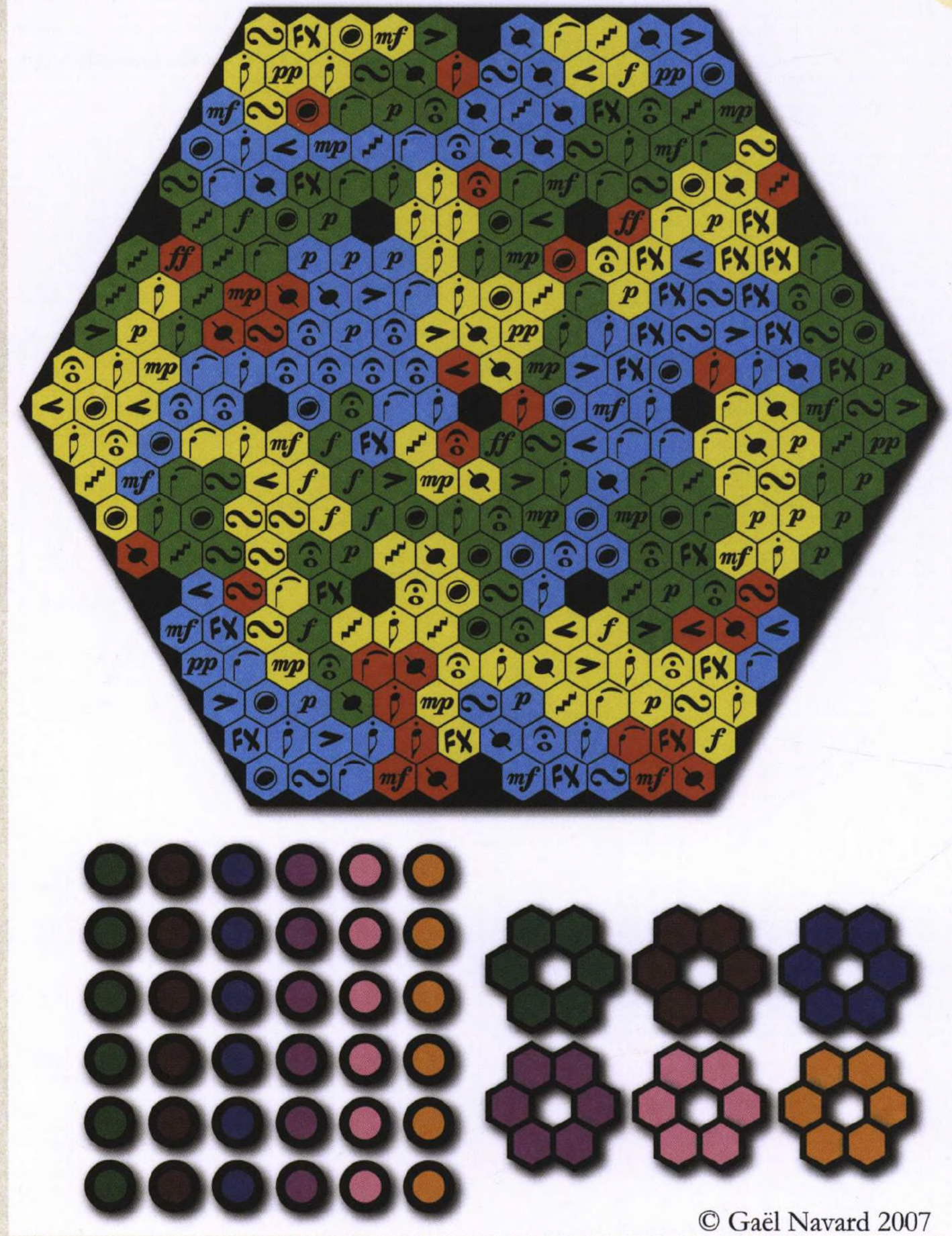
GAËL NAVARD

Hexagonie is an abstract place where there is a war of strategy without any apparent reason. The war is an abstraction for my generation. Although our Western countries are relentlessly involved in numerous conflicts around the world, we have contacts with the war only via stereotyped media representations and war games, which are far from the bloody reality of war.

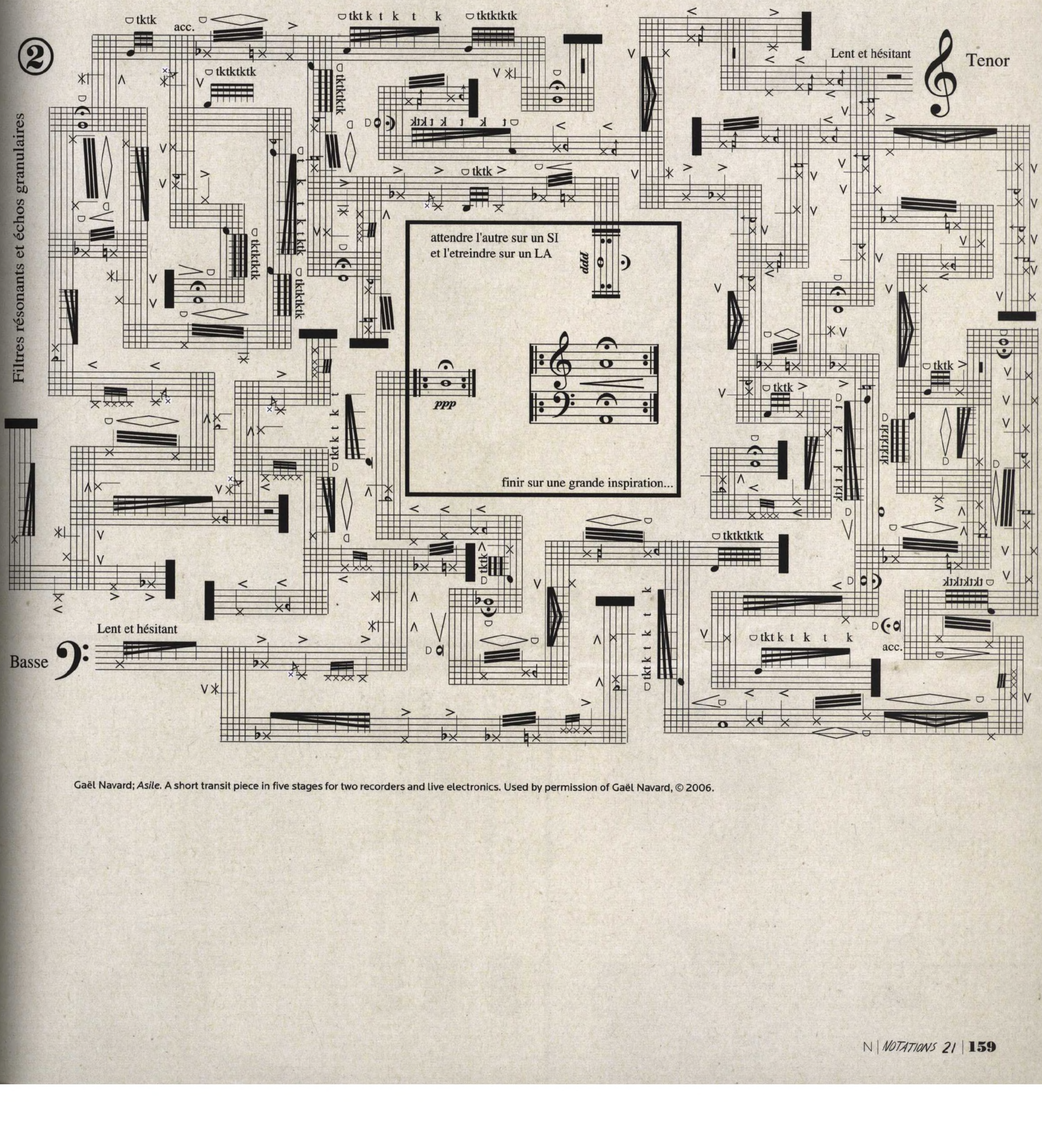
But the aim of this composition is mostly a research of new kinds of interactions between the score and the musicians, as a development of the open-work research carried out these past fifty years. The score looks like a board game on which some pawns representing players move while creating a panel of musical situations in constant evolution.

The score in itself is therefore mobile because it evolves in real-time with the game. Finally, even though this composition can be played in a traditional concert, it is mainly composed for the private sphere, as a new kind of "chamber music."

Game board and pieces

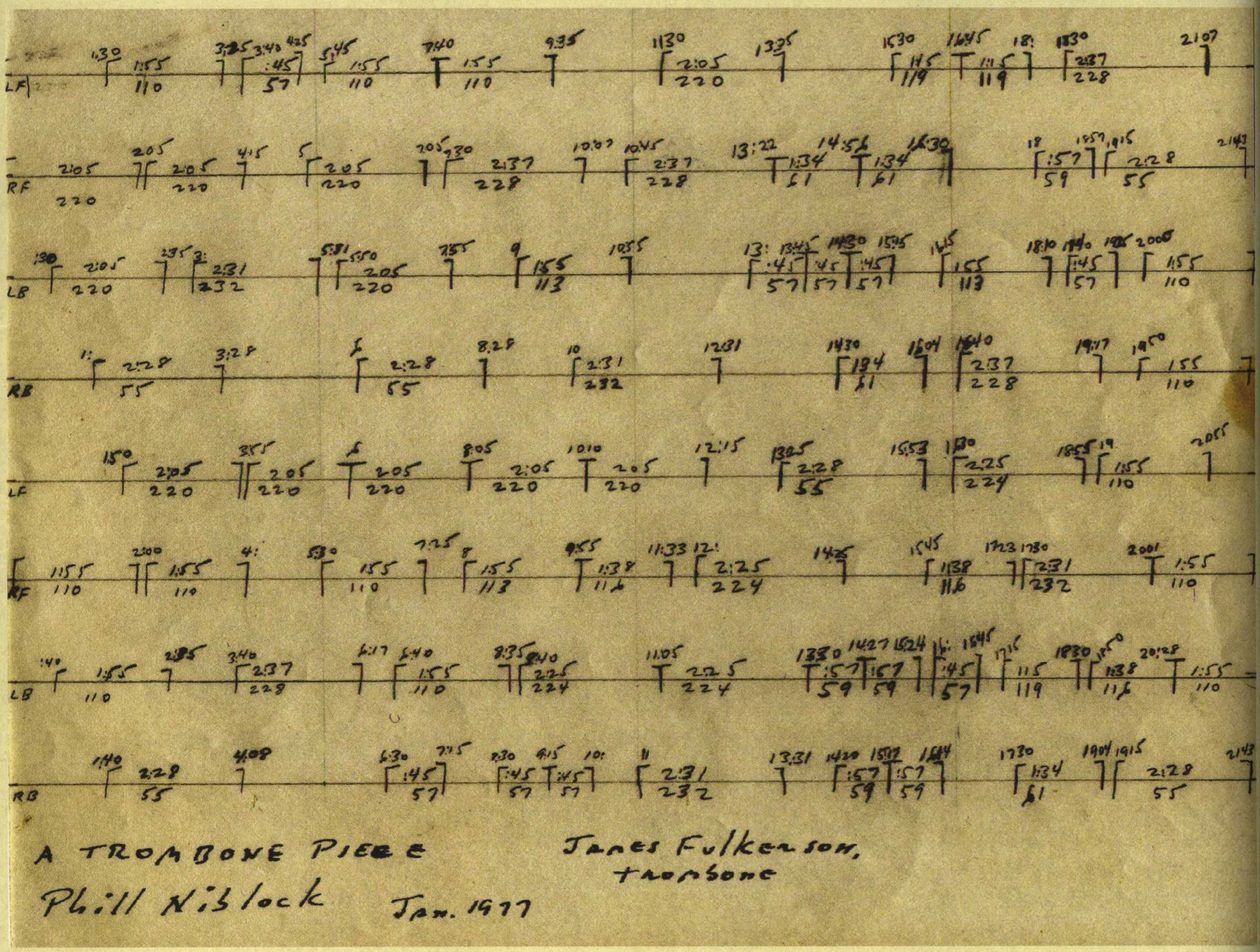


Gaël Navard; *Hexagonie*. Musical game for 2, 3, 4, or 6 players. Used by permission of Gaël Navard, © 2007.



Gaël Navard; *Asile*. A short transit piece in five stages for two recorders and live electronics. Used by permission of Gaël Navard, © 2006.

PHILL NIBLOCK



A TROMBONE PIECE

Phill Niblock Jan. 1977

James Fulkerson, trombone

Phill Niblock; *A Trombone Piece*. For trombone. Used by permission of Phil Niblock, © 1977.

A Trombone Piece: The score is my mix score, not that played by the musician, or by subsequent musicians playing with the recording of the piece. Each line represents a track of an 8-channel multitrack tape. The numbers below the line indicate the pitch in Hertz (i.e., 220 is the A below A 440). The numbers just above the line are the time of the event between the vertical lines. The numbers above the vertical lines are the cumulative time for that track.

A Trombone Piece was recorded at the Music Department, State University of New York at Albany, under the supervision of Joel Chadabe; Richard Lainhart and Richard Kelly, recording engineers, using Neumann microphones. Eight-channel dubbing at Experimental Intermedia Foundation. Mix from Teac 80 - 8 to Studer A80 with Stephen Cellum at Imago Sonorum.

Conversion to digital, editing, multitracking, and mixing in Sonic Solutions of the pieces Held Tones, Unmentionable Piece for Trombone and Sousaphone, A Trombone Piece and A Third Trombone, by Dan Evans Farkas at Sound One, New York.

From the original notes by Phill Niblock, to "Nothing to Look at, just a record"

The pieces are instrumental works, made on tape, performed as tape only, or tape with live music. The scores are the composer's mix scores. In performance the live musician plays with the tape, moving around the space, either matching tones on the tape or playing adjacent tones, creating shifting pools of beats and changed harmonics as he moves through the space and a duration of time.

The pieces are made in stages. First, the tones are selected. The musician is tuned during the recording session by calibrated sine waves, watching oscilloscope patterns. Numerous examples of each tone are recorded.

These tapes are edited (breathing spaces removed) into blocks of repetitions of each tone and then timed. The timed blocks are assigned to tracks and time slots of the eight tracks. In the score, each horizontal line represents a separate track and a duration of time. Figures above the brackets represent minutes and seconds of elapsed time: within the brackets, above the line is the duration of the event; below the line, the frequency of the tone (the pitch in Hertz). After dubbing up the eight tracks, the top four lines (tracks) of the score are mixed down to one channel, and the bottom four to the second channel of the final stereo mix. The music is architectural—the intent is to fill the space. It is non-frontal music, non proscenium, anti-stage, not about the ensemble sitting in front of the audience, not about a single sound source. At least four speaker systems are desirable, arrayed around the periphery of the room, saturating the total space, engaging the air.

The structure of the music comes from the reproduction of the tape (or CD).

The live musician is not a soloist with tape background, but the converse.

Excerpts from an article, "Phill Niblock, Composer's View," which appeared in the EMAS Newsletter, a publication of the Electroacoustic Music Association of Great Britain, July 1981.

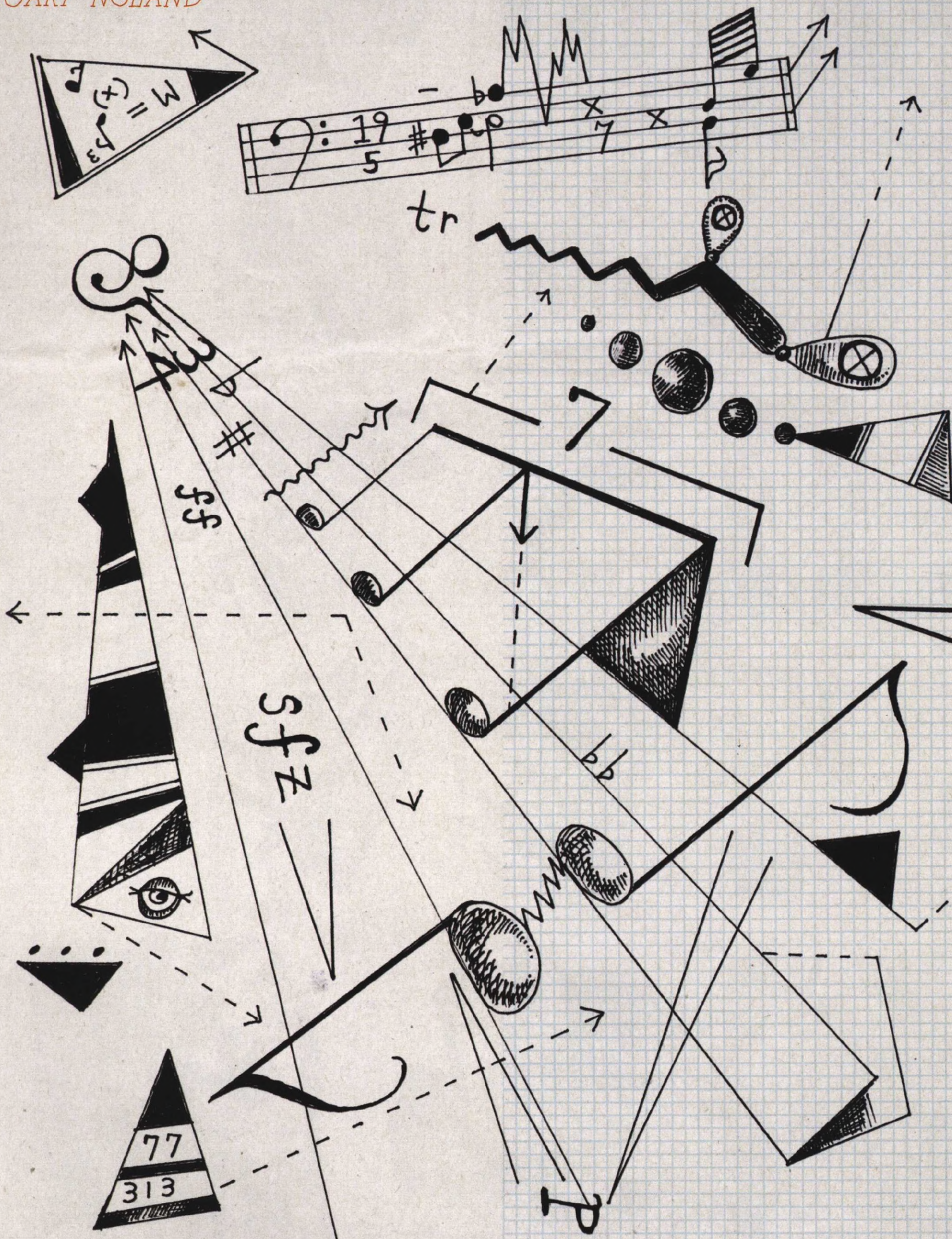
For me, the film and music of Phill Niblock have always been remarkable for their clarity of intention, the quality of their realization and their performance, and their unrelenting insistence.

I like *A Trombone Piece*, but Phill's work for the contrabassoon and contrabass, once described as the sound of two Mack trucks mating, is on my list of pieces which I wished I had composed. The variety of sonic textures in Phill's sound world are such that one feels as though he/she is inhabiting a three dimensional sound sculpture—a sonic architecture. It comes at you from all sides.

A Trombone Piece is built upon a single pitch, A , played over three octaves, and yet as a theater technician in New Zealand said, "You know it seems like you are just playing the same note over and over again, but you're not. There are these rivers of sound which are quite high up—not the notes you are playing—which are fascinating." This is not a repetitive music, is not hypnotic music, because Phill is continually breaking up the sound field. It's impossible to become hypnotized by these rivers of sound.

A Trombone Piece is built upon an acoustic phenomenon known as "beats" or sum and difference tones. The combination of two notes produces two additional pitches that are the sum of the frequencies of both notes and the difference between them. The summation tone is often not perceivable because the original sounds are too loud but the difference tones can be felt as perceptible pulse or beats. Ordinarily difference tones are eliminated in the act of "tuning up." The deliberate production of these sum and difference tones is what creates the tactile quality in Phill's music.

GARY NOLAND



Gary Noland; From *Sixty Lurid Albumblatts*. Used by permission of Gary Noland, © 1974.

Gary Noland
3/21/74
PIG
DOHOB
Ихр(врач
Зед) Лопх

Gary Noland

Notes for Sixty Lurid Albumblatts

The pieces contained in this volume are "pictographically" notated and may be interpreted by any number of players, with no limitations as to the types of instruments employed. Although the composer would prefer the interpreters of the score to be imaginative musicians with cultivated tastes and a penchant for free improvisation, no stylistic or aesthetic biases are indicated. The only "rule" set forth by the composer is that the players respond musically to the images. There are no durational restrictions, nor is there any requirement that all sixty pieces be played in one sitting. Any number of these albumblatts may be programmed in whatever order one chooses.

Due to the lurid, grotesque, and disturbing nature of many of the images in this score, it is strongly advised that children under seventeen years of age be accompanied by adult guardians while performing this piece. The composer feels obliged to proclaim this caveat, notwithstanding that many of the images contained herein were rendered by him previous to his own seventeenth birthday. In fact, the earliest pictures in this volume date back to 1970, when the composer was a strapping young buck of thirteen. Suffice it to say, then, that even though Mr. Noland was once a neurotic and pimple-faced adolescent with fierce hormones and axes to grind, he appears of late to be quite "normal" and well adjusted.

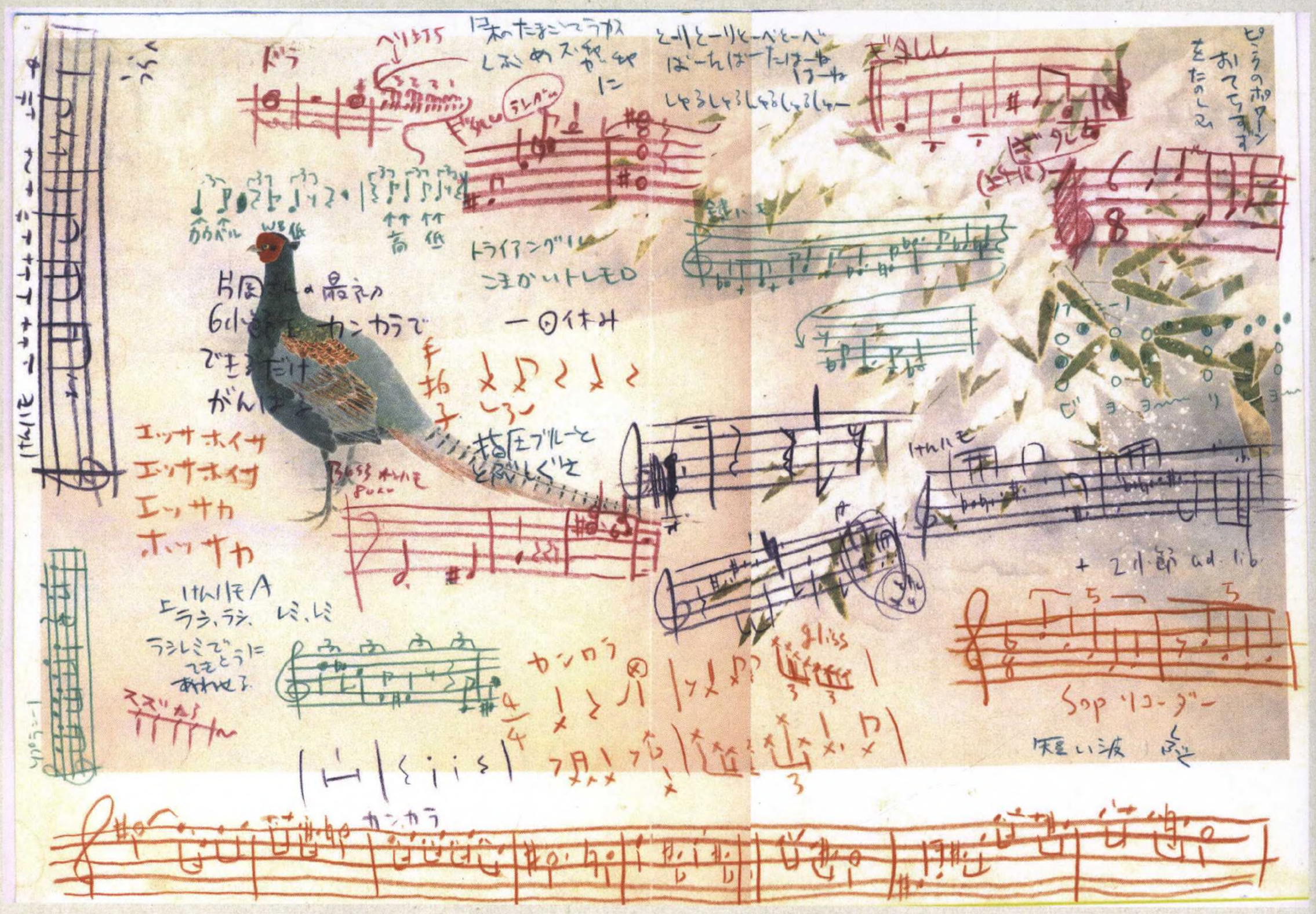
Notes on composing

How to continue to fulfill the profession of being a composer? Henri Poincare in his book *The Foundation of Science* (1908) wrote: "Everything appears to us in the form of figures." There is no question that the harmony of numbers and forms obtains a geometric elegance in the arts. We know that the arts in general manifest applied proportion of one sort or another and that there are connections amongst them. In music, time, space, structure are most preeminent. Guido d'Arezzo (c. 1030) in *Micrologus*, Chapter XV, "On Composing a Melody Properly," writes: "In music, first there are tones, then one, or several of these form a musical syllable; then one or several syllables constitute a module, and a module part of a musical sentence. Finally one or several modules form a phrase ending at a convenient place at which to breathe. The modules must always mutually balance each other either by the number of sounds or by the proportion of their durations, agreeing with mathematical ratios. Indeed, music always favors the varying of sound-patterns while respecting mathematical proportions. The composer uses modules in due proportions." I use the same to plan the proportions of all the deployed events of my compositions. I organize the patterns within well applied symmetries and asymmetries.

Spinoza wrote that time is to be measured only by imagination, human thinking is timeless. In further definition, he writes: "We compare time with the duration of other things which have a certain and determinate motion and this comparison we called time. Thus time is the sense of perception, an intuitive knowledge." So it is with the composition of a symphony. In my composition we see time and space entirely relying on the very moment of seeing and hearing the music. We touch time deeply in its only possible timeless way, names, (im)permanences. Thus, the perspective of Giotto di Bondone (1276-1337) pertains to no time—it is of that age, but it has no time. Thus, when the next work comes along for the orchestra, the ensemble, the solo instrument, time bears no conclusion and repetition can delay its asserted and given time performance.

As a composer notating the ringing of the brain with the responsibilities of structuring a new composition, I ask now how to set it down. It is an engineering plan. However, once the plan is achieved, the original impetus can be dissolved and no answer given for how it all began. The sensibility of the creative dive pushing for the grandiose originality can often not have any relying on how it happened. I ask myself, *How?* Music is the most highly developed, most intricately organized, most subtly constructed creation of the human mind, the result of centuries of work carried on with utmost devotion. We need for this accomplishment a solid training, logical and abundant imagination and in-

vention, an atrocious sense for originality, an accumulated musical experience, a developed sense for contrast, a caring and learned apprehension for the past. We need to live the creative experience with genuine knowledge and vision.



Makoto Nomura; *Oi Asitawa*. Used by permission by Makoto Nomura, © 2000.

Oi Asitawa and **Natural History Museum** are co-composed with Kana Hayashi, Yoshio Yamabe, Yuki Kataoka, and Yusuke Kataoka.

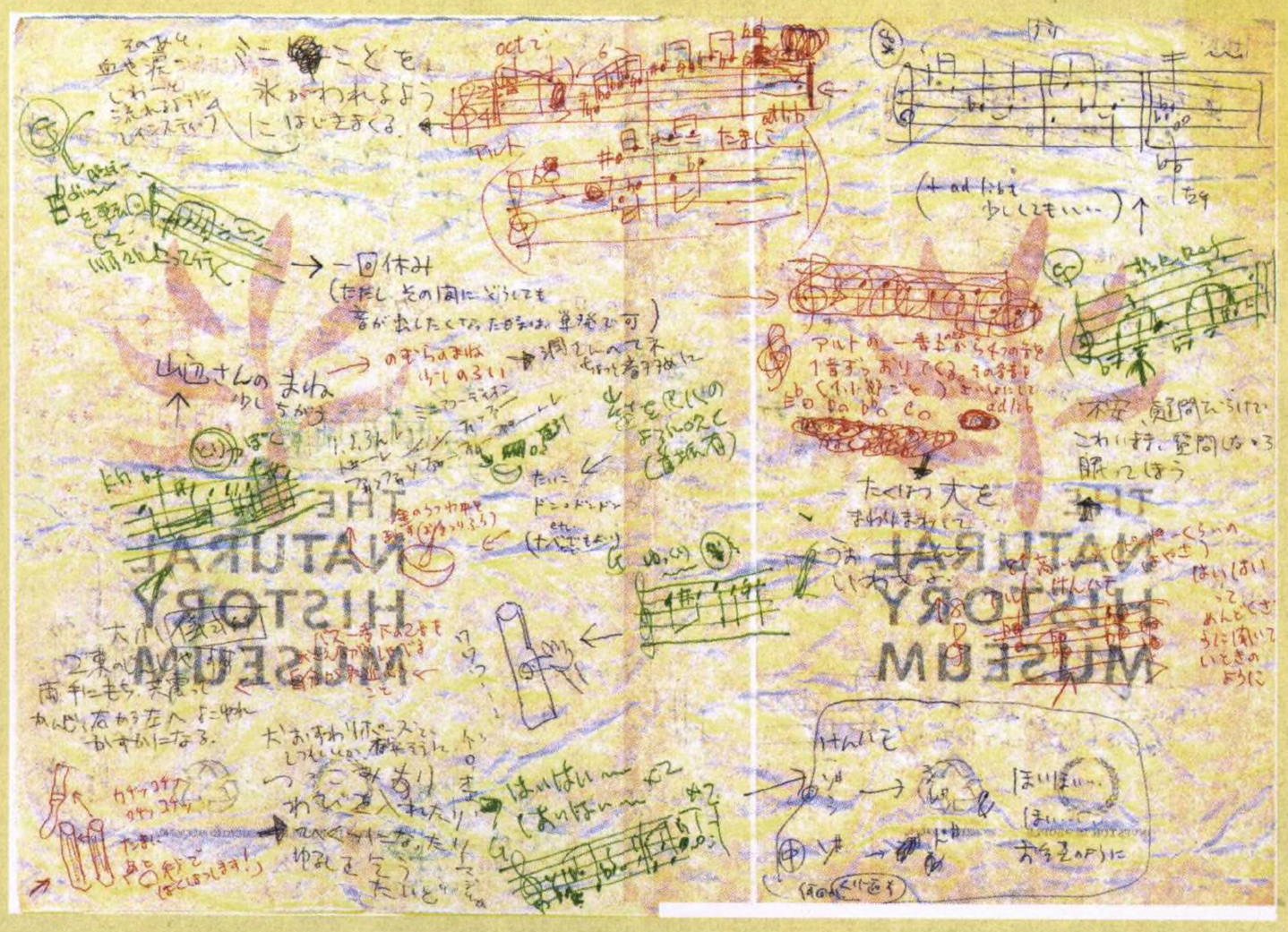
Shogi Composition is the method of collaborative composition that I invented. Each player uses one color, composes his/her own part, and writes it down in his/her own way. It should be thought of as a recipe for collaborative composition among various people with different musical backgrounds.

At least 2 players are required, although you can do it with 10 or more players theoretically. Each player is supposed to bring his/her musical instruments, sound objects, etc.

You have to prepare paper to write music down. Of course, you don't have to use traditional staffed paper because each player is allowed to write music down in his/her own way. You can use drawing paper, useless calendars, useless posters, etc. You also need colored pens/pencils. When you complete the composition, the paper will be the artistic picture as well as the musical score.

The first player starts to compose a short musical phrase on his/her own instrument(s). When s/he completes his/her phrase, s/he writes it down on the paper in his/her way with the colored pen/pencil. As soon as s/he writes it down, s/he hands the paper to the next player, starts to play it and keeps repeating it until his/her turn comes around again. Similarly the next player makes another musical phrase that goes well with the first phrase, writes it down in his/her own way next to the first phrase on the paper, hands the paper to his/her next player, and keeps repeating the phrase until his/her turn comes around again. Continue this process without any break until you can't find any space on the paper. When the paper is full, composition is finished. Don't stop the process until the paper is full.

Makoto Nomura; *Natural History Museum* (front). Used by permission by Makoto Nomura, © 1999.



Shogi Composition is the method of collaborative composition invented by Makoto Nomura. Each player uses one color, composes his/her own part, and writes it down in his/her own way.

Makoto Nomura; *Natural History Museum* (back). Used by permission by Makoto Nomura, © 1999.

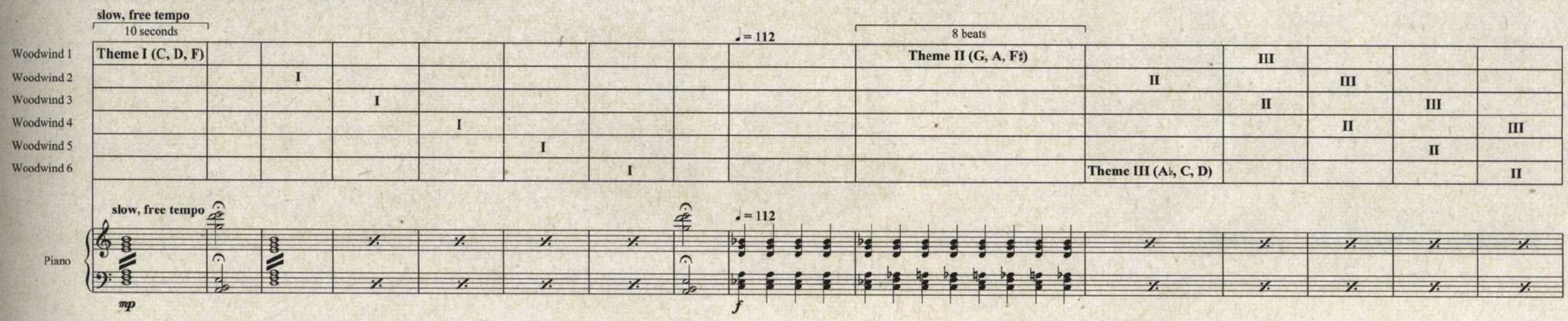
EOIN O'KEEFFE

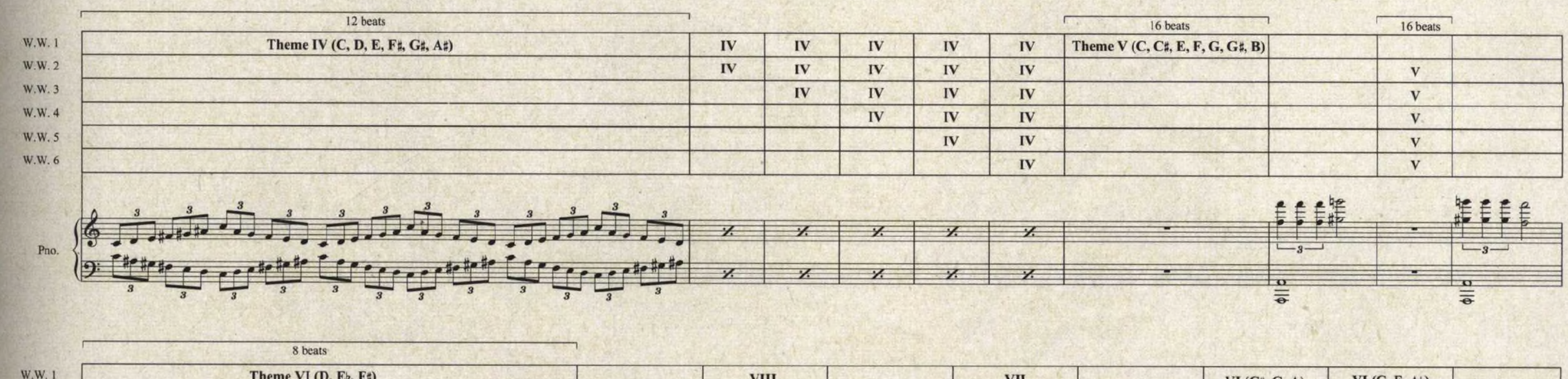
When 'Theme', followed by a Roman numeral appears, player should improvise a melody for the suggested duration, using only the designated notes (at any octave).

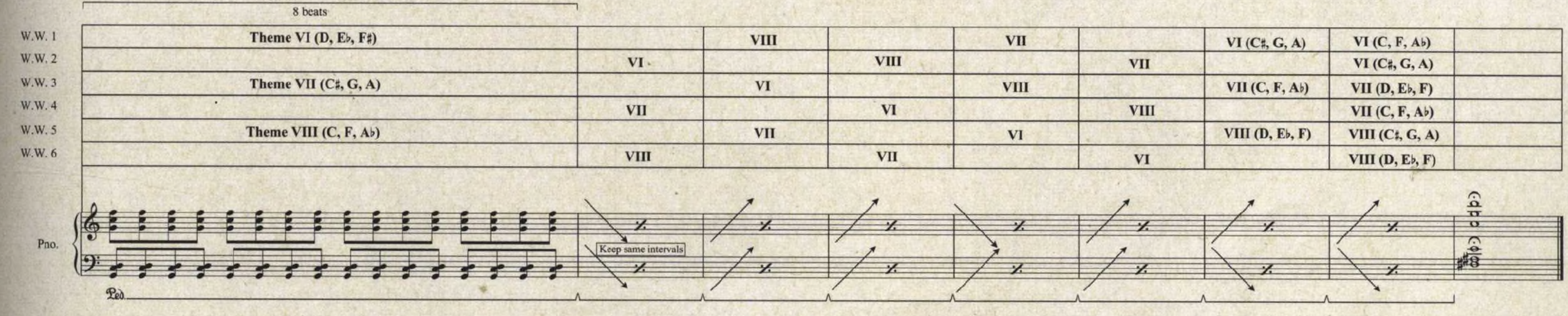
When a single Roman numeral appears, player should try and immitate from memory the melody provided previously by a player with the same Roman numeral, for the same duration and using the same notes, unless otherwise suggested (eg. the penultimate 2 bars)

Pass it on...

Chinese Whispers for 6 woodwind instruments and piano







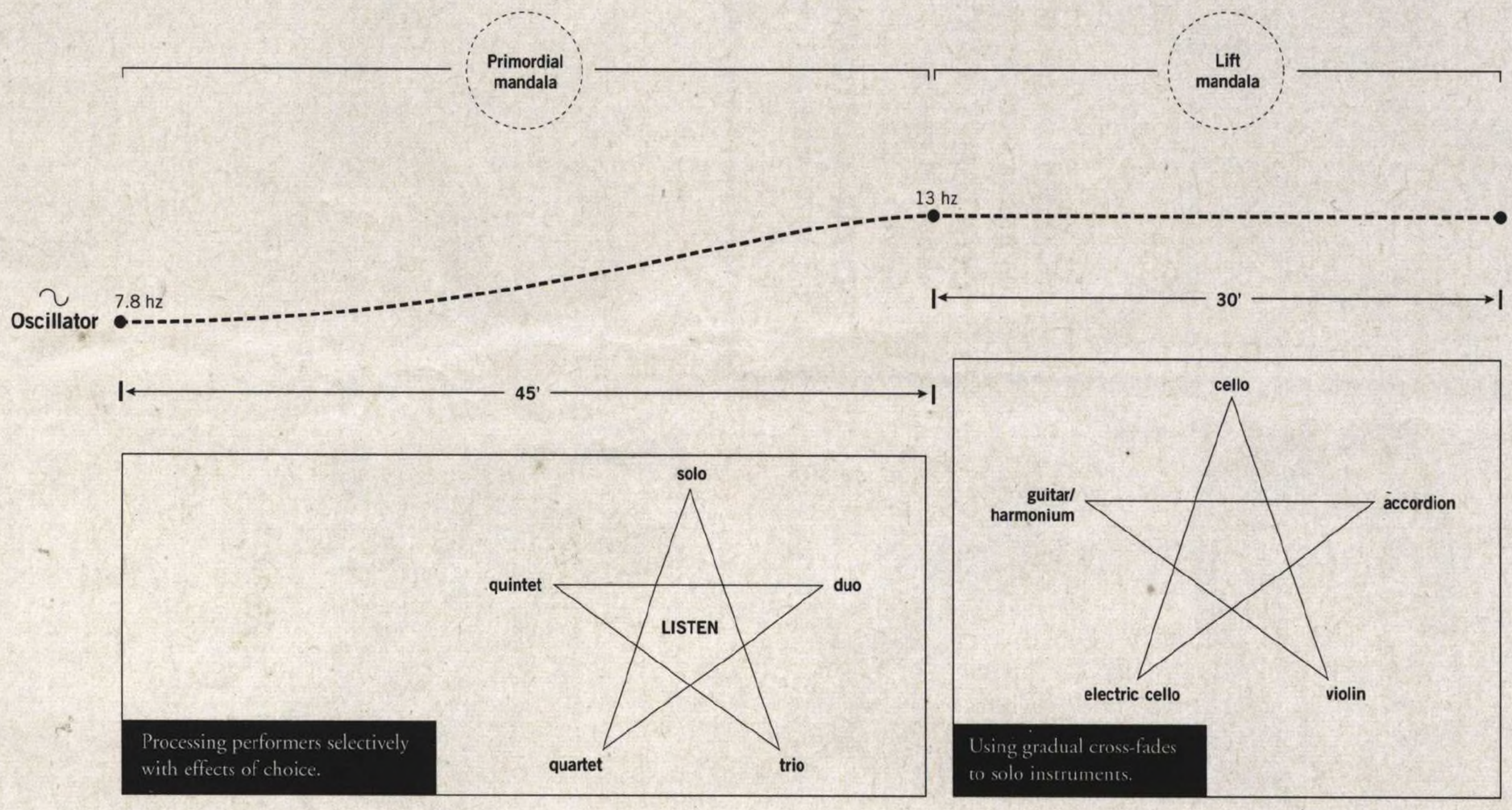
Eoin O'Keeffe; *Pass it on....* For six woodwind instruments and piano. Used by permission of Eoin O'Keeffe, © 2004.

Pass it on... was inspired by a combination of aleatoricism and the aural traditions of Irish music.

In Irish music, the tunes are learned aurally, and as a result they undoubtedly alter with time, and depending on the performer. This is a feature which I have used as the basis of the structure for *Pass it on...*, which can be played by any six woodwind instruments (although preferably similar ones), with a piano essentially keeping the pulse. Throughout the piece, players are asked to improvise a melody using designated notes only and for a set duration of time. The other players need to pay particular attention to these, as they will need to repeat them back from memory throughout the piece, singing the same notes unless otherwise specified. It is expected that the repeated melodies will change throughout the piece, making each performance unique. For best results, the piece should not be rehearsed, other than for the musicians to spend a short amount of time looking at the score and familiarizing themselves with what is expected.

Primordial / Lift

Pauline Oliveros
March 5, 1998



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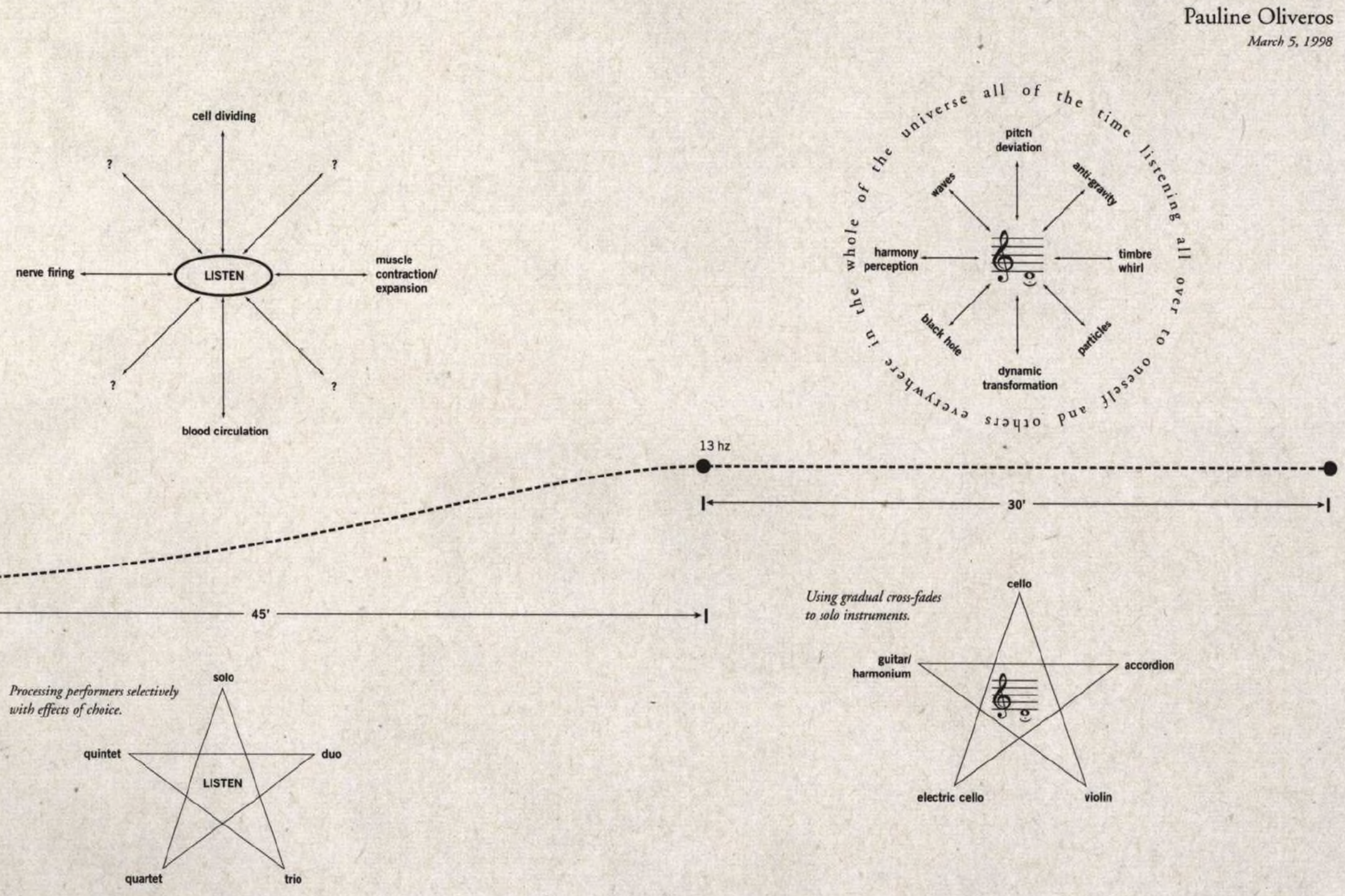
Primordial / Lift

Pauline Oliveros
March 5, 1998



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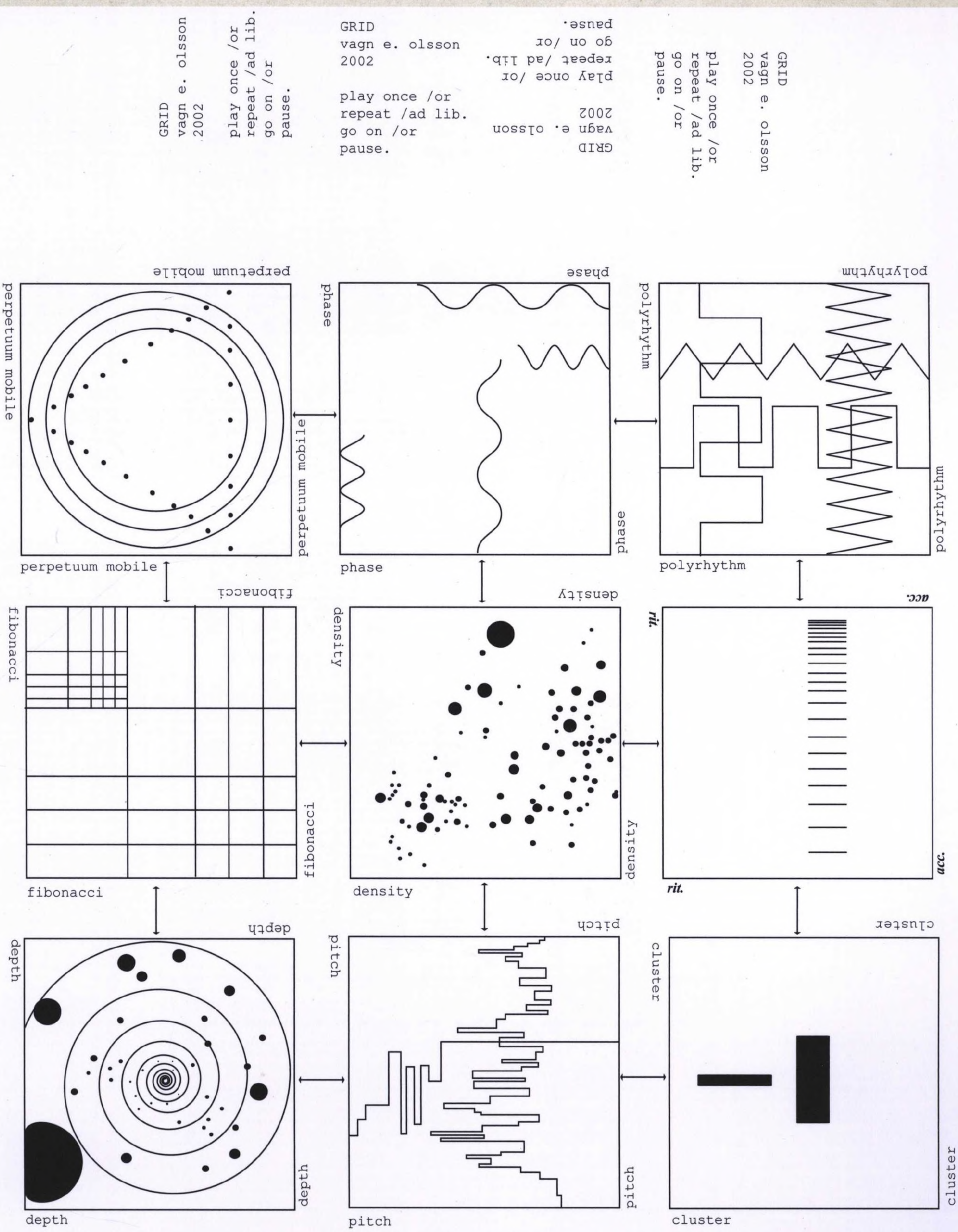
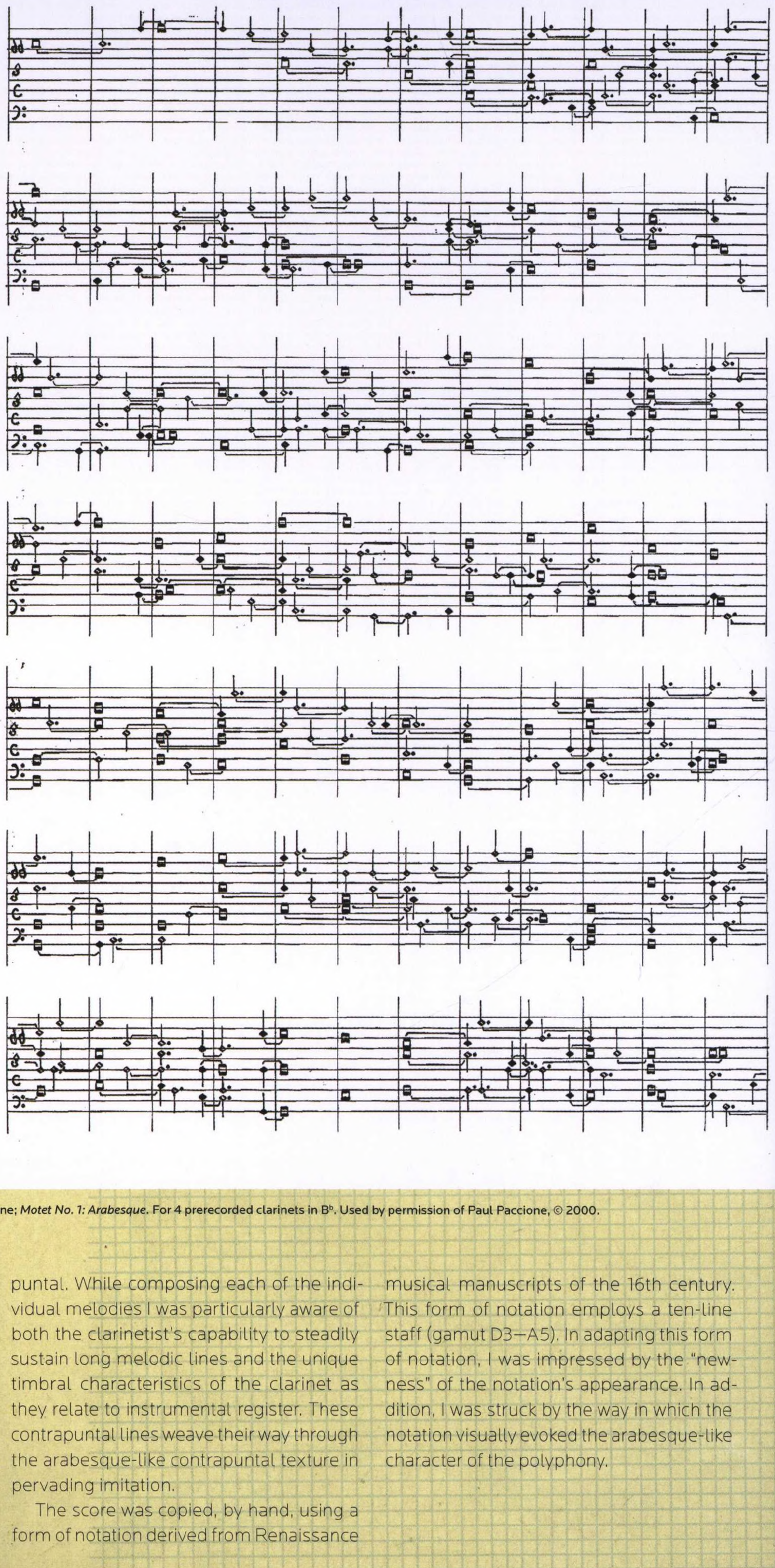
Pauline Oliveros; *Primordial / Lift*. For accordion, electric violin, cello, electric cello, toy piano, ring modulator, harmonium, low frequency oscillator, voices, and electronics. Used by permission of Deep Listening Publications, © 1998.



Vagn E. Olsson; *Grid*. For variable instrumentation. Used by permission of Vagn E. Olsson / Edition Samfundet, © 2002.

Grid: Every section/square in the compositions can be rearranged and played in any order whatsoever.

PAUL PACCIONE

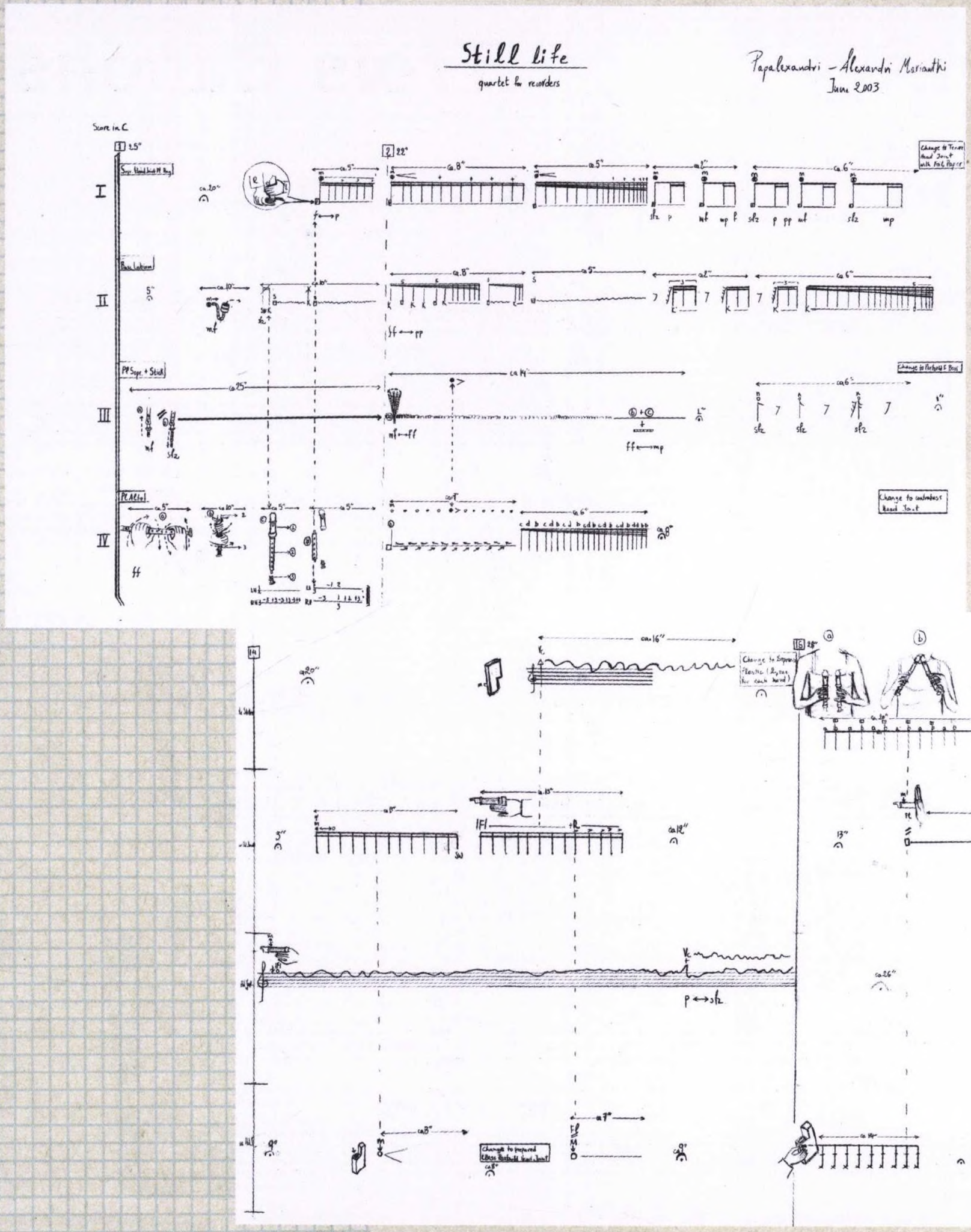


Paul Paccione; *Motet No. 1: Arabesque*. For 4 prerecorded clarinets in B♭. Used by permission of Paul Paccione, © 2000.

Motet No. 1: Arabesque is the first in a set of three works composed for clarinetist, Molly Paccione. I began the compositional process by recording the clarinetist playing individual solo melodic lines. After recording each of the individual lines, I combined and interwove them in the recording studio—resulting in three individual electroacoustic compositions.

In true motet style, the musical texture of each individual motet is highly contrapuntal. While composing each of the individual melodies I was particularly aware of both the clarinetist's capability to steadily sustain long melodic lines and the unique timbral characteristics of the clarinet as they relate to instrumental register. These contrapuntal lines weave their way through the arabesque-like contrapuntal texture in pervading imitation.

The score was copied, by hand, using a form of notation derived from Renaissance musical manuscripts of the 16th century. This form of notation employs a ten-line staff (gamut D3—A5). In adapting this form of notation, I was impressed by the "newness" of the notation's appearance. In addition, I was struck by the way in which the notation visually evoked the arabesque-like character of the polyphony.



Marianthi Papalexandri-Alexandri; *Still life*. For quartet of recorders. Used by permission of Marianthi Papalexandri-Alexandri, © 2003.

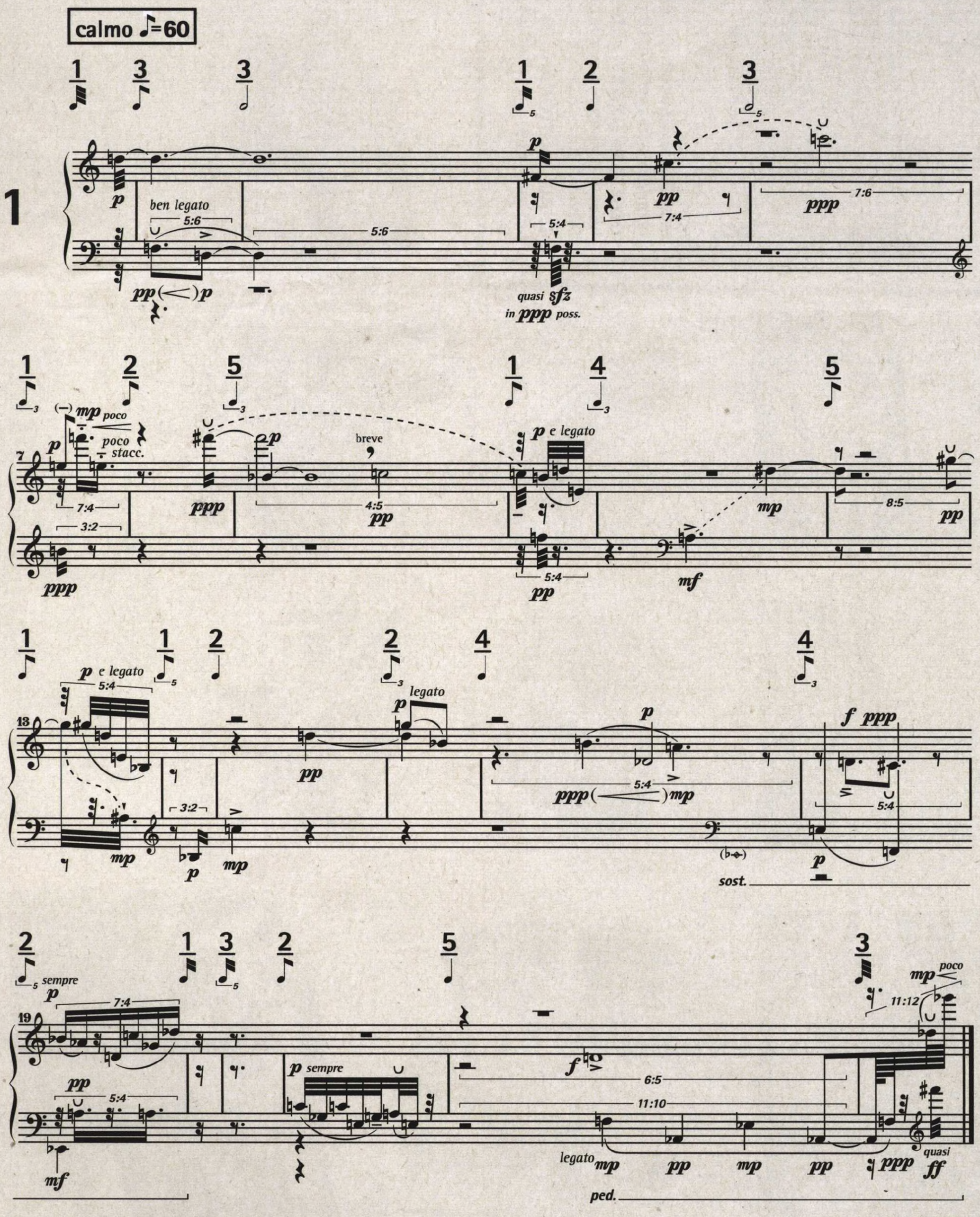
Still life: The development of my iconographic notation is the result of an exploration of the performer's behavior, bodily movement, and mental and physical effort while performing. This type of notation highlights the visual aspect of the performance while questioning the performer's techniques and habits. It aims to draw attention to the kinesthetic aspect of the performance while avoiding adopting any theatrical function. Instead, it focuses on alerting the habitual perceptions of the performer.

The idea behind *Still life* is to place performer and listener into a sonic world similar to the one that can be found in a concentration camp. *Still life* stretches the conventional image of the recorder by deconstructing and distorting the use and the image of the instrument. This leads to the development of innovative and meaningful formal principles followed by the attempt to redesign the whole sound spectrum of the instrument.

Still life explores moments of visual presence and sonic absence. A physical gesture is repeated firstly by producing sound, and gradually the repetition of the same gesture without sound results to the replacement of silence with visual activity. In other words, the performers stay silent, but they are still active. The aim is to replace sound with vision and to maintain the energy of the piece by keeping the performers in a state of constant physical movement.

Brice Pauset

Trois Canons



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Brice Pauset; *Trois Canons*. For solo piano. Used by permission of Éditions Henry Lemoine, Paris, © 1989.

Incastro di Mondi was written in December 2006 to be performed at iXem Festival in Rome, Italy.

The piece was based on a set of 2 improvising rules over which an electronic part has been developed:

Very short and loud notes, and expressive couples of notes. To those were added a third figure that's the same as the first one, but with slow/fast crescendo/diminuendo around the short loud note.

The first ensembles to play it were saxophone, flute, and percussion, but then it changed to something that could be more harmonically oriented.

All the score has been developed accordingly to the special characteristics of the players and their ways to react to electronic transformations.

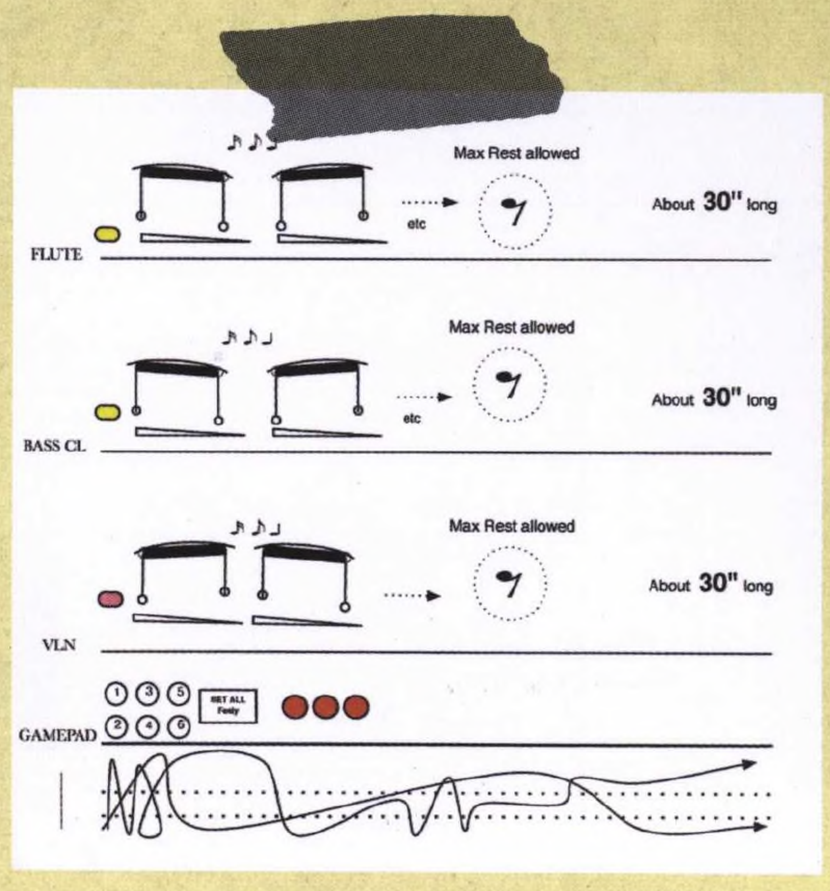
Many of the musical figures suggested come from direct experience with the improvising techniques of the players, but the score still mantains a generality, so it can be played by other performers.

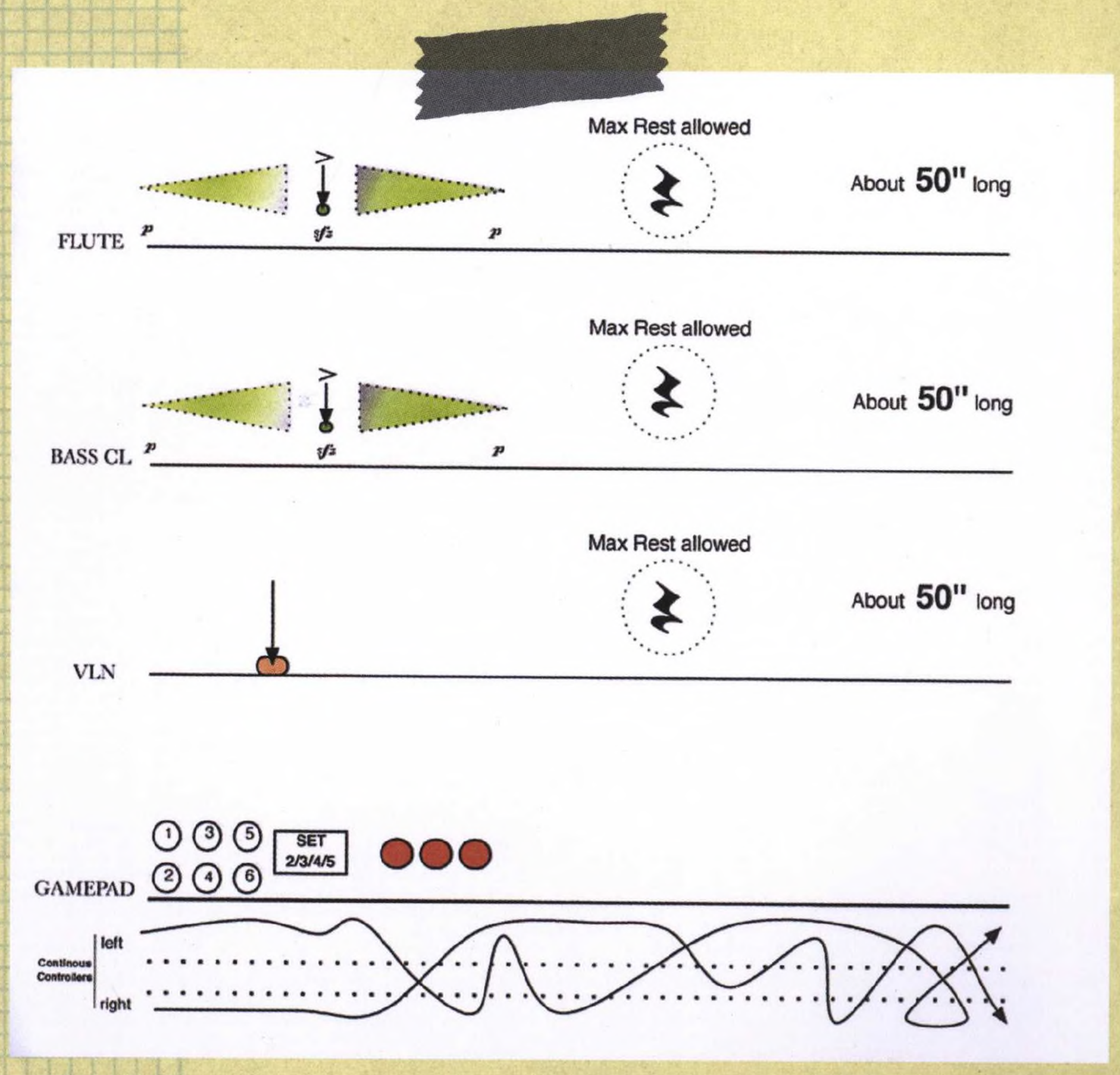
The electronic part is related to my personal research on timbre and music, and in a few words, it has been created for morphing acoustic sound in a way that can respect its strength, adding something hard but funny to the ears. Imagine that the best environment to play the piece is a large hall with very high volumes on 4 loudspeakers.

The interactive part is performed by a Gamepad player, which originally was invented for a dancer captured by a video. It can still be played in that way.

In concerts, I decided to perform on the Gamepad, as it was easier and faster to set-up.

Additionally, this score is called *Incastro di Mondi (Wedged Worlds)* because the personal worlds of the 3 players are mixed with electronics and with the gamepad player mind, who is changing electronic reactions to players' sounds, making the mix and the game more dense. It's a mental game, in a very loud situation, and has something related to the human reality of the mixing of cultures, developing interaction, even in an extreme context.

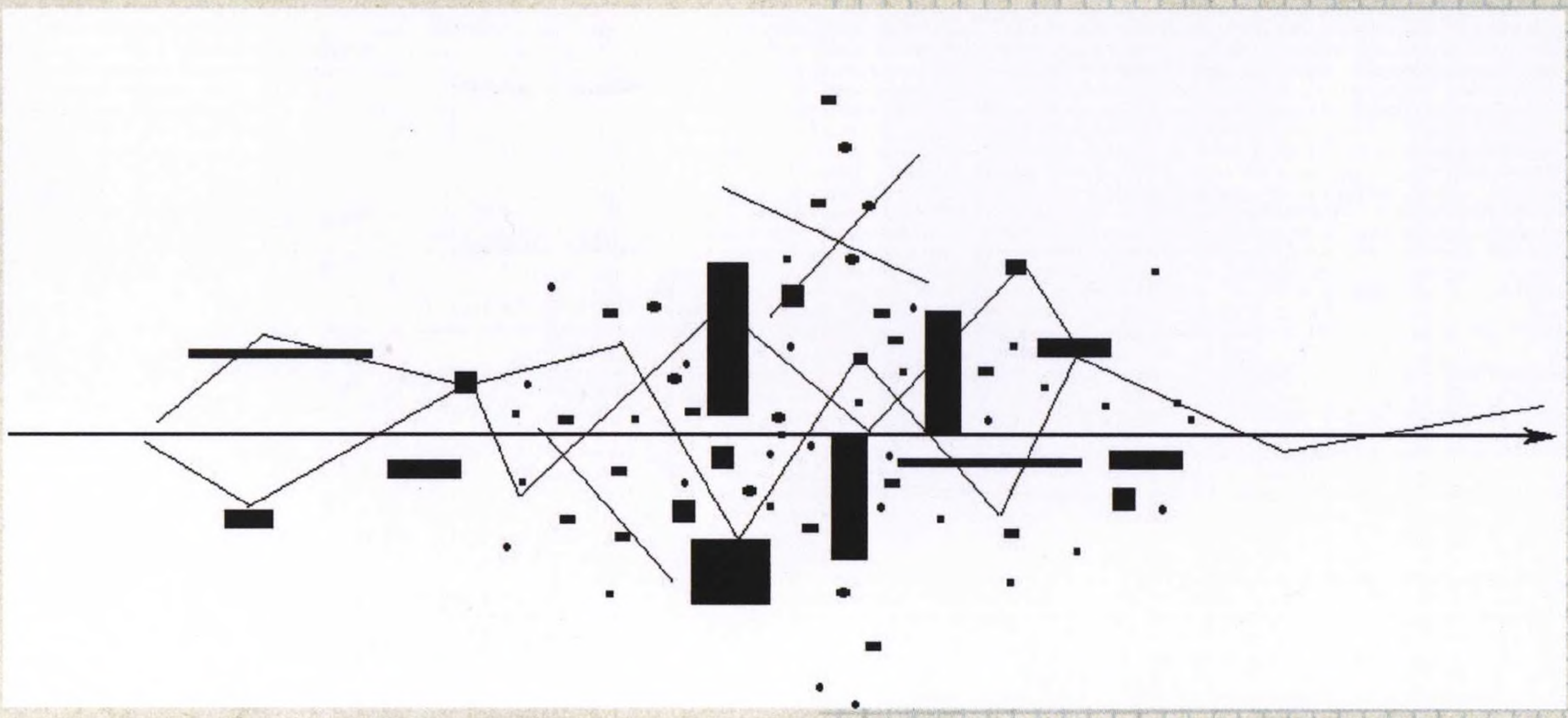




Tommaso Perego; *Incastro Di Mondi*. For flute, bass clarinet, violin, and wireless gamepad.

Used by permission of Tommaso Perego, © 2007.

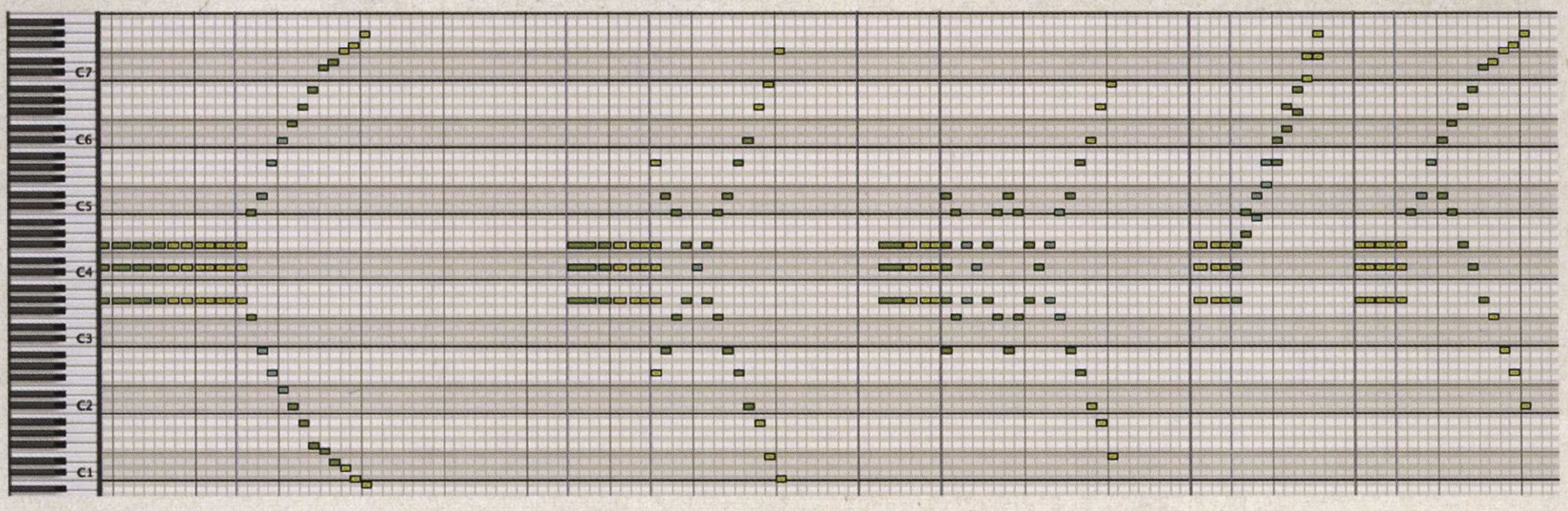
JOE PIGNATO



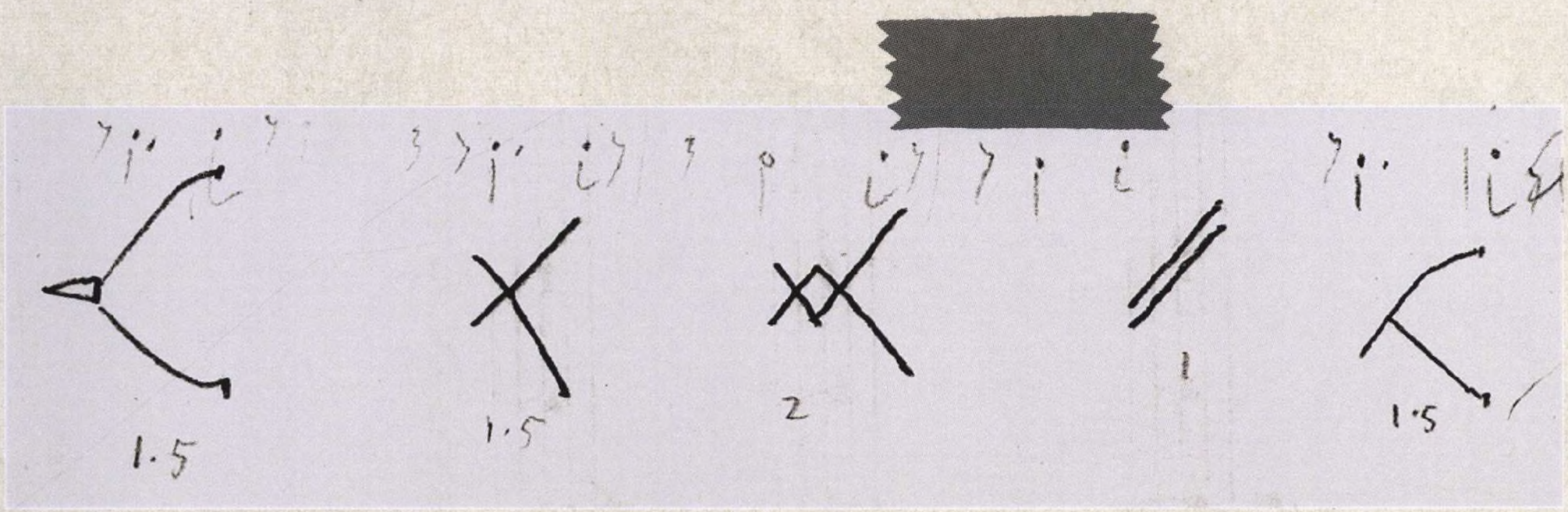
Joe Pignato; *Paprika King*. For any number of improvisers. Used by permission of J.M. Pignato / East 8th Street Music, © 1996.

Paprika King: A graphic structure for any number of improvisers. Overheard at the UN Promenade, NYC - May 5, 1997.

He was the Paprika King of Hungary, really.
Have you heard of Paprika?
It's a seasoning,
It's red.



Jonathan Piktin; *Con Spirito*. For piano and Yamaha Disklavier (a digitally controlled player piano). Used by permission of Jonathan Piktin, © 2007.

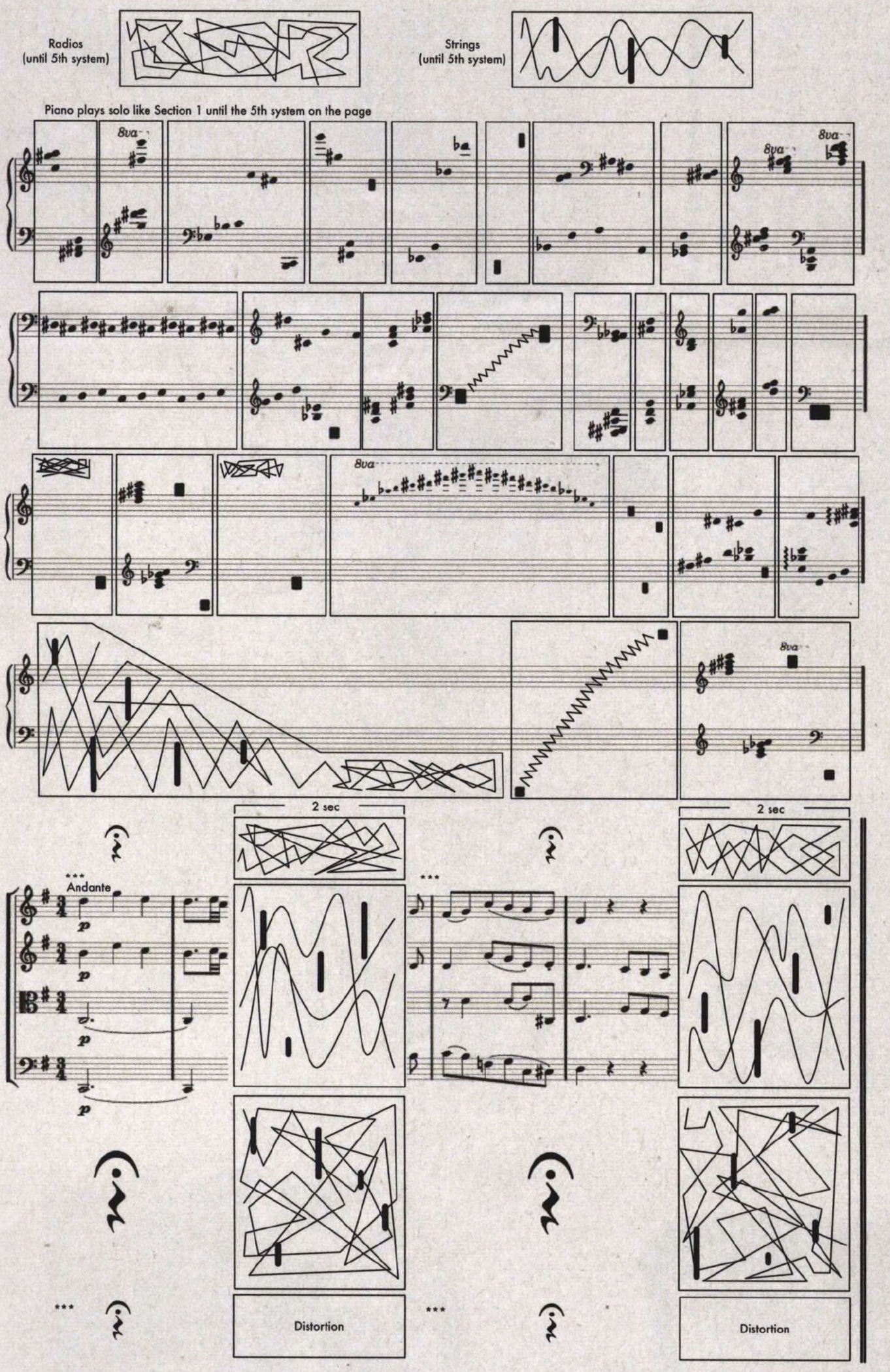


Jonathan Piktin; Work sketch: the numbers underneath the shapes indicate the length, in beats, of each phrase.

Con Spirito is a piece of mine for piano and Yamaha Disklavier. The Disklavier is a digitally controlled player piano that is capable of playing music of amazing complexity at otherwise inconceivable speeds, pressing down its own keys as if by magic. Because of this, a "performance" of a piece for Disklavier is as much a visual as an aural spectacle.

I often found myself "composing" the shapes and patterns that I wanted to see played out on the Disklavier's keyboard, initially as freehand sketches (in the work sketch—the numbers underneath each shape indicate the length, in beats, of each phrase), before deciding upon how many notes, and what pitches, each gesture should consist of. As a result, the "piano roll"-style display of the sequencing software which was used to program the Disklavier part (the different colors represent different dynamics) gives arguably a more faithful visual representation of the music than the finished score.

SAMUEL PLUTA



Samuel Pluta; *American Tokyo Daydream III (The Surprise)*. For string quartet, piano, and 4 AM radios.

Used by permission of Samuel Pluta, © 2006.

American Tokyo Daydream III (The Surprise): Any system for visually displaying information has a hierarchy of importance to the different layers of data that it presents. Traditional musical notation displays a hierarchy where the notes and rhythms of sound are given priority. Other data, such as volume, speed, and tone color can be shown, but certainly take a back seat. By rearranging the hierarchy of musical information in graphic scores, elements such as tone color, playing technique, and shaping (to name a few) can come to the informational foreground, greatly altering the way a performer approaches the score, and allowing the communication of ideas that would be impossible with traditional notation. This is exactly what I have done with this piece.

When you play
music with Christian
sometimes you get questions
before you answer.

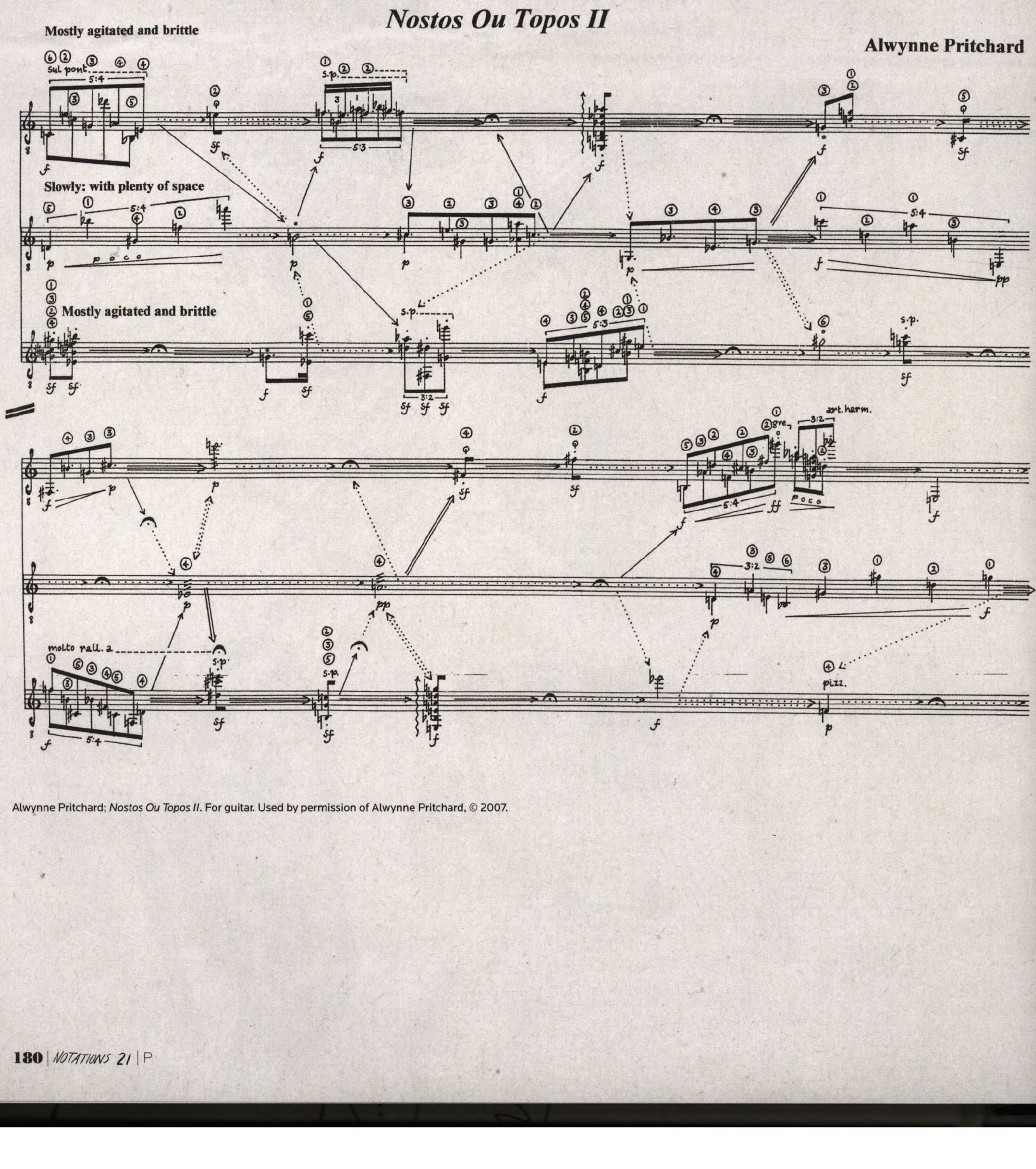
When you play
music with Christian
sometimes you get answers
before you ask.

Larry Polansky; *Christian Music*. For retuned basses playing only natural harmonies.

Used by permission of Larry Polansky, © 2007.

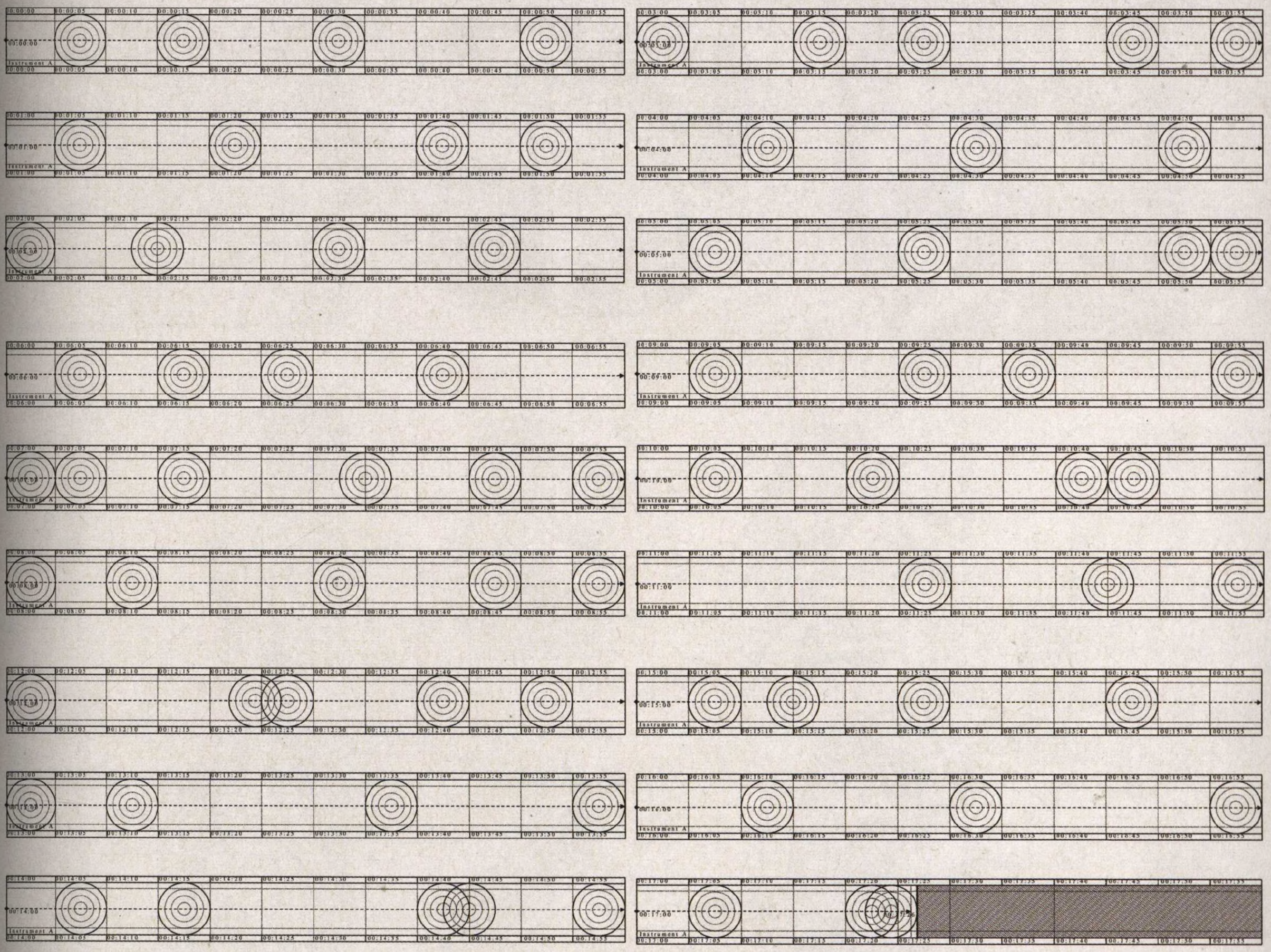
Christian Music is a set of four rounds, on large color postcards, done in collaboration with designer Laura Grey. Movement for Lou Harrison (for just bass quartet).

This score exists in two versions: one graphic notation, one conventional music notation.



Alwynne Pritchard; *Nostos Ou Topos II*. For guitar. Used by permission of Alwynne Pritchard, © 2007.

ANTHONY J. PTAK



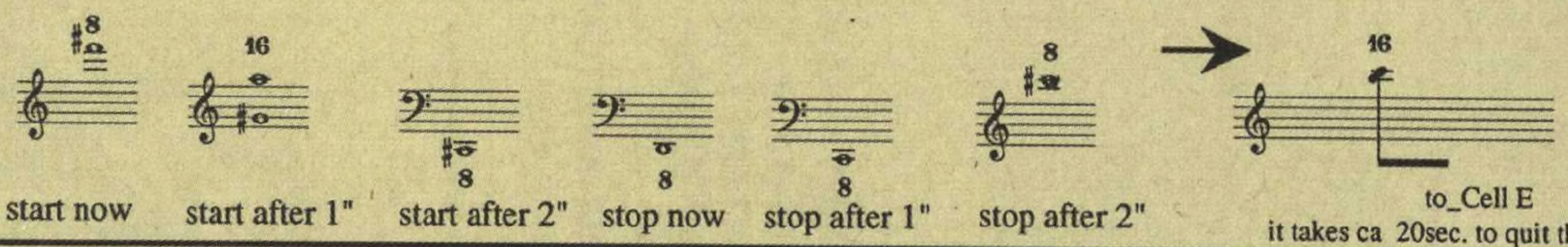
Anthony J. Ptak; *Insistentia .05*. For any instrument, object, or action. Used by permission of Anthony J. Ptak, © 2005.

Insistentia.05 is a composition. It reifies a way of thinking about the world. The scores are configured as a performance for any instrument, object, or action. It should be performed without any sense of rhythm or metered time. Performers should not listen to, or respond to anything going on around them. Decisions should be forthright, made in spite of everything, including any interference or disruption. When an incident takes place, it is far more important than what takes place. Each incident is 5 seconds in duration; sometimes these durations overlap. The performer needs to interpret these, finding her or his voice in what is the essence of the selected single instrument, object, or action. Through the course of performance the performer is learning a language, and continuously creating a new one. This work is perhaps a non-music, less concerned with virtuosic capitulation of an idiom, more concerned with transformation of a given situation, which in itself may prove to be virtuosic. Even when an incident is repeated, it is never done exactly the same in recursion. A performer should listen only to his or her insistent actions, and create a distinction, even if it is one not immediately apparent to an audience, in subsequent incidence. The performance is labor. If a performer becomes tired, this is part of the labor. Be on time. Pay attention or a tension may collect its debt. What does it mean to insist? To stay upon: to lean upon: to rest: stop or stand still: to pause as would speak no more: to persist: to continue: to enforce: to labor earnestly: to pursue diligently to abide fast and firmly: to endeavor: to provoke or solicit.

Cell_D (1'45" ±30")

at the beginning wait
for more than 10 sec.

function keys
with damper pedal

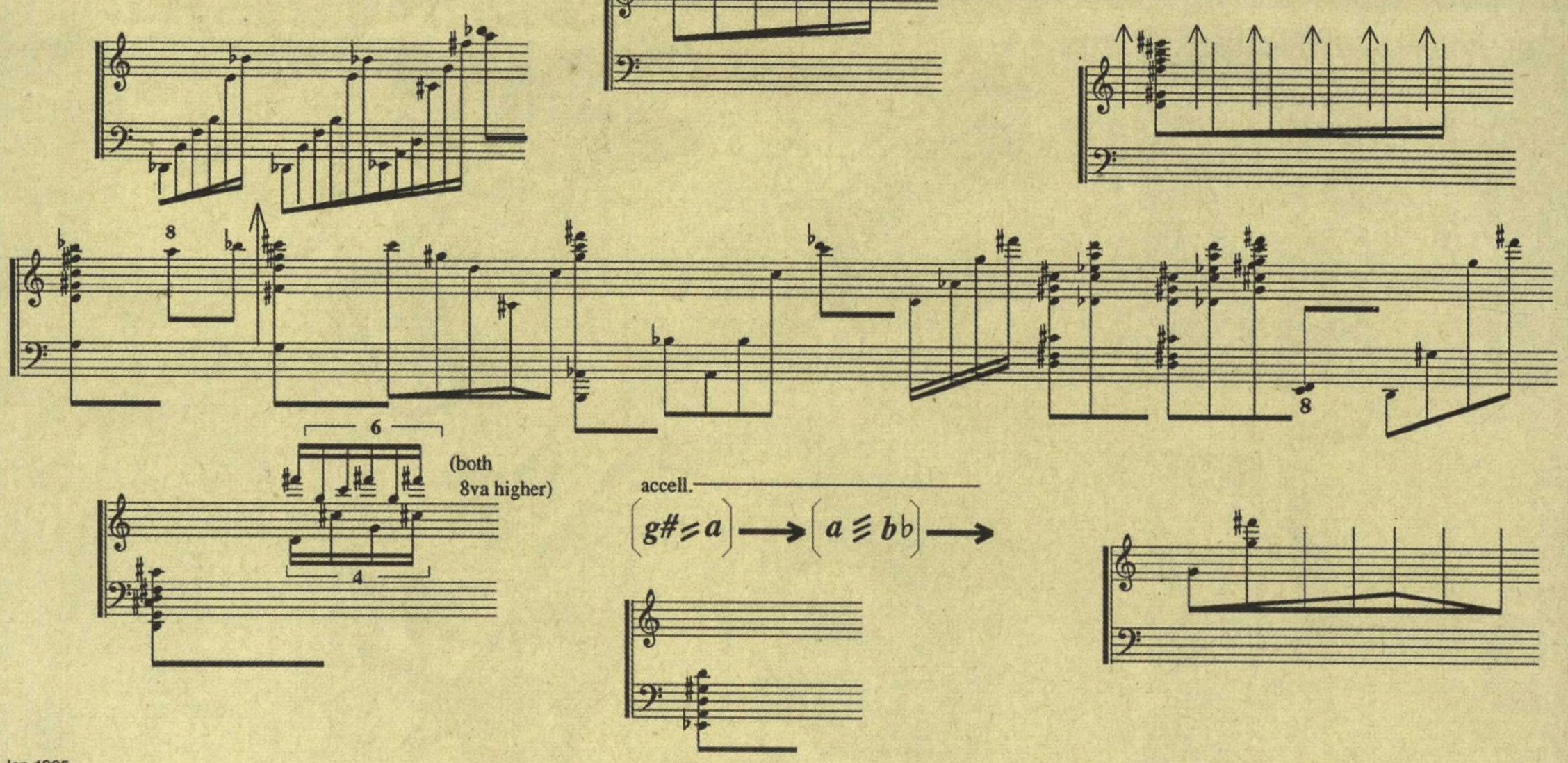


dynamics ff — pp

tranquillo

FC pedal : fractal random number control

accell. d ≠ eb → e ≡ f →



Jan 1995

Takayuki Rai; *Kinetic Figuration*. For MIDI piano, synthesizer, and computer. Used by permission of Takayuki Rai, © 1994, 2000.

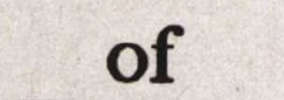
# of Pine and Silk

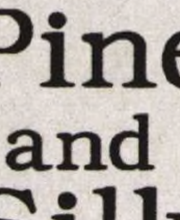
for violin

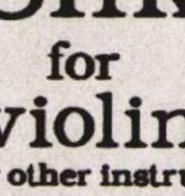
or any other instrument

Randy
Raine-Reusch

04/12/94

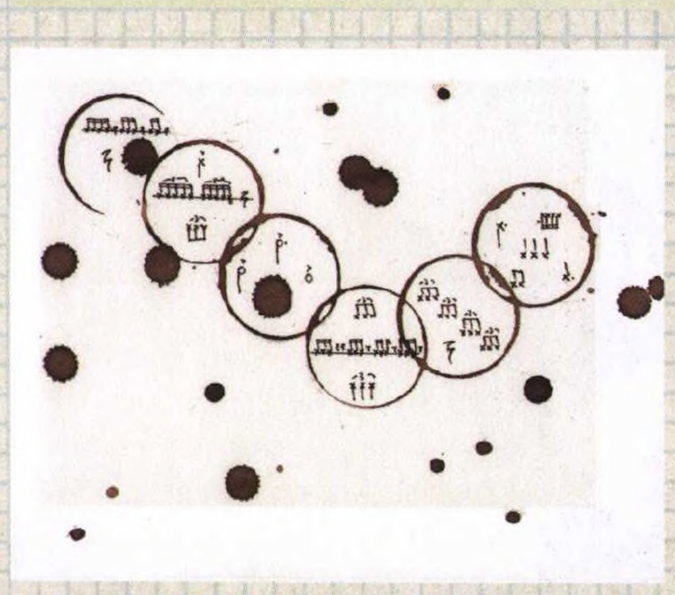


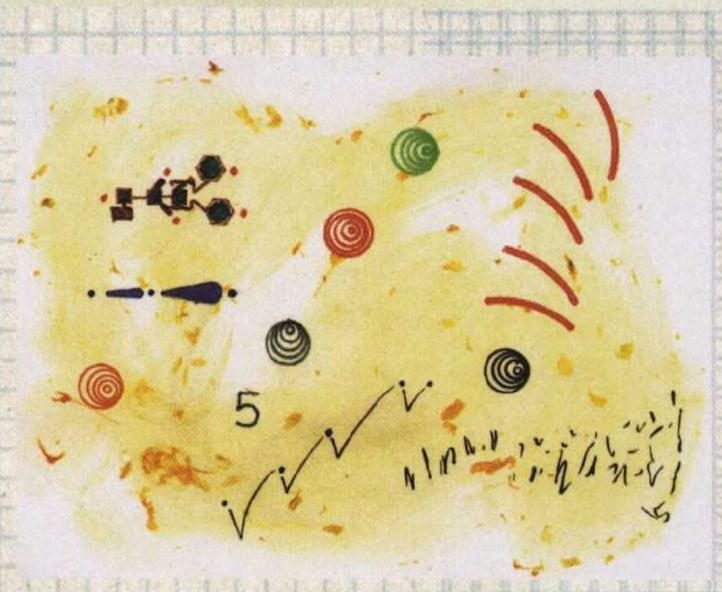




Randy Raine-Reusch; *Of Pine and Silk*. For violin or any other instrument. Used by permission of Randy Raine-Reusch, © 2005-2007.

JON RASKIN





Jon Raskin; *January 13, 2007*; *Qupe*; *Postcard 2*. All for quartet (electronics, bass guitar, percussion, saxophone).

All used by permission of Jon Raskin, © 2007.

For the last several years I have been creating graphic scores, for lack of a better term, for improvising musicians. The scores can have a very open interpretation and/or decisions about material can be decided on before, depending on the players and situation. The change of visual and sonic meanings is part of the interplay that I am looking for with these works.

If the music takes you off the page you are free to go where it leads, but you need to come back to the page again.

January 13, 2007: The center melody can be played freely and slowly at any time during the piece. The last bars are a tone row to be used with the dots and lines. The circle with broken lines use the tone row notes so there is space between each note. The solid circles are continuous notes with no space between them. The notes can be octavated. The line and dots are the same as Gingko with no octavation. The 8 pictures of plant flowers are self-composing elements and the musical concept is decided on by each musician.

Qupe: This piece is about rhythm and each circle as generative material. The tempo must be consistent but can change for each circle. Solid circles are for open rhythmic ideas.

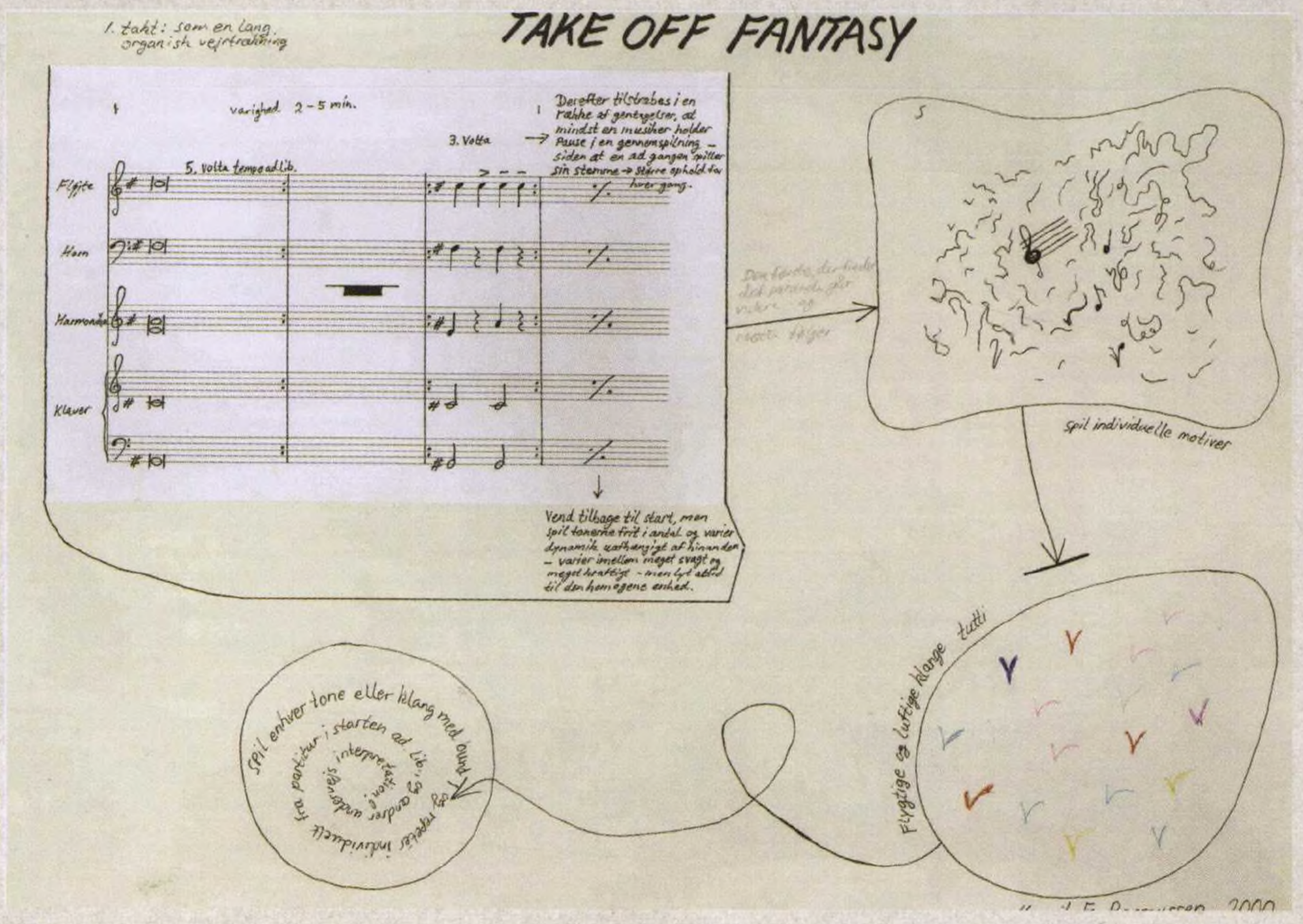
Post Card Series 2 No. 5: Each musician decides on what the graphic material means and develops the language and content through progressive performances.

Gingko: Instructions: The musicians assign a note or sound to each dot for each leaf. You can only play a note or sound that is connected by a line. Each leaf can be a different series of notes or sounds. The middle is a group improvisation.

Jon Raskin; *Gingko (part 1 of 4)*. For variable instrumentation. Used by permission of Jon Raskin, © 2007.

Note: The musicians assign a note or sound to each dot for each leaf. You can only play a note or sound that is connected by a line. Each leaf can be a different series of notes or sounds. The middle is a group improvisation.

HENRIK E. RASMUSSEN



Henrik E. Rasmussen; *Take Off Fantasy*. For piano, French horn, accordion, and transverse flute.

Used by permission of Edition Samfundet, © 2000.

May the intuitive musical thinking help us to show the way to balance. Promoting an extension of awareness of the surroundings.

How to train for musical thinking: challenge yourself by being occupied by many different music styles to sharpen your sensitivity to what the world consists of, by your own goal and intention, and by being a part of a life that has potential for being beautiful in a beautiful world. Develop your ability to listen to yourself and your environments, with your purpose being to gradually enhance your skills for distinguishing and navigating the best music in the world.

Musical thinking has, for me, a deeper meaning than just making music. I think music might help us to discover and recognize our real responsibility toward the essential elements in nature—to open our eyes toward the beauty in life itself, as being much more important than how much money one can earn (regardless of the consequences).

The importance of musical thinking should not be underestimated, because this way of thinking helps us to deal with aspects of our views of life; it helps us to deal with living with each other. I would like to state some kind of a definition in regards to this way of looking at the world. For example, implemented meaning would be the ability to pay caring attention to important questions, to responsibility in mind, and to love the multiplicity of life. Any and all people who practice intuitive musical thinking would logically have enhanced abilities to create visionary ideas that would normally get lost because of a) the lack of communicative channels; b) the various types of "noise" in the traditional human interaction disturbing the communication of an idea, or an even bigger obstacle; c) the deaf ears among powerful organizations or leaders.

For me, music should not only have an "empty," entertaining function that confirms the audience in their own taste of aesthetics, and, implicitly, keep them in status quo as to what the world looks like. Music must guide you to new experiences and surprises. This challenging exercise—and this is very important for me—is to create a better world, with room for visionary decisions and caring activities, before it is too late. The exercise examines how we can collectively enhance ourselves to stop and change our activities in, on every level, a suffering world.

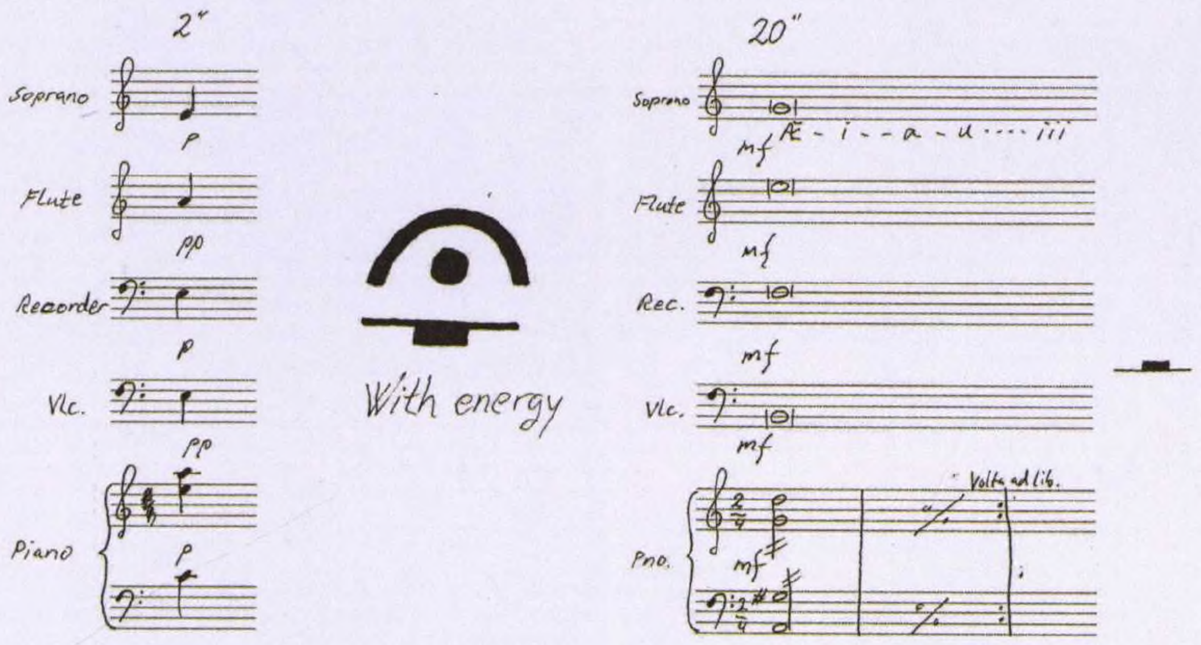
Creating music in an intuitive form is a very important way to give people the opportunity to learn more about themselves, and, hopefully, pose questions about what role in the world each person should play—to listen carefully in their lives. In my opinion, intuitive music as a phenomenon in concert life, or other forms, provides pure, free improvisation, as well as graphic notation, and is a useful way to change our way of thinking to a more positive direction.

Music that wakes our minds by putting it in a state of surprise, or wondering, or that challenges our tolerance for what we expect to listen to, or take active part in might help us to understand our surroundings better, and it might help us to change our attitude as to how we act against our vulnerable planet, and—a deep wish—to be able to cooperate in a meaningful way toward a higher goal instead. Music should contain much more wisdom for dealing with all kinds of life. Musical thinking might teach us how war and fighting, on every level, are always caused by very primitive psychological patterns. In other words, it should be everyone's right to participate in the context of this new music, which is provided for us, so that we can explore ourselves in the light of human nature.

[redacted]

Infinite detours through a flower

1.

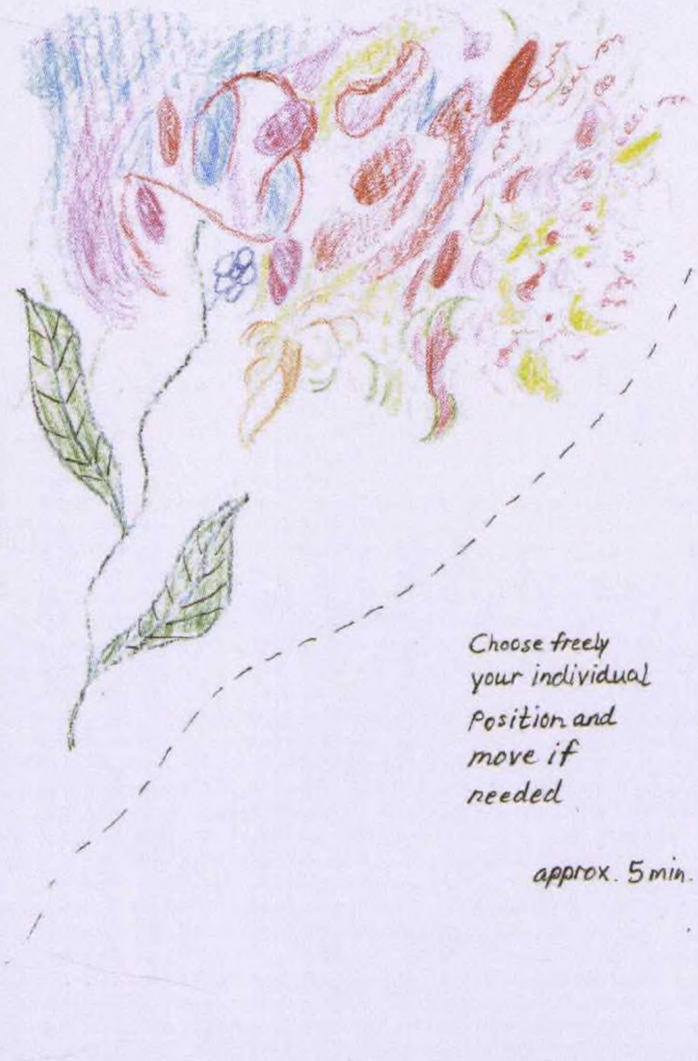


[redacted]

6.

→ Spacious stillness

– Listen for spontaneous ideas



Very high intensity

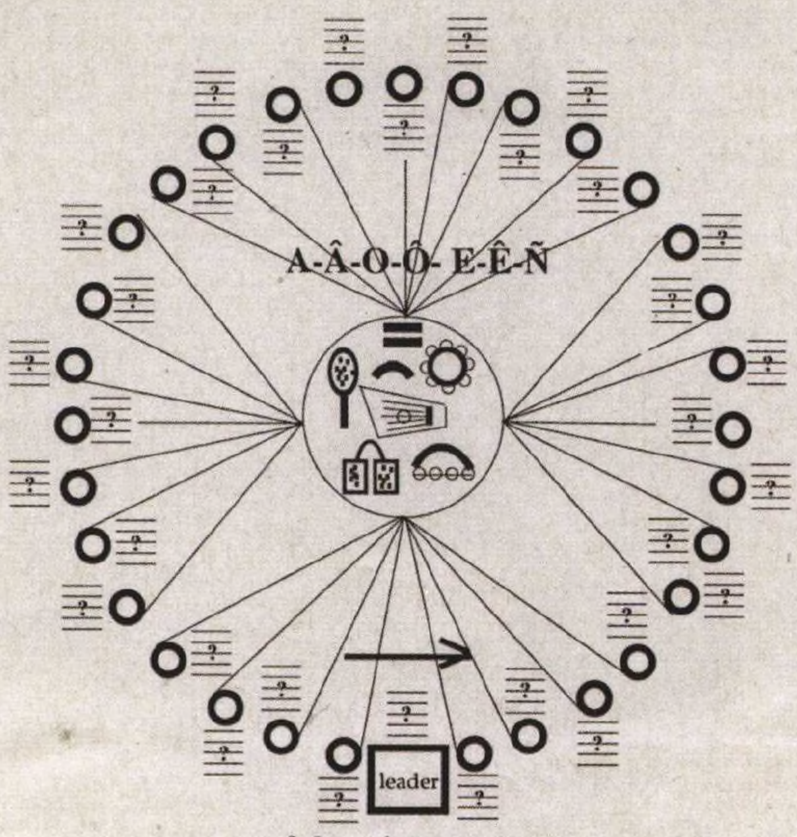
Choose freely your individual position and move if needed

approx. 5 min.

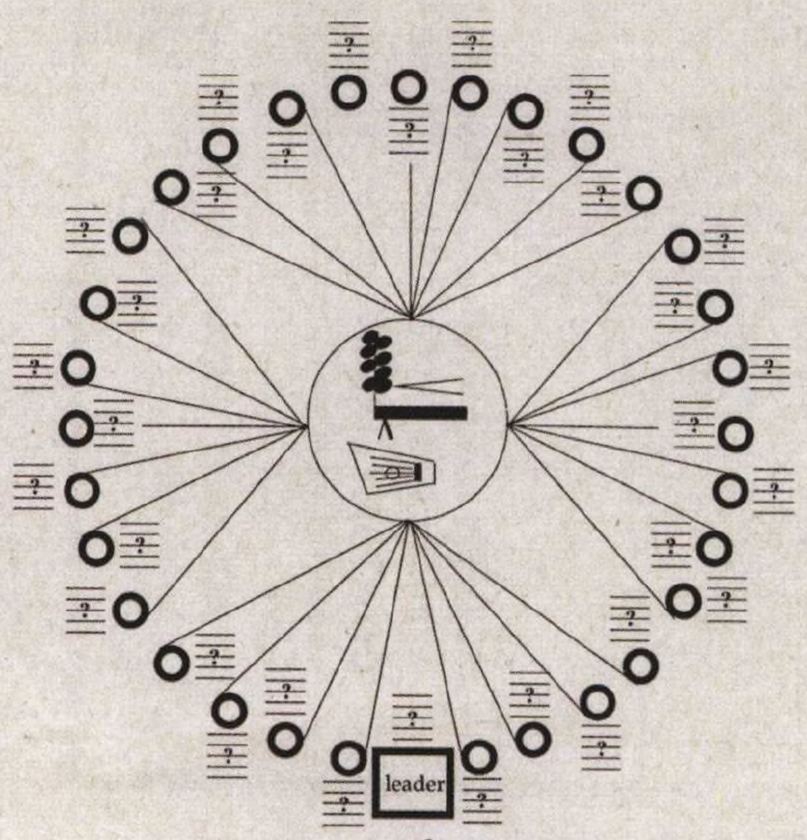
Very low intensity

Henrik E. Rasmussen 2001

Henrik E. Rasmussen; *Infinite Detours Through a Flower*. For piano, flute, recorder, cello, and soprano. Used by permission of Edition Samfundet, © 2001.

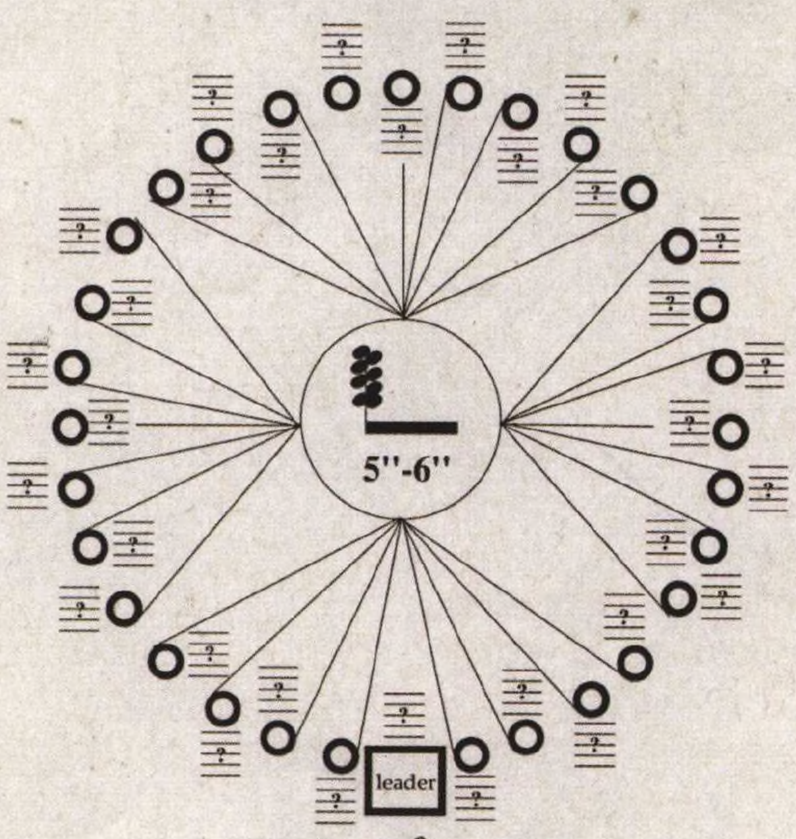


fade out instruments

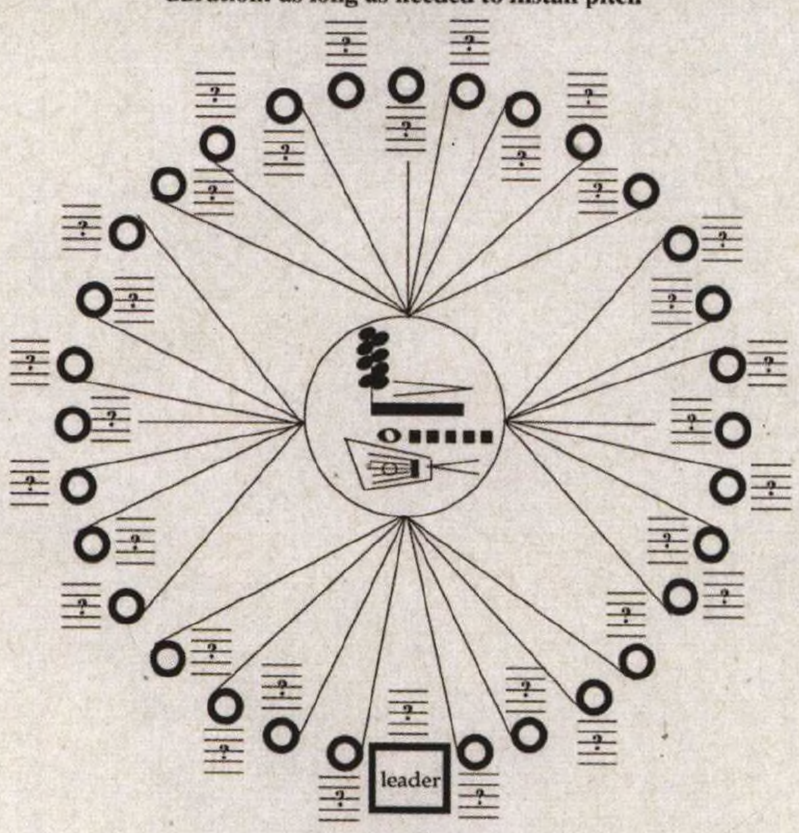


pp < *mf* > *pp*

duration: as long as needed to install pitch

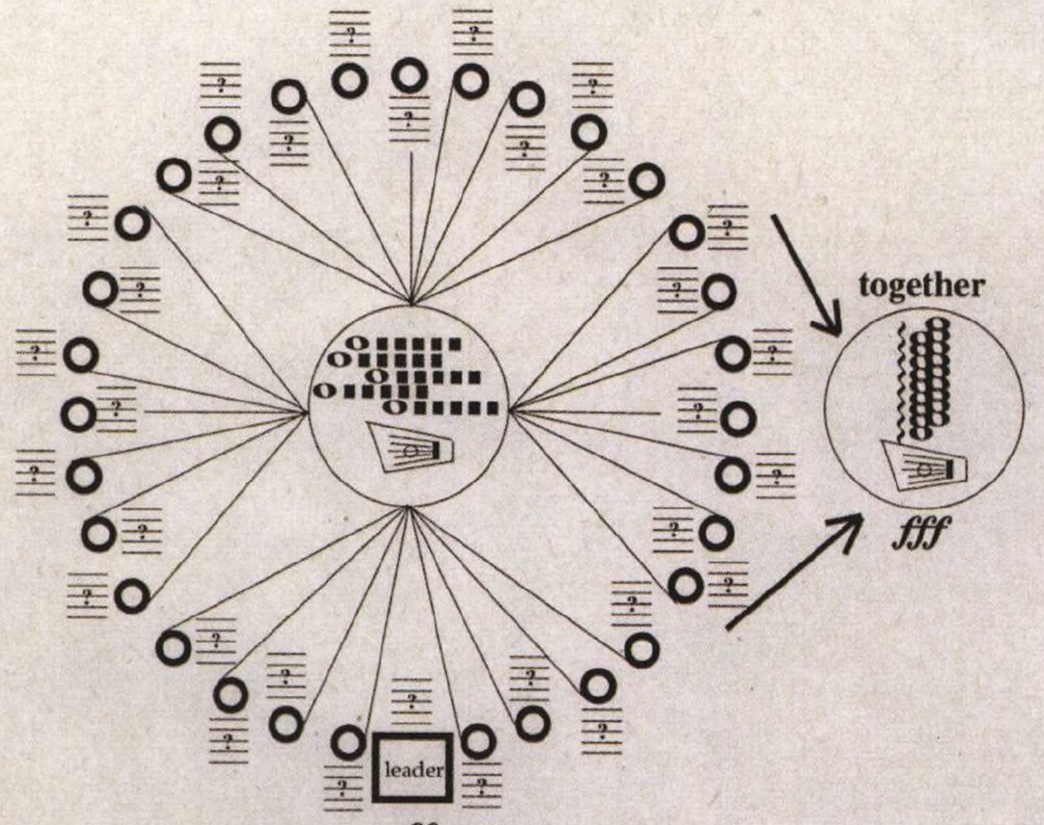


pp < *mf* > *pp*



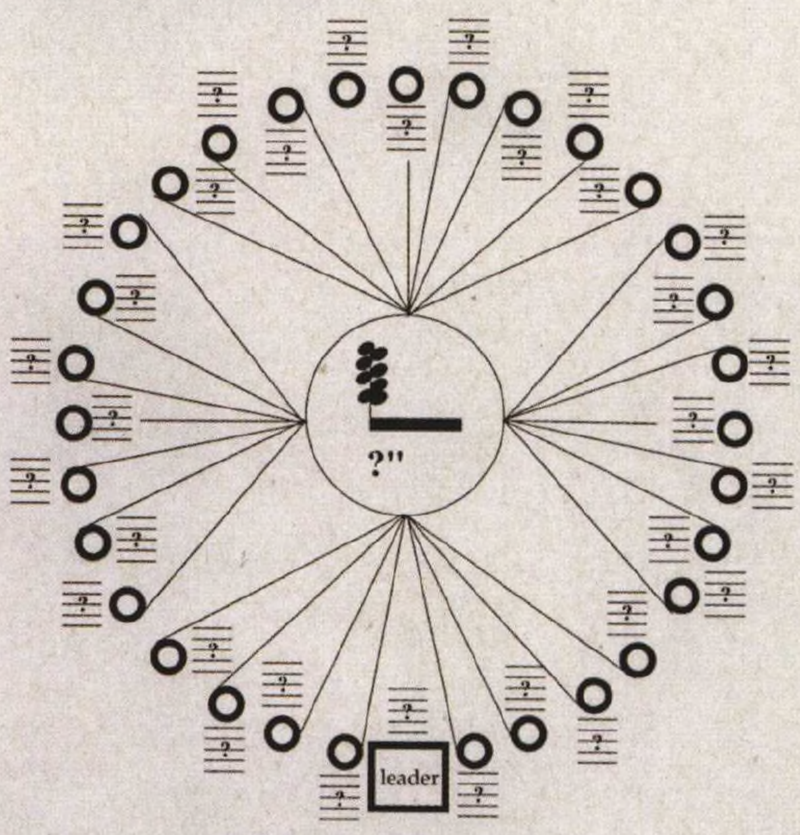
pp < *mf* > *pp*

fade in string instruments gradually
fade out voices gradually



pp < *ff* > *pp*

15"-25"

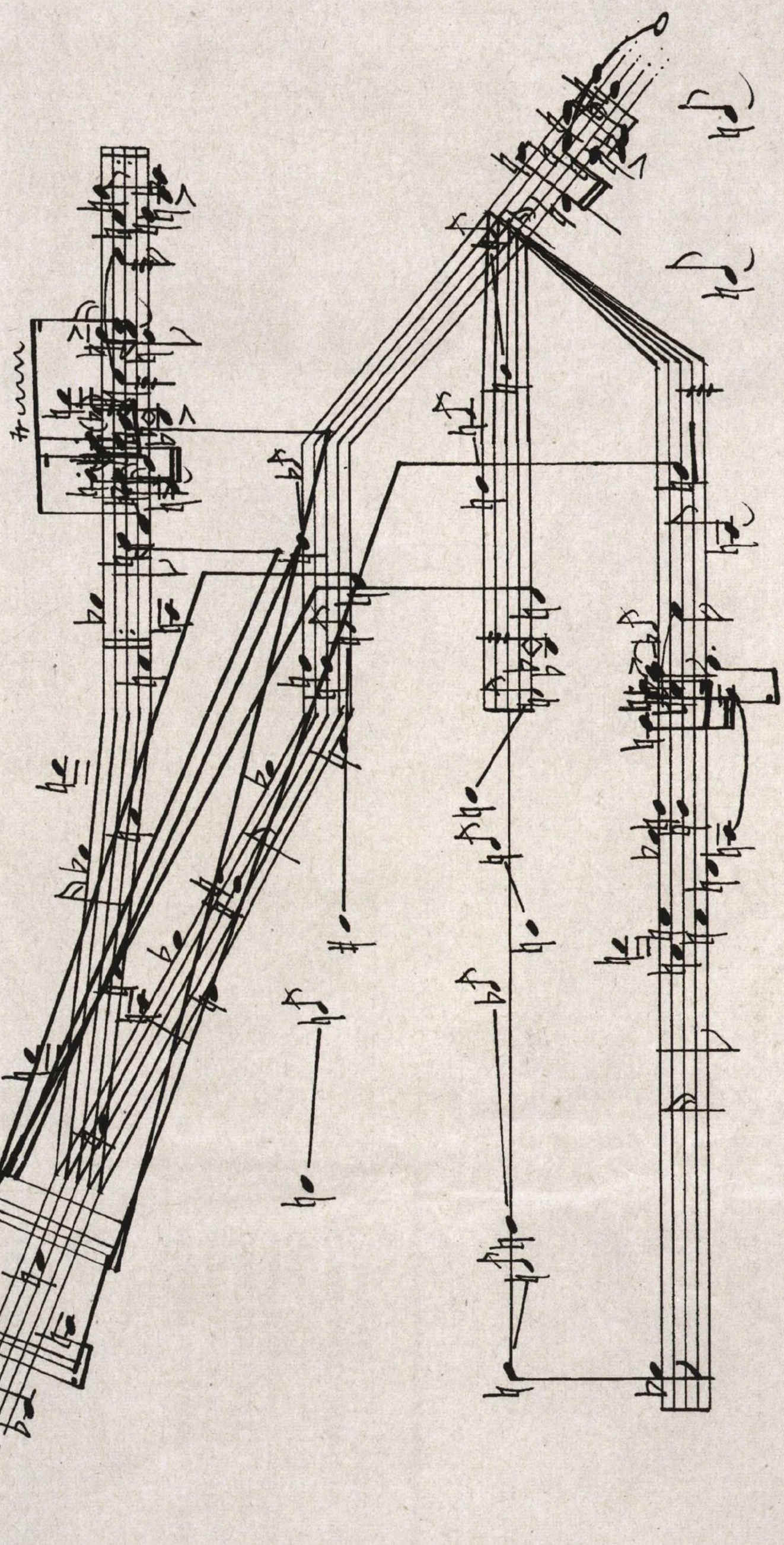


ppp < *pp* > *ppp*

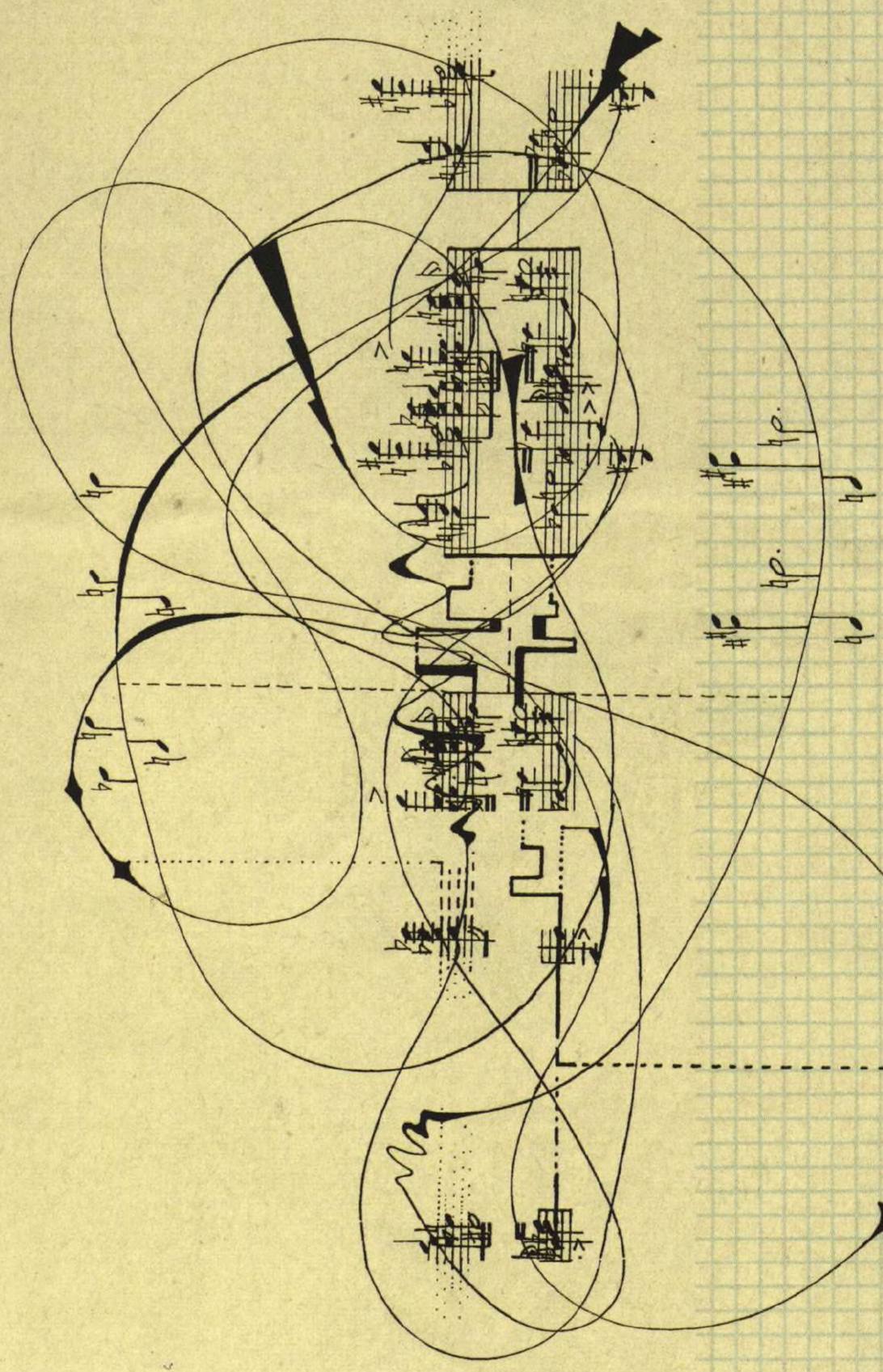
spontaneous pitch

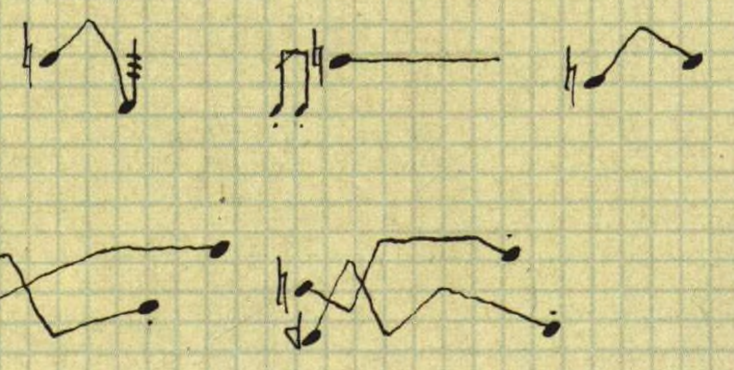
RECHBERGER: SOUND! RING! (4)

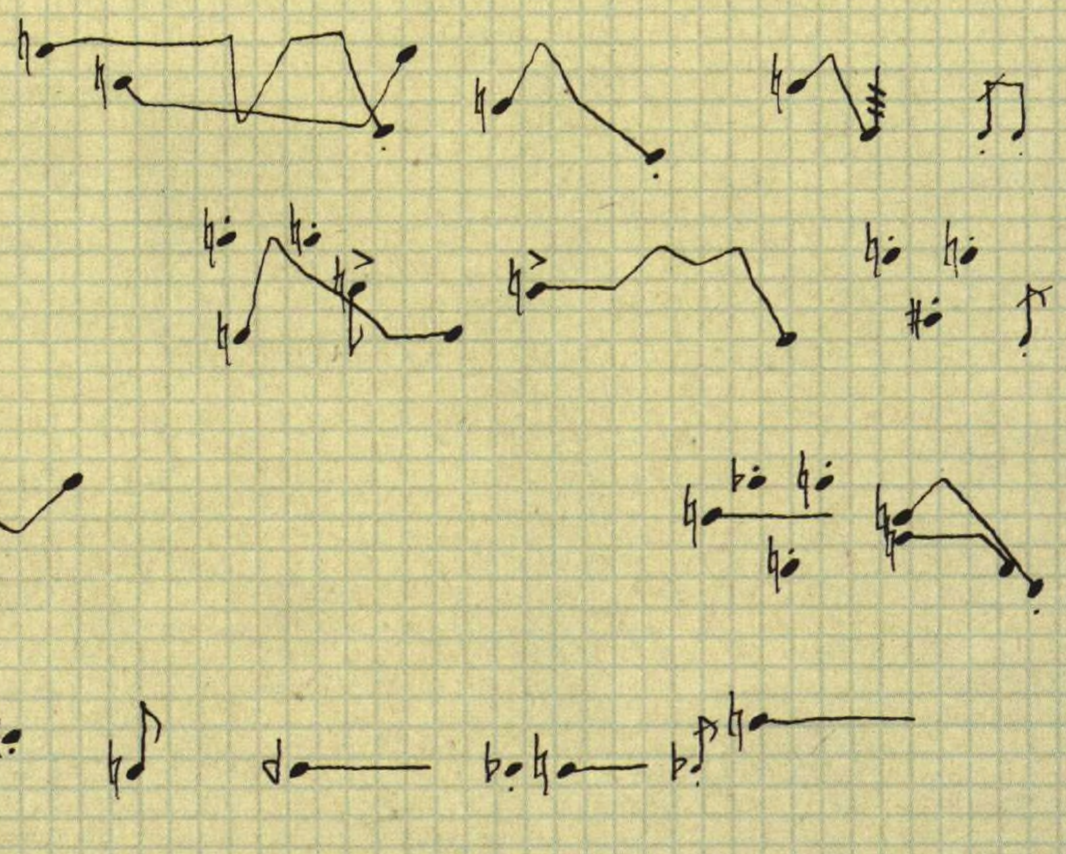
Herman Rechberger; *SOUND!RING!*. For 20-25 vocalists and auxiliary instruments. Used by permission of Herman Rechberger, © 2000.



WILL REDMAN



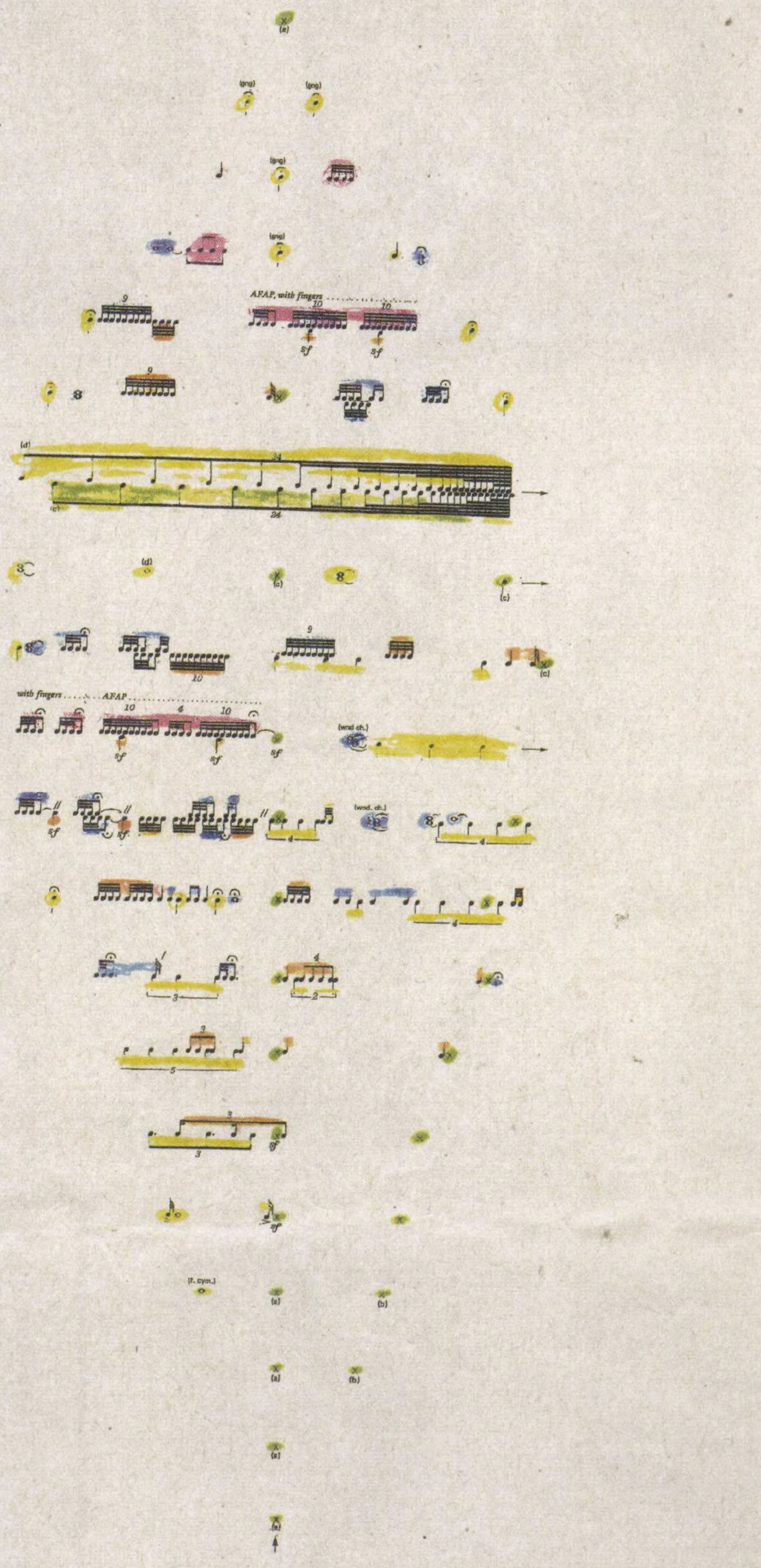




Will Redman; *Book*. For interpretation, however radical, by any performer(s) in any place, at any time, in any part, for any duration. Used by permission of William Redman, © 2006.

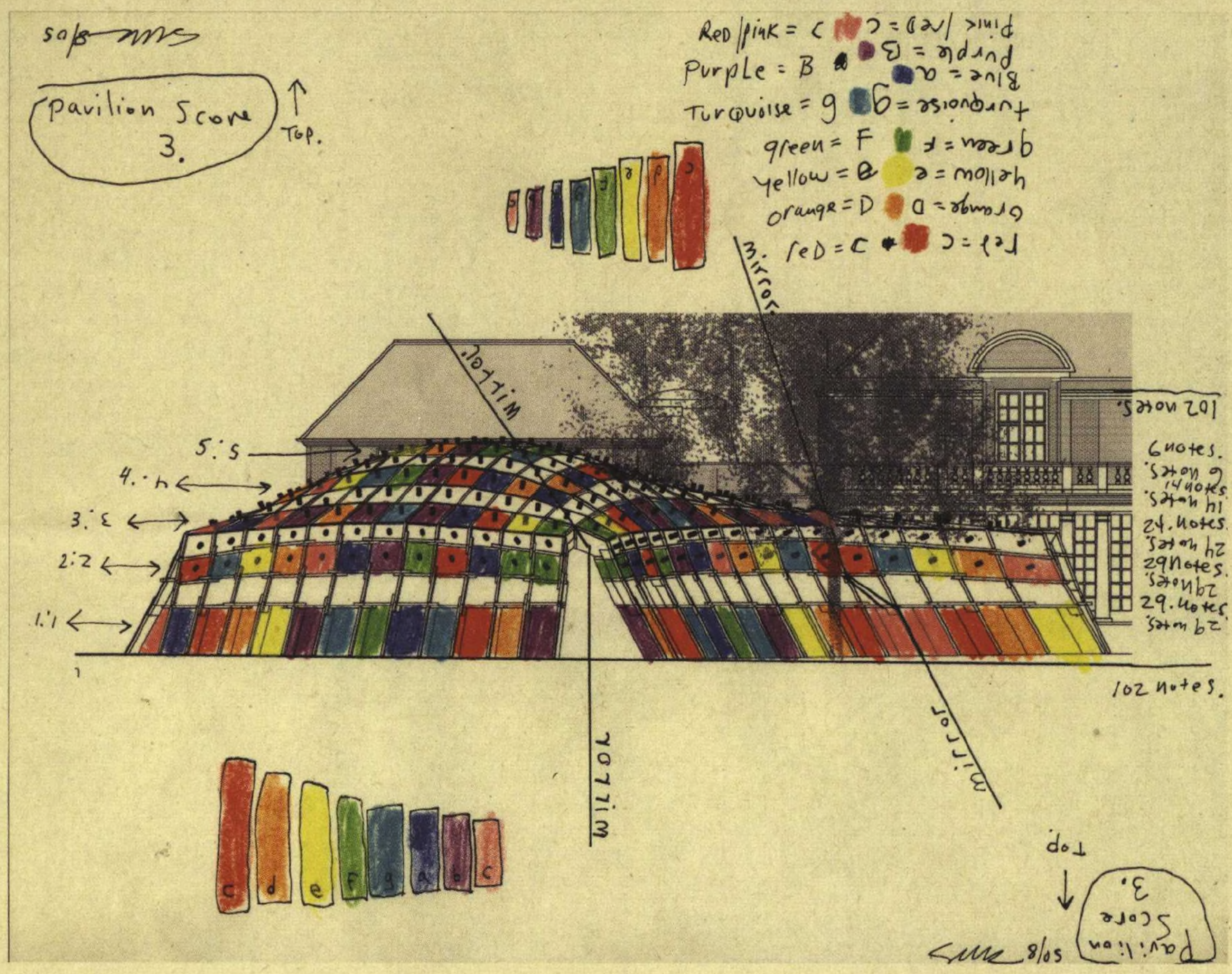
Tree Piece #8 is an intimate dialogue of sparse and delicate timbres selected by the solo percussionist within the restrictions given by the composer. Unlike many solo percussion works, the piece is introverted in character and requires an unusual combination of restraint with poetic spontaneity from the performer. Of all the *Tree* works, this composition probably encompasses the idea of growth or growing in the purest sense: sounds and silence are constantly growing from a source (the 'root' note), ever-changing and expanding, but in subtle ways, sometimes barely perceptible. It might be compared to watching a tree grow from day to day. The Fibonacci series is not merely used as a compositional device as it is in other *Tree Pieces*, but is a visual as well as aural representation of the number sequence, and most aptly so considering the nature of the work. William Winant, for whom the piece was written, played the premiere performance May 29, 1984, at the New Performance Gallery in San Francisco.

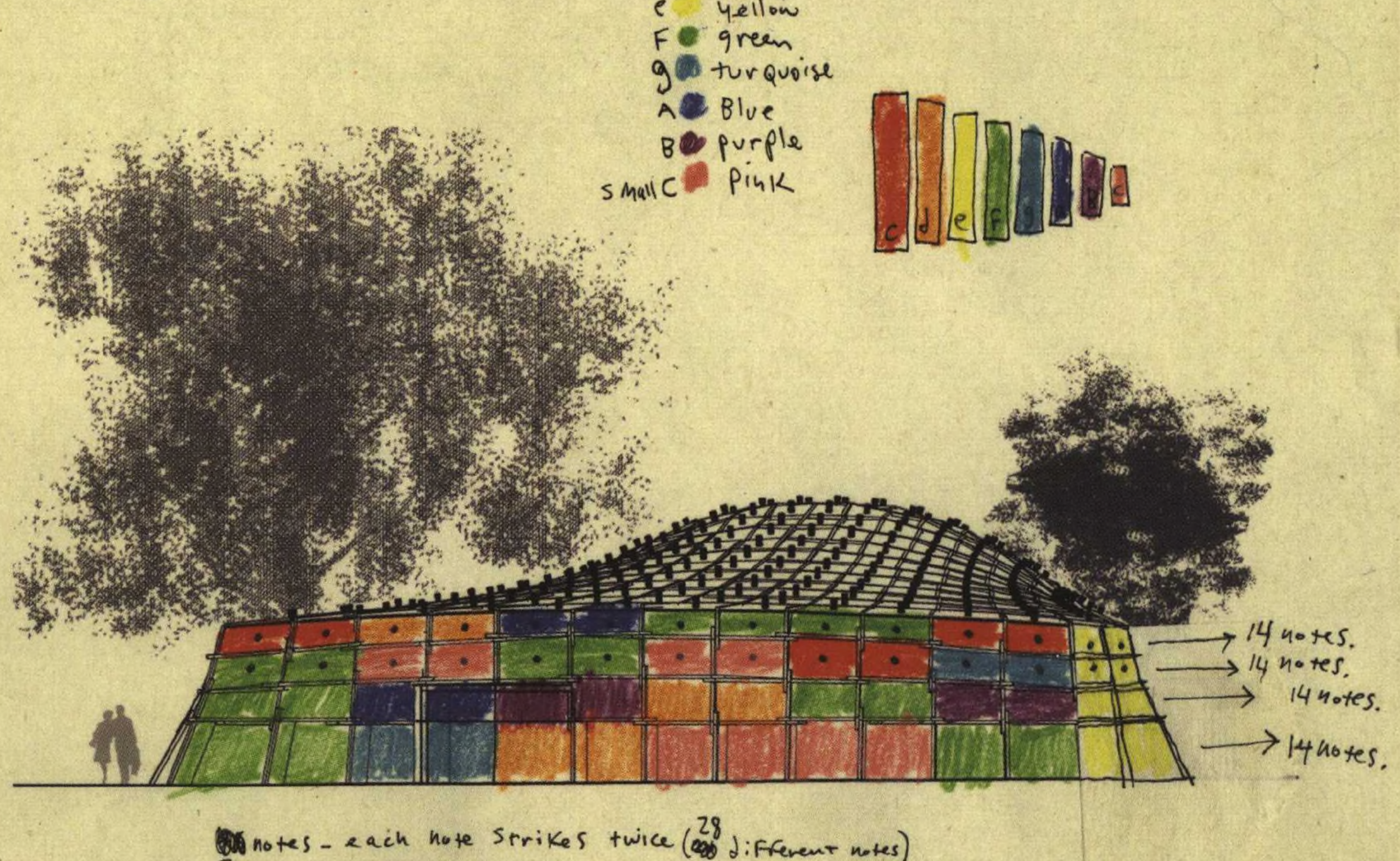
Tree Pieces is an on-going set of musical processes that attempt to reflect nature's manner of operations. Because the pattern or order of nature functions as a single process without division, contrary to the state of control in which there exists a duality (meaning, one element commanding and the other obeying), control in the compositional process is removed to varying degrees from piece to piece. The processes are contextual in nature, thus allowing the performers to act according to the unpredictable conditions and variables that arise from within the musical continuity. In this way, the compositions attempt to reflect the inter-connection of all things (including ourselves) in nature. In performance, an attempt is made at a spontaneous, unforced, and unblocked growing of sound and silence in which emphasis is placed on formation rather than pre-established form, as in the building and shaping of cell-like units in living processes. This approach, "formation as process," parallels that of the artist Paul Klee whose writings have influenced my work. Klee believed that "communication with nature remains the most essential condition" for the artist by the simple fact that he himself is part of nature.



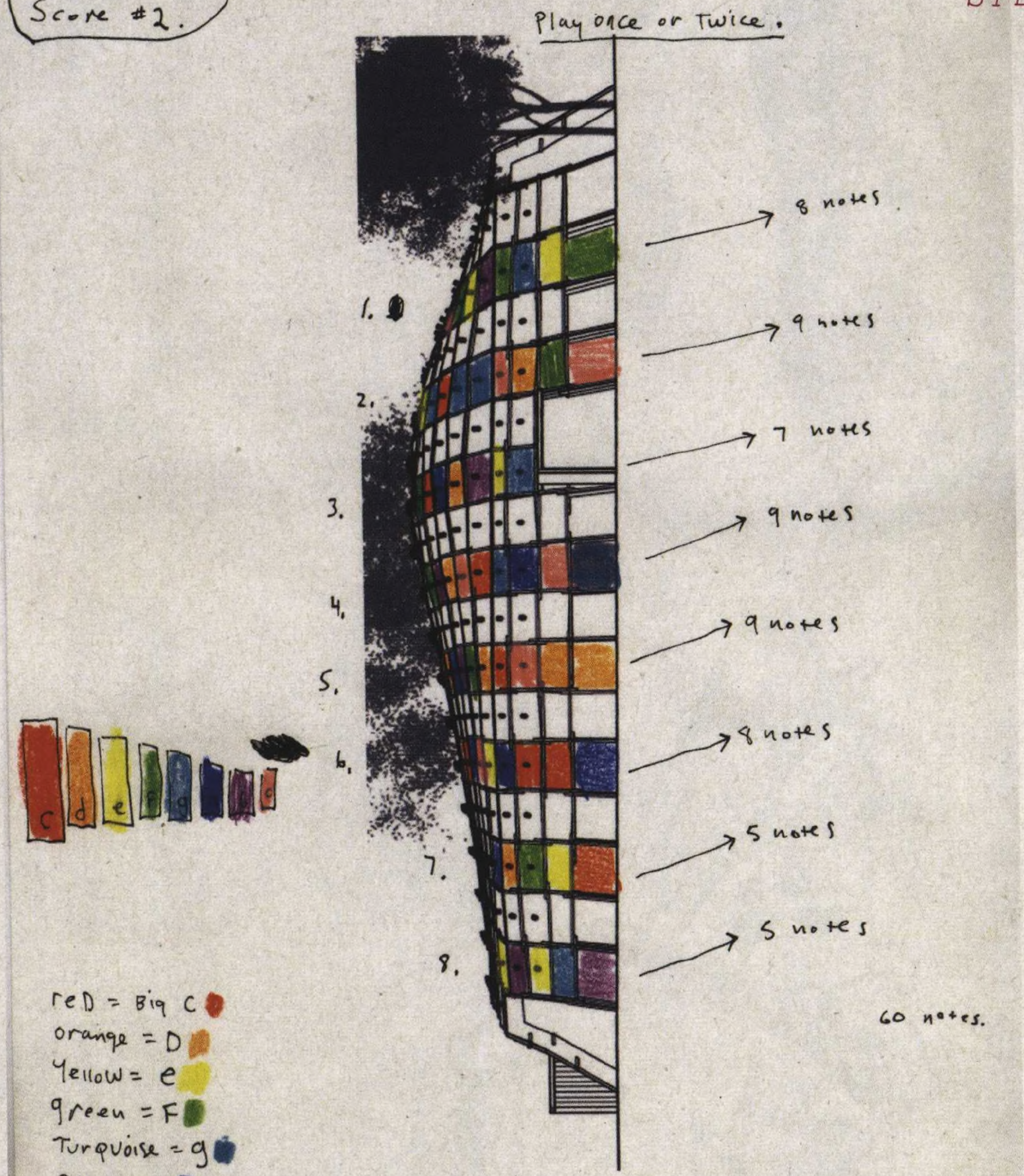
Wendy Reid; *Tree Piece #8*. For solo percussion. Used by permission of Wendy Reid, © 1985.

STEVE RODEN





Steve Roden; "mapping space in sound" from *Pavilion Scores 1-5*. For children's glockenspiel. Used by permission of Steve Roden, © 2005-2006.



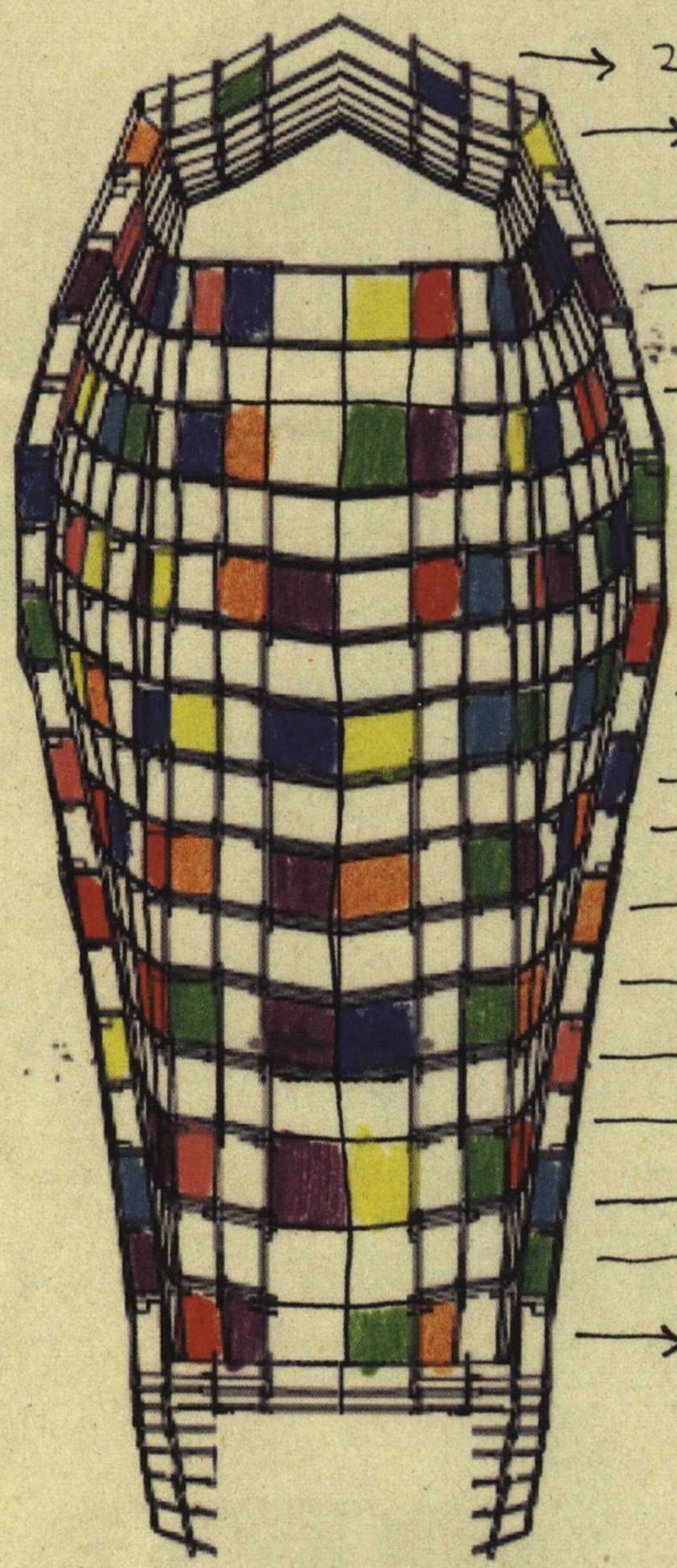
Pavilion Score: In the summer of 2005 I was invited to create a site-specific work for the Serpentine Gallery's Summer Pavilion, designed by Alvaro Siza, Eduardo Souto de Mora, and Cecil Balmond. While I had been using score-based ideas to generate paintings for years, I had kept my sound-making activities relatively free from scores. When I received the architect's drawings in the mail, I was immediately smitten with the structure's visible units. I generally speak about the compositional process of my soundwork in relation to architecture; and the architect's drawings suggested to me the potential of building a soundwork that could mirror the construction of a space.

The process was relatively simple: take 8 different colored pencils (one for each note on an already color-coded child's glockenspiel) and fill in the pavilion plans with colors indicating musical notes. For each "view" I approached the color order through various chance systems, with "Pavilion Score 3," having the only discernable system in terms of its mirrored repetitions.

The intention was that these scores would be playable by anyone—musician or not—and during the performance I was accompanied by 4 members of the Serpentine staff (who were, it turned out, all non-musicians). The scores have a relatively clear set of notes, but timing, repetition, when to start and stop, etc. is entirely up to the performer. Because there were 5 elevations, I felt the most important "skill" would be one's ability to listen to the other four, so that we would attempt to create a cloud rather than 5 roads moving in different directions.

Ultimately, my interest was in the simple idea that the performers would be mapping the space in sound, and that the audience would be listening to a drawing in sound of the space that they were sitting inside of. Obviously, I was also interested in seeing what would happen if the architect's drawings were used to generate music as well as architecture.

Pavilion Score 5.



Big C red
D orange
e yellow
F green
g turquoise
a Blue
B purple
small C pink

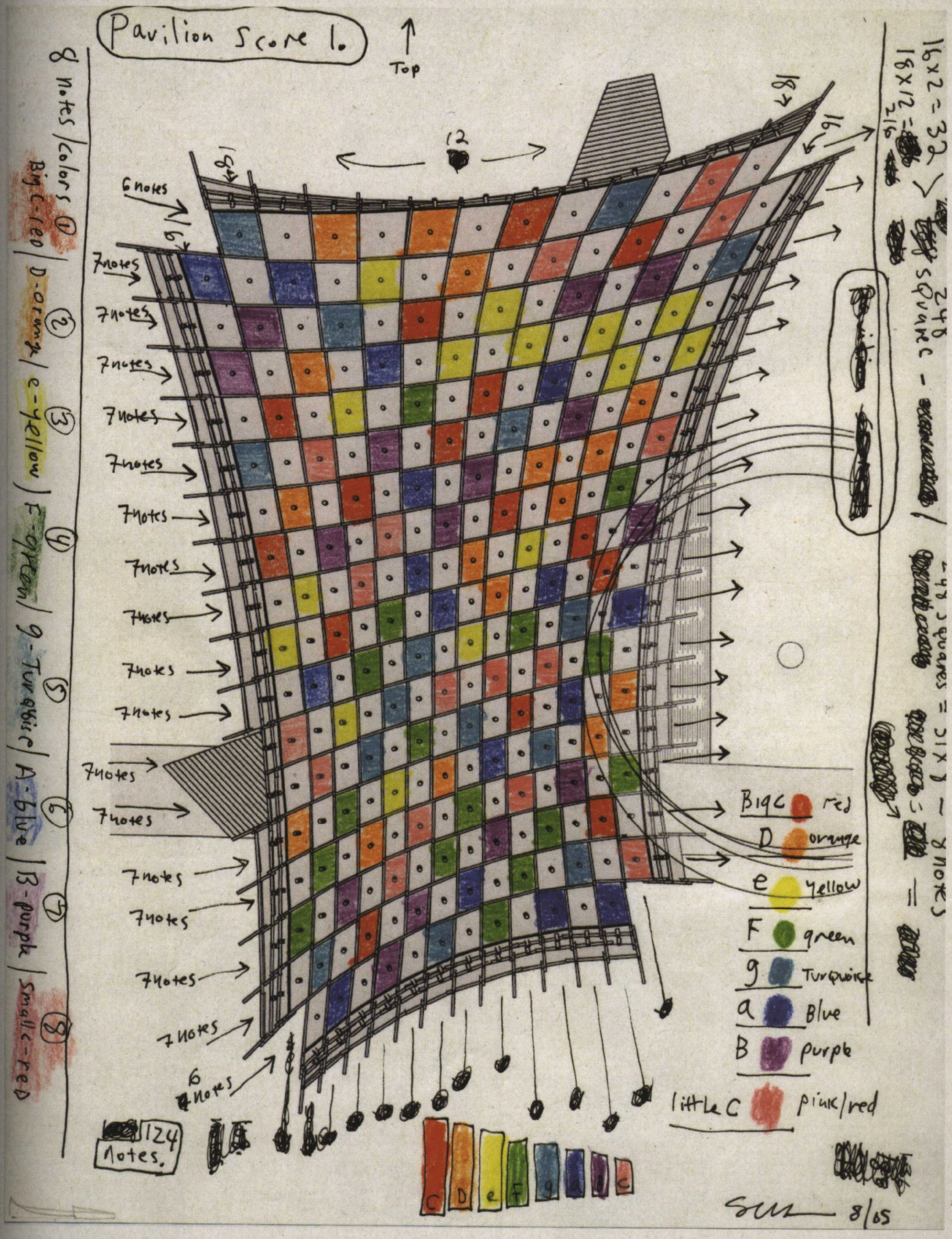
→ 2 notes.
→ 2 notes.
→ 6 clusters (12 notes.)
→ 2 notes
→ 6 clusters (12 notes)
→ 6 clusters (12 notes)
→ 2 notes
→ 5 clusters (10 notes)
→ 2 notes
→ 5 clusters (10 notes)
→ 2 notes
→ 3 clusters (6 notes)
→ 2 notes
→ 3 clusters (6 notes)
→ 2 notes
→ 2 notes
→ [illegible]
2 clusters (4 notes)

92 notes.

Perimeter Single notes,
interior two note clusters,

For two hands/mallets.

Lane 8/05


Pavilion Score 1.
Top
12
18
16
6 notes
7 notes
6 notes
124 notes.
8 notes/colors
① Big C-red
② D-orange
③ e-yellow
④ F-green
⑤ g-Turquoise
⑥ A-blue
⑦ B-purple
⑧ Small c-red
16x2 = 32
18x12 = 216
248 squares
248 squares = 31x8 = 8 notes
Big C red
D orange
e yellow
F green
g Turquoise
a Blue
B purple
little C pink/red
C D e F g a b c
8/05

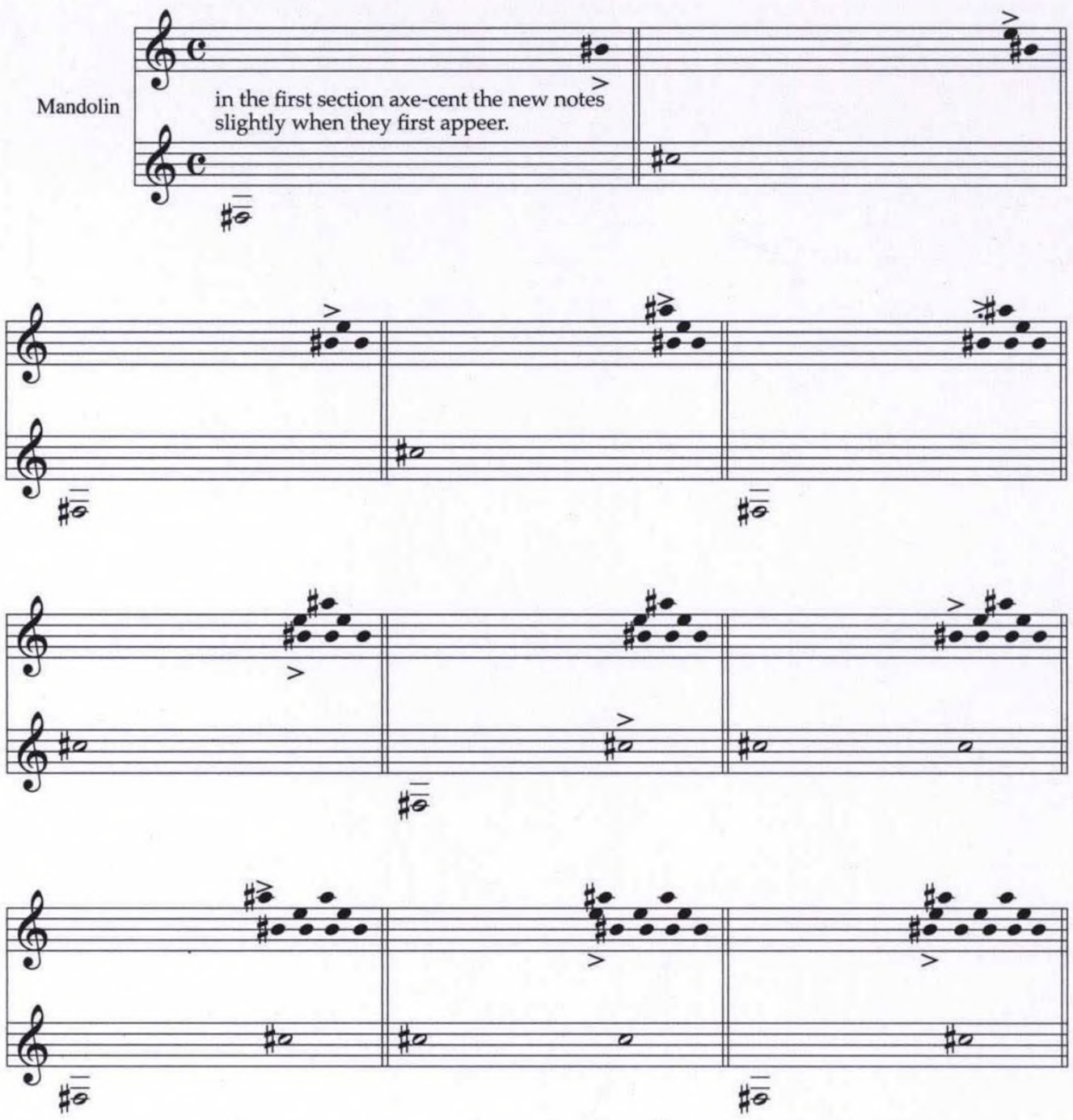
fruits

rodney (,) dirk

at the right speed, quiet, with delay

Mandolin

in the first section axe-cent the new notes
slightly when they first appeer.

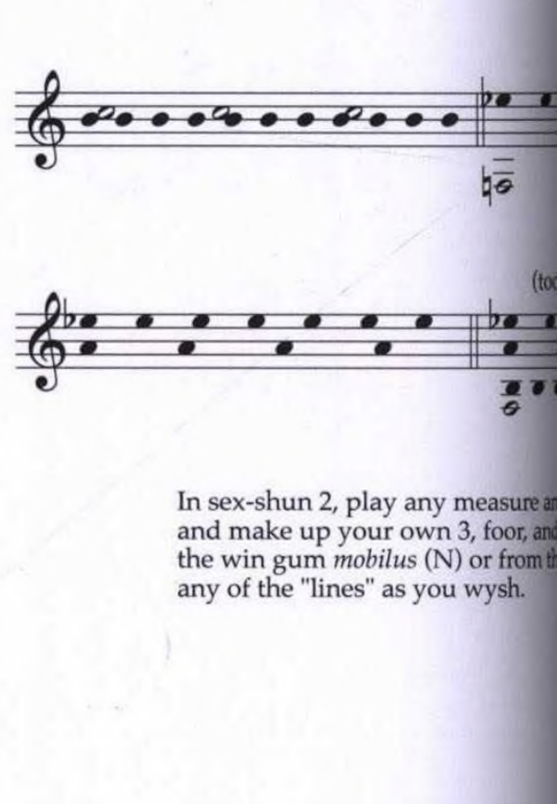


when I tell you, begin tuning the open string(s) down to the F harmonic series!
do it gradually, a little at a time for all the 2 [2 or 3] strings

Section 2

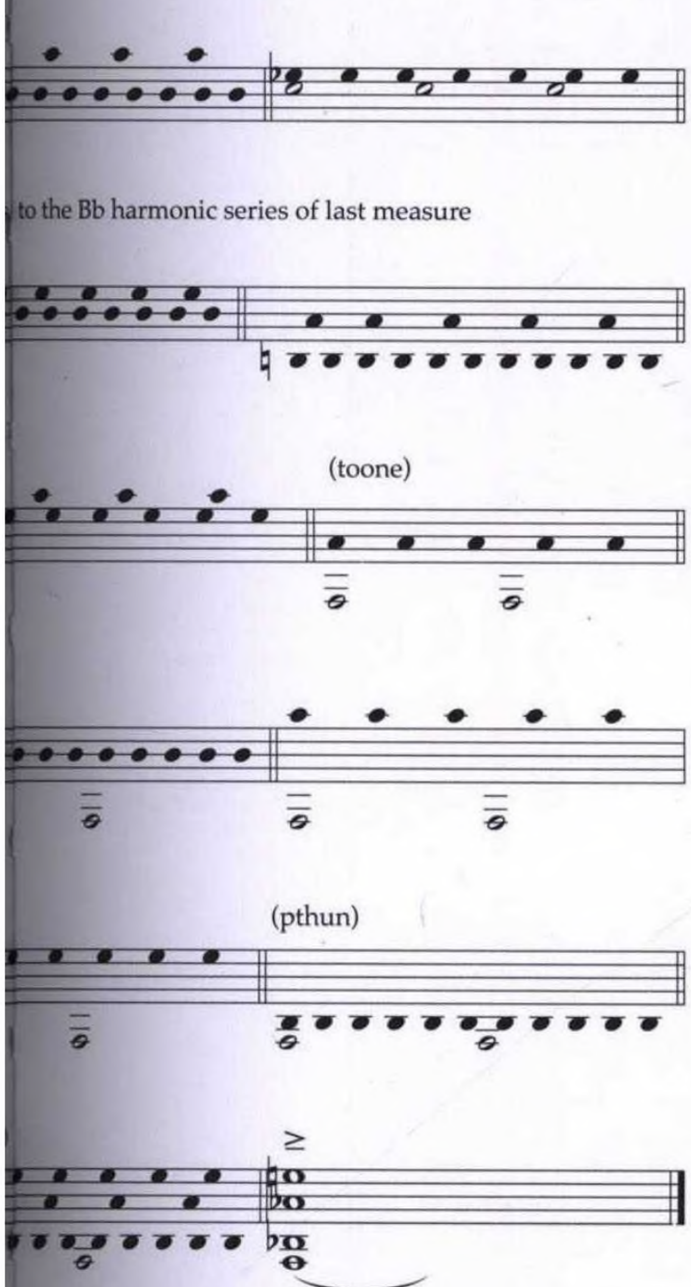
how many couples may dance with each other?

gradually tune, when playing open stri

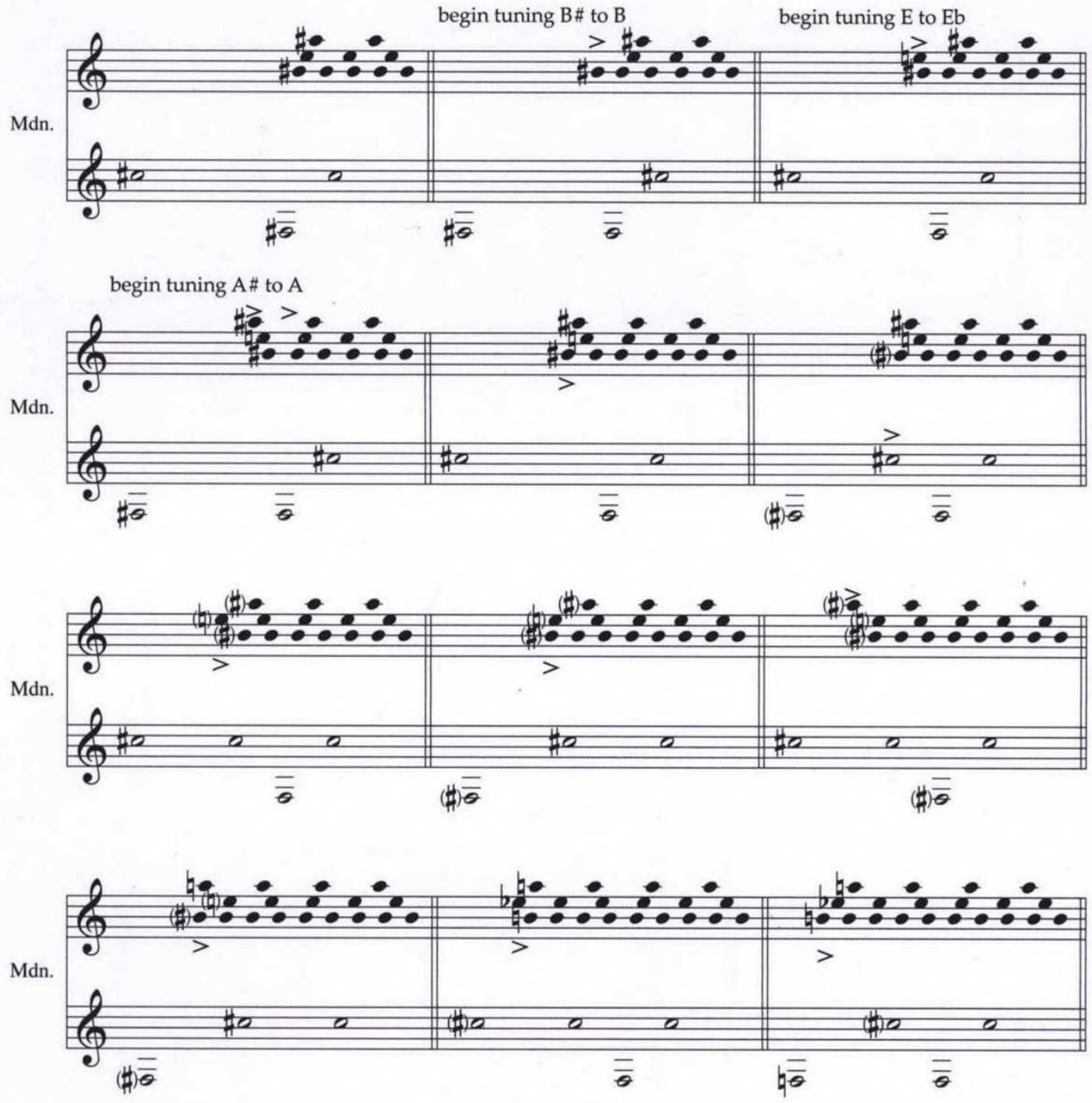


In sex-shun 2, play any measure a
and make up your own 3, foor, an
the win gum *mobilus* (N) or from t
any of the "lines" as you wysh.

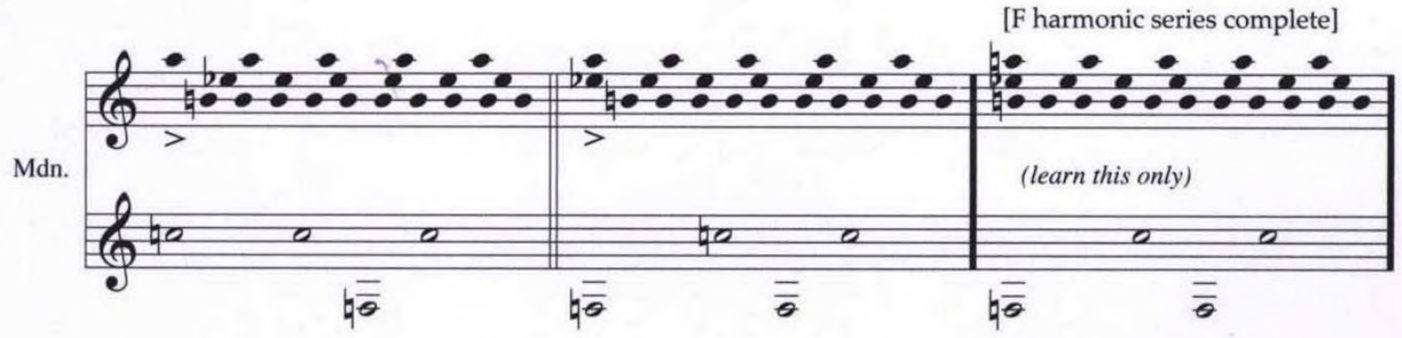
Dirk (,) Rodney; *Fruits*. For mandolin. Used by permission of Frog Peak Music, © 1963.



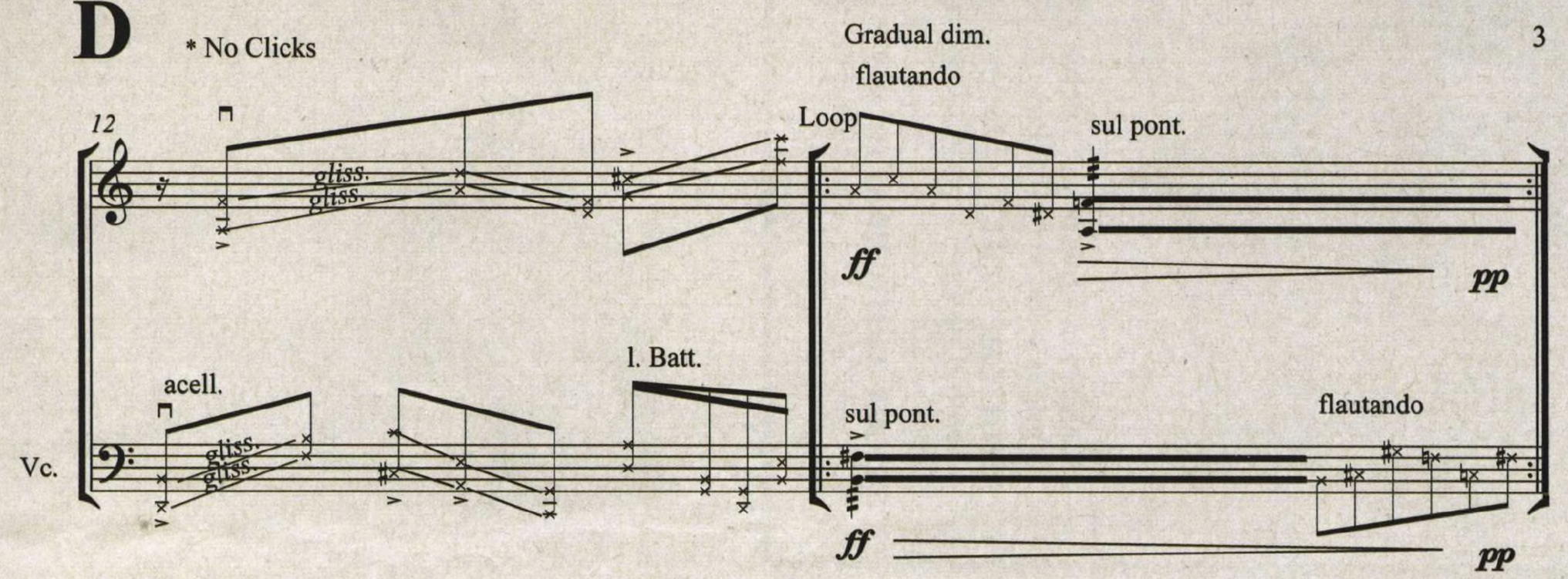
number of thymes. Play the measures in any disorder,
ve-nodte condemnations deerived from the measure marked with
last measure in sect-scion 1, or from both. Leave out notes in

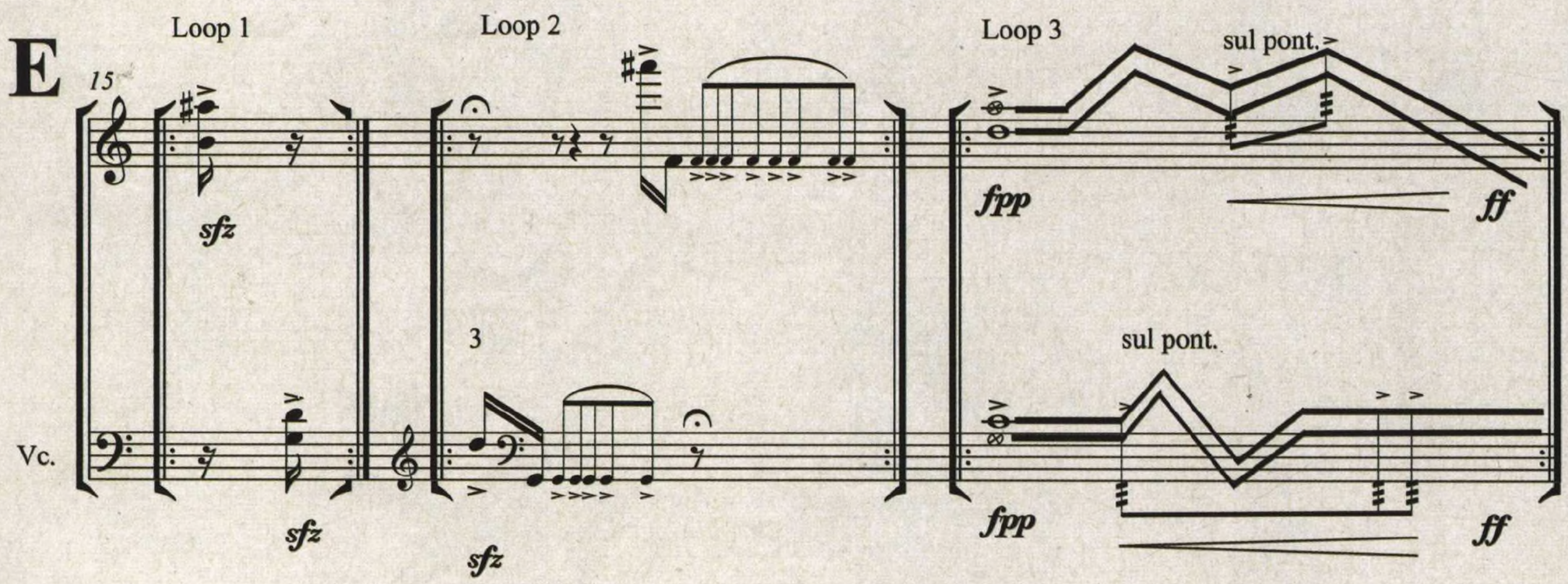


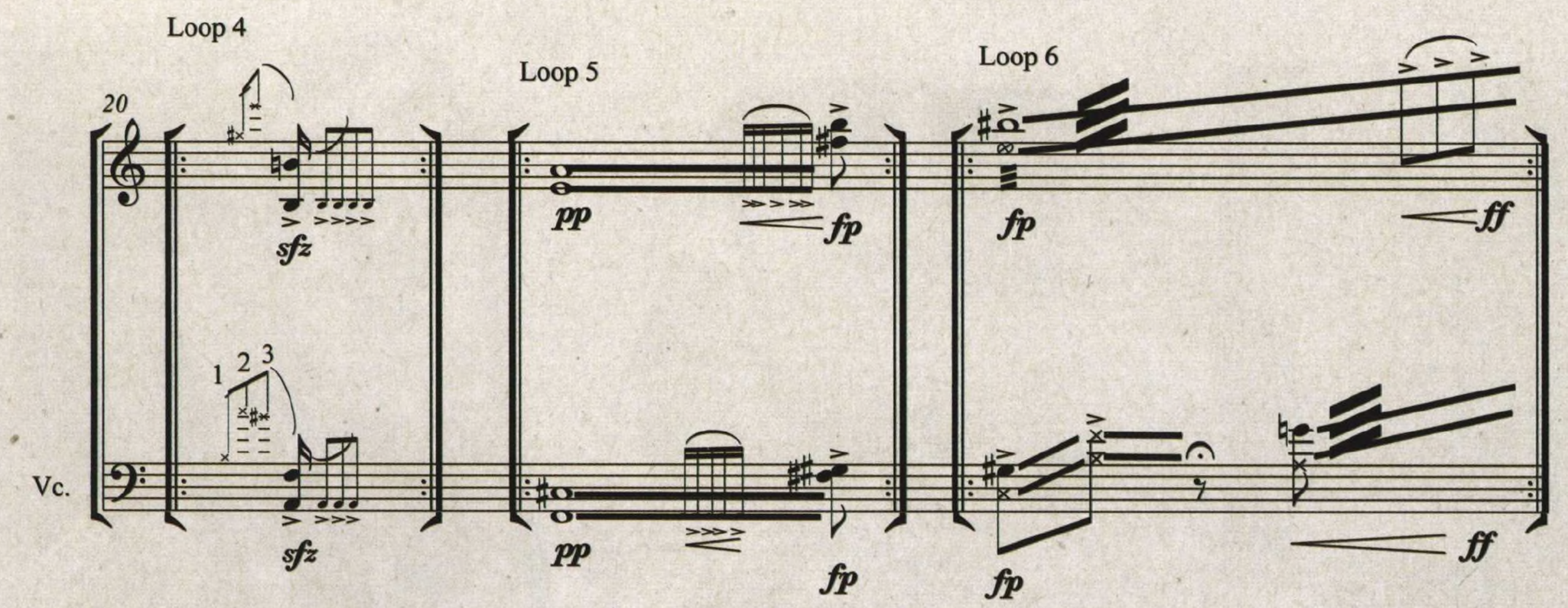
[F harmonic series complete]



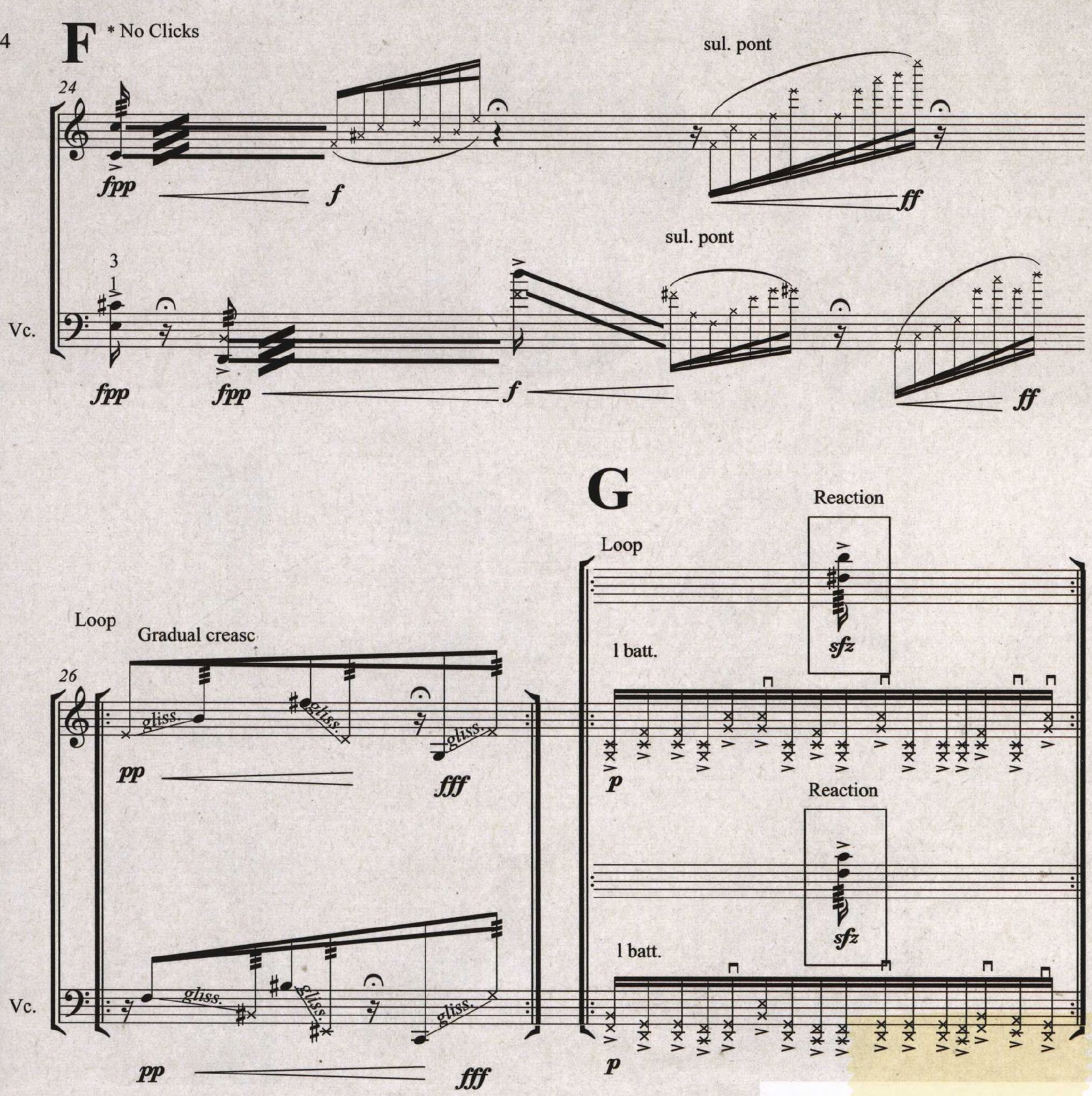
long live Henry I!







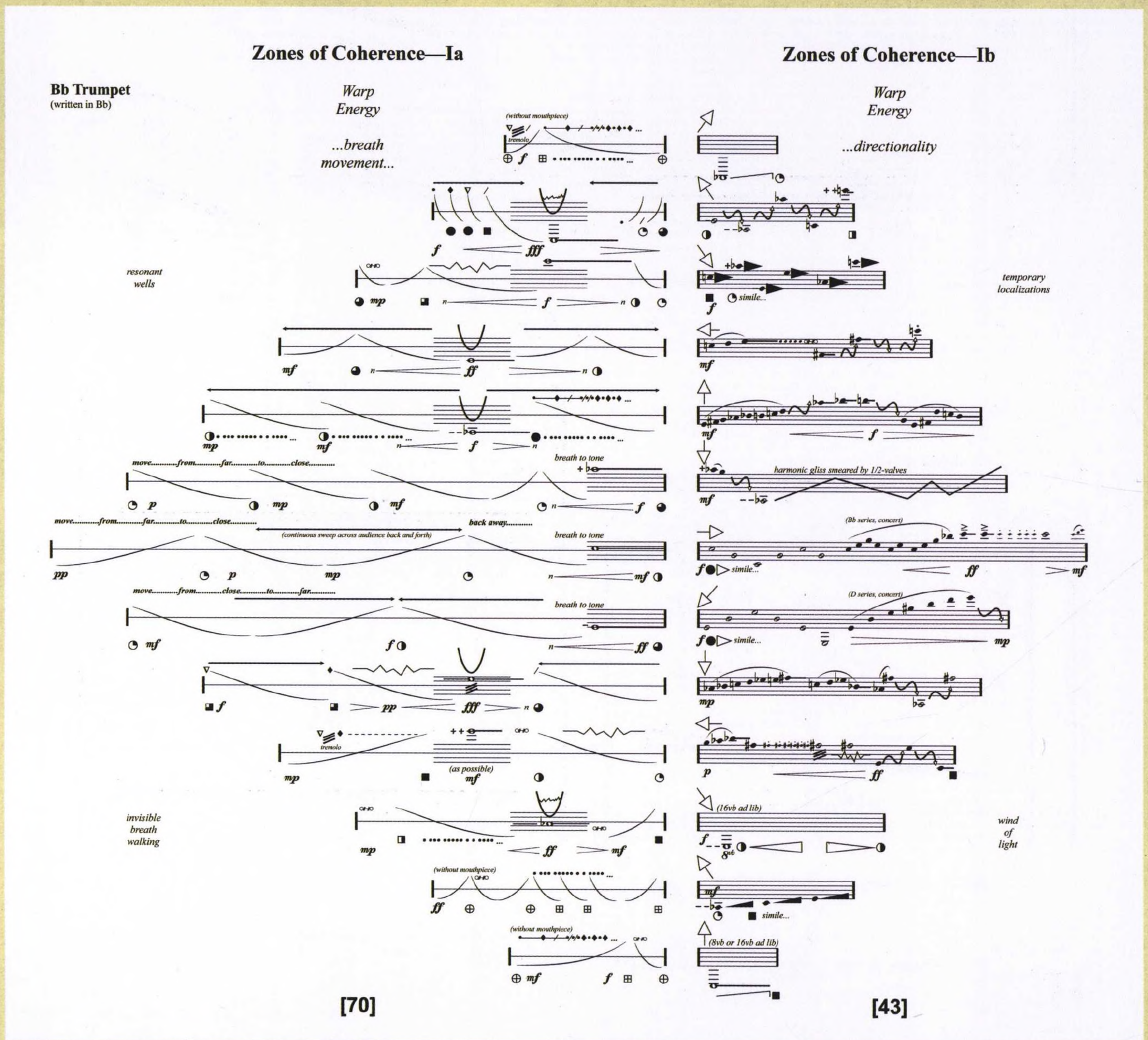
Keren Rosenbaum; *Inbetween*. For violin and cello, with earphone clicktracks. Used by permission of Keren Rosenbaum, © 2001.



Inbetween is written for violin and cello, both reacting to pre-recorded soundtracks.

The soundtracks are played through earphones during the performance and heard only by the performers—each performer hearing only his or her own soundtrack.

The soundtracks consist of letters A-L (indicated by voice naming the letters). Some of the sections include a series of clicks. The instructions for reacting to the clicks appear in the score. For the most part, the clicks indicate either movement from repeating one bar to the next; in other places the clicks trigger a specific reaction written in a square above the part.



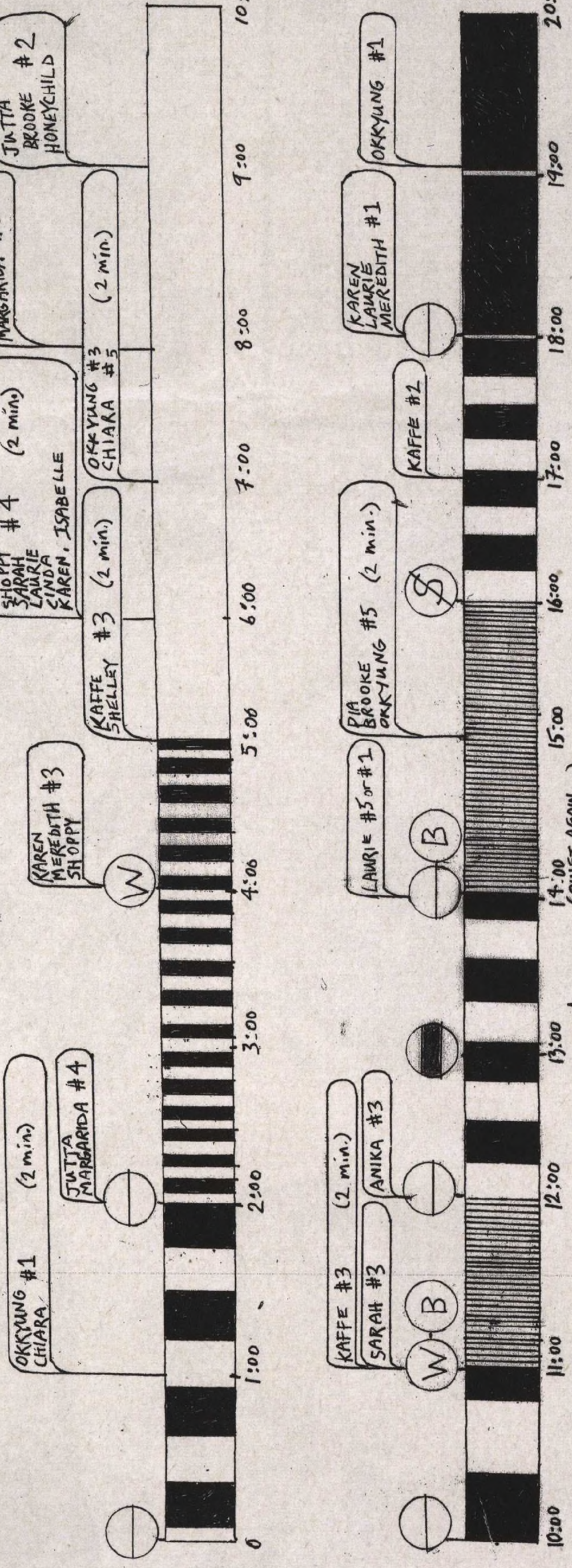
David Rosenboom; *Zones of Coherence*. For trumpet virtuoso. Used by permission of David Rosenboom, © David Rosenboom Publishing (BMI), 2003.

Zone of Coherence, in organic terms, is partly about the beauty of forms in nature reflected in the qualities of the trumpet itself and all of the human symbolism it contains. It is also about evolution and the spontaneous emergence of forms, a consistent theme in much of my music. The score for *Zones of Coherence* contains four musical configuration spaces. Inside each of these configuration spaces, musical time does not exist a priori. Each configuration space contains a collection of musical units, which may be combined and/or sequenced in a manner chosen by the performer. From the relationships manifested by the player among these distinct musical units, entwining and weaving them with their individual interpretations, their combinations, connections, sequences, links, warps, loops, and twists, a shared musical time-space is materialized creating the localized mass and energy of each individual performance. In this way, the performer is also invited into the creative process of the composition. The title refers to how zones of musical meaning emerge from a form in which the parts are modular, and though they require considerable virtuosity to master and arrange them in configurations, they are designed to be combined in many forms, each of which is equally musically coherent.

The musical material of each section moves through a progression, suggesting how the breath of life evolves into tone mediated by the trumpet, how breath energizes differentiated resonances, how the resonances organize themselves into scales, and how fluid lyricism emerges from this organization; characteristic virtuosity develops, rhythmic forms appear in a shared time-space, and virtuosity accelerates into clouds of complex, harmonic-temporal configurations. A synopsis might read: breath -> movement -> directionality -> resonance -> substance -> scale -> form -> construction -> virtuosity -> materialization of the present, a shared now. This reflects the natural form of the trumpet itself as an articulator of life, its flared bell symbolizing the exponentially expanding potential for human awareness awaiting its full realization.

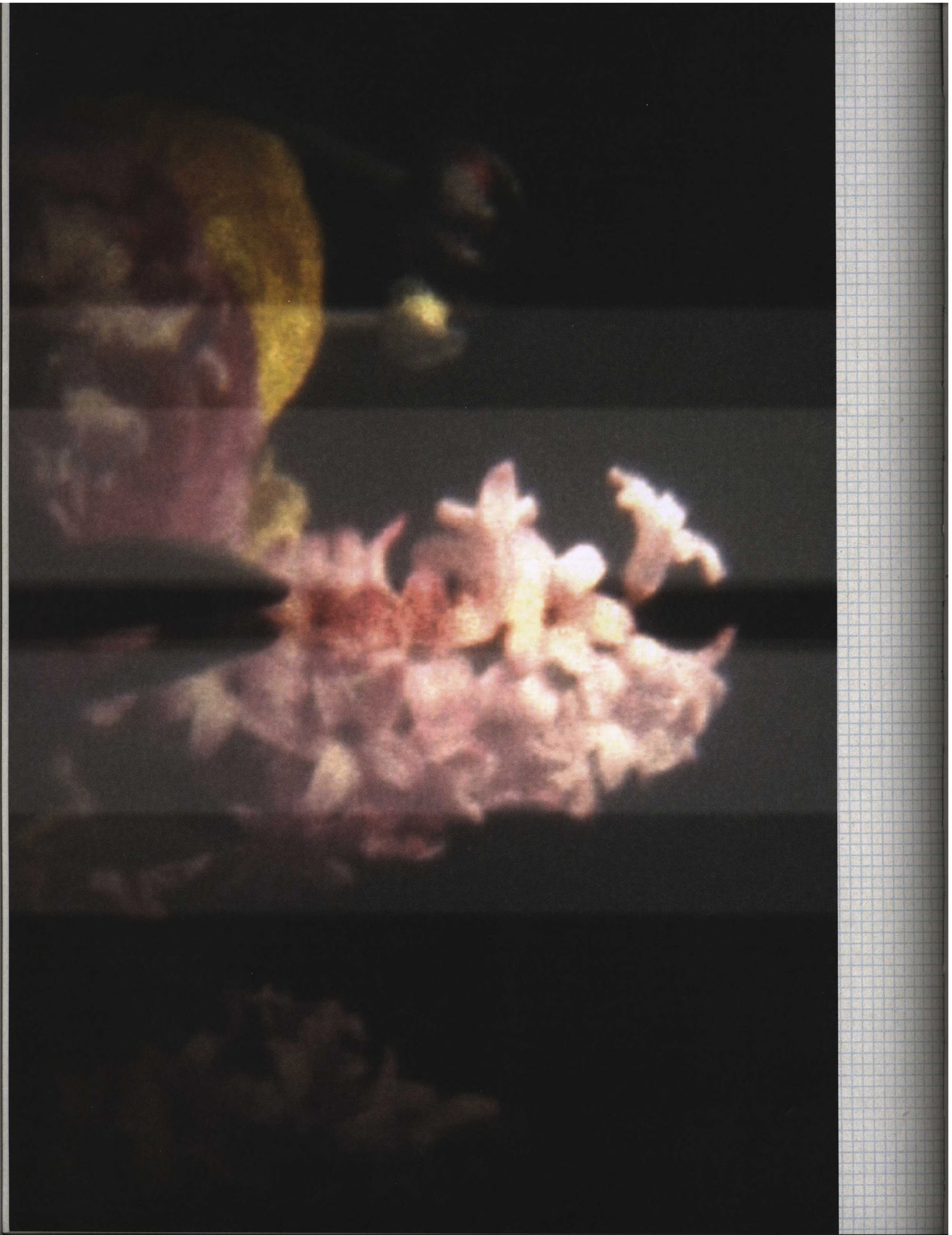
The natural resonances of the three-valve trumpet's physical structure with all its eight possible valve combinations provide important metaphors for architectural components of the composition. These sometimes result in "altered" tunings, deviating from common practice, equal-tempered tuning. They are also related to links found among the overtones of the pitches $B^{\flat}$, D, and $G^{\flat}$, which reflect the beauty in special forms of nature described by the expression, $1/p=1+p$ where $p=(\sqrt{5}-1)/2$. These are evident in the appearance of three important ratios: 70:43, 13:8, and 8:5. Relationships like this are deeply imbedded in both the harmonic forms and structural proportions of the score.

The score's cover sketch, viewed horizontally, depicts a mountainous horizon line viewed from the composer's back yard, suggestions of foliage, and a configuration time-space created by the most commonly used flight paths and landing spots for the birds in this ecosystem. X's mark these spots, lines are the flight paths, and X's in circles indicate commonly used points from which the birds enter or exit the space. In this system, as in *Zones of Coherence*, one feels the elastic tensions among each differentiation in the space, shifting positions creating individual nows, delineating the relationships in energy-matter-time-space (EMTS) we need to preserve our own self-differentiation.



Above: Marina Rosenfeld; *Emotional Orchestra*. For electro-acoustic string orchestra. Used by permission of Marina Rosenfeld, © 2003.

Opposite: *Whitelines*. For large-scale ensemble and custom instrumentation. Used by permission of Marina Rosenfeld, © 2005-2007.

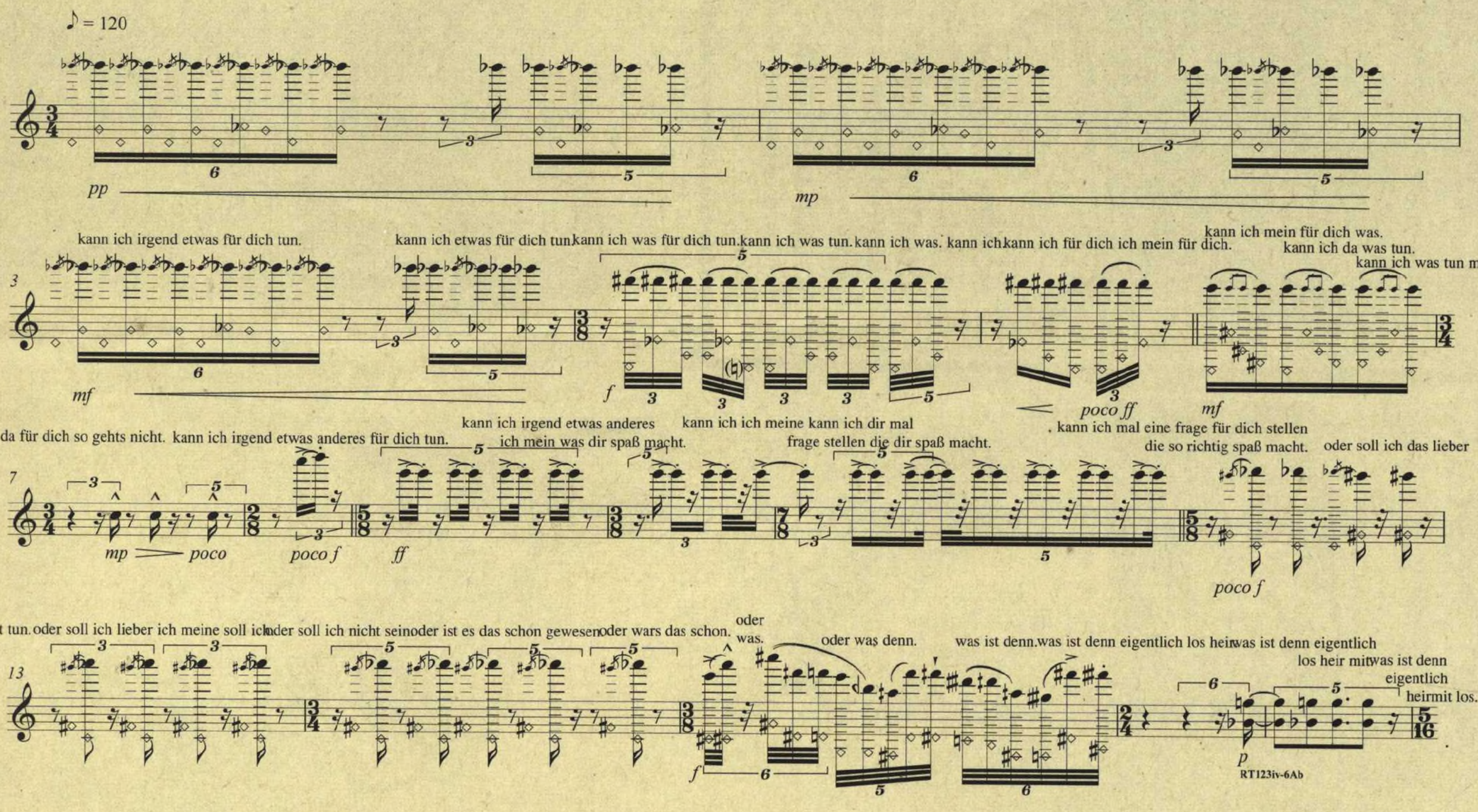


ende gut, frage.

Michael Lentz, text

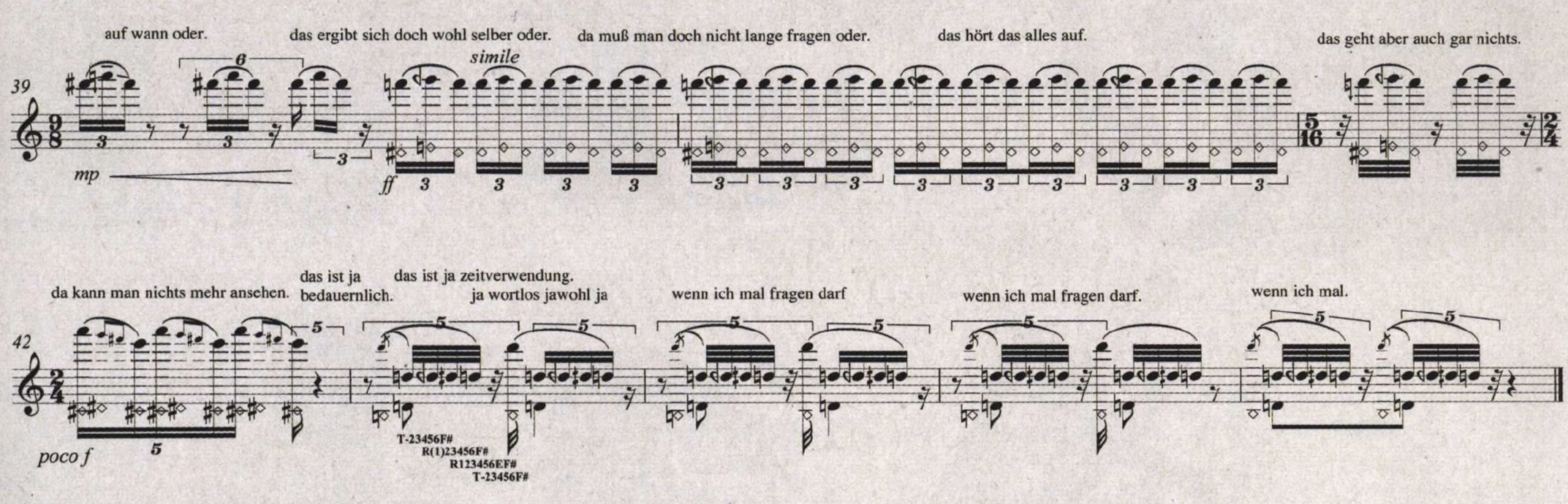
Daniel Rothman, music

Bb Klarinette und einen fragesteller mit mockingbird obbligato



Daniel Rothman; *ende gut, frage*. For clarinet in B♭ and mockingbird obbligato.

Used by permission of Daniel Rothman & Michael Lentz / Edition Selene, © 2001.



ende gut, frage: Edvard Grieg, whose *Morning Mood* remains a favorite of birdsong-starved city dwellers fixed to their classical radio stations, did not know the years—year after year—a mockingbird returned to announce the start of mating season not long after midnight from the crackling power line with which he competes behind my Venice, California, home as I do. Poet Michael Lentz, who created *ende gut, frage: kleines solo für einen fragesteller (little solo for a question-asker)*, an acoustic apparition conspiring with my clarinet—frightening off the mockingbird by mocking its own sound print—thus establishes the linguistic relationship between birds and man confirmed by Dr. Stephanie White (UCLA), who identified our common FoxP1 and FoxP2 genes.

Performance note: diamond-shaped note-heads indicate the fundamentals upon which the sounding pitch above it is produced; multiphonic fingerings correspond to the note combinations above them.

THERESA SAUER

Theresa Sauer; *Parthenogenesis*. For da'uli da'uli and an unspecified number of female voices. Used by permission of Theresa Sauer, © 2007.

MOTHER : /Indo?/

BIRTH = 1) /Ancazingang/
2) /Jaji/

LIFE = 1) /Atuwongeng/
2) /Tuwo/

child = /Anana?/

Virgin = /Ana? Dara/

Parthenogenesis: This piece is written for da'uli da'uli and an unspecified number of female vocalists.

The mother Komodo dragon and her genetic code are the source of all the lines and other designs within the score. The newborn dragon coming out of its shell, glowing with new life and power is different from its mother and presents a unique genetic code. The vertical lines should intuitively guide the strikes of the da'uli da'uli, which will then, in turn, guide the vocalists in pitch and rhythm. As guided by these lines, the speed and intensity should both diminish throughout the duration of the piece. There is no set duration.

The lyrics for *Parthenogenesis* are in Bugis, the language spoken on Komodo Island. Indonesian photographer Basok Nasruddin, known as Mr. Bee, performed the phonetic translation for these lyrics. The vocalists begin singing the words in the order in which they are presented, but should one vocalist wish to continue singing the previous word or words, the group may create a layered effect. The piece is primarily improvised.

Parthenogenesis

The great, terrible monsters of Indonesia, Komodo dragons, who are the inspiration for many dragon mythologies, have the unique ability (like many other creatures) to reproduce without the aid of males. This process is called "parthenogenesis," which is a word made of two Greek roots: "genesis," as one would suspect as the name of the Old Testament's first chapter, means "birth." "parthenos" means "virgin," which is the state of these female Komodo dragons when they produce their marvelous offspring. But parthenos has special implications beyond just any form of asexual reproduction.

Parthenos applies, as it does to the Greek temple, the Parthenon, specifically to the Goddess Athena.[1] Her father, Zeus, king of all the gods, out of jealousy, swallowed the goddess Metis, whom he had accidentally made pregnant, and who was the goddess of wisdom and cunning. Metis's spirit, not to be completely decimated, began to hammer a helmet for her fetal child while inside Zeus's body. Zeus's head felt such horrible pain that it split in half. From that split emerged Athena, the creator of all civilization.[2]

The Athena story, while without question a tale of the feminine power of creation, is not the universal tale of parthenogenesis. This story, as analyzed in Joseph Campbell's *Power of Myth*, typically involves a human woman of extraordinary nature giving birth not with the seed of man, but by the power of God. In the Greek tradition, it is the birth of Heracles, or (in Latin) Hercules, the son of Zeus and a mortal woman, Alcmene. Dating back to before the 7th century BCE, this grimy tale of jealousy and humanized gods parallels the Persian/Greek cult of Mithras in the 1st century BCE Mithras's origins were more mysterious and therefore more celestial in nature: he was a god (of some great power) born (somehow) to a virgin woman.[3] This story culminates itself in, of course, the birth of Jesus Christ, God and Son of God, to the Blessed Mother, the Virgin Mary, arguably the most important parthenogenic origin in world history. That Jesus was born to a virgin without any human father is important for the following reason: according to the Christian scripture, sin is transmitted to the offspring through the father.[4] The mother imparts no sin to her child, only life.

Parthenogenesis is not merely a Western phenomenon. The Buddha was born to his mother, Queen Maya, through a dream of white elephants, and emerged from her side, leaving her body unaltered. In Egypt, it was the great god Osiris who, although dead, conceived the god Horus with his wife, Isis.[5]

Many of the best stories of parthenogenesis come from the New World. The Hurons believe that Deganawidah, the godlike leader of the Onondaga tribe, was born to a virgin woman, who had been given a special message from the Creator spirit, that she would bear the child who would bring the Tree of Peace to her people. A very holy and religious virgin, Coatlicue, conceived Huitzilo-

pochtli, the Aztec god of the sun, as she cleaned the temple. A ball of feathers fell upon her, actually the god Mixcoatl, god of the hunt, and rewarded her with power and a powerful child.

Parthenogenesis can be described as a mere trope of divinity, but it can be interpreted as far more. Parthenogenesis is the creation, by a human woman, of God, by God, without the aid of a human man. It is the power of a woman to create God, and, like Athena, create civilization, knowledge, learning, music, art, strategy, and the home. When a woman creates, not as a tool of man, but as an instrument of God, she creates the most powerful forces in the universe.

Women, through their powers of regeneration, can channel God in ways that men cannot. Men are not needed in the stories of parthenogenesis. Indeed, genetic historians like Bryan Sykes have proven that men are really not necessary at all for the continuation of life on earth—and that their Y-chromosome is degenerating, falling away, to one day no longer exist,[6] leaving only Woman and God.

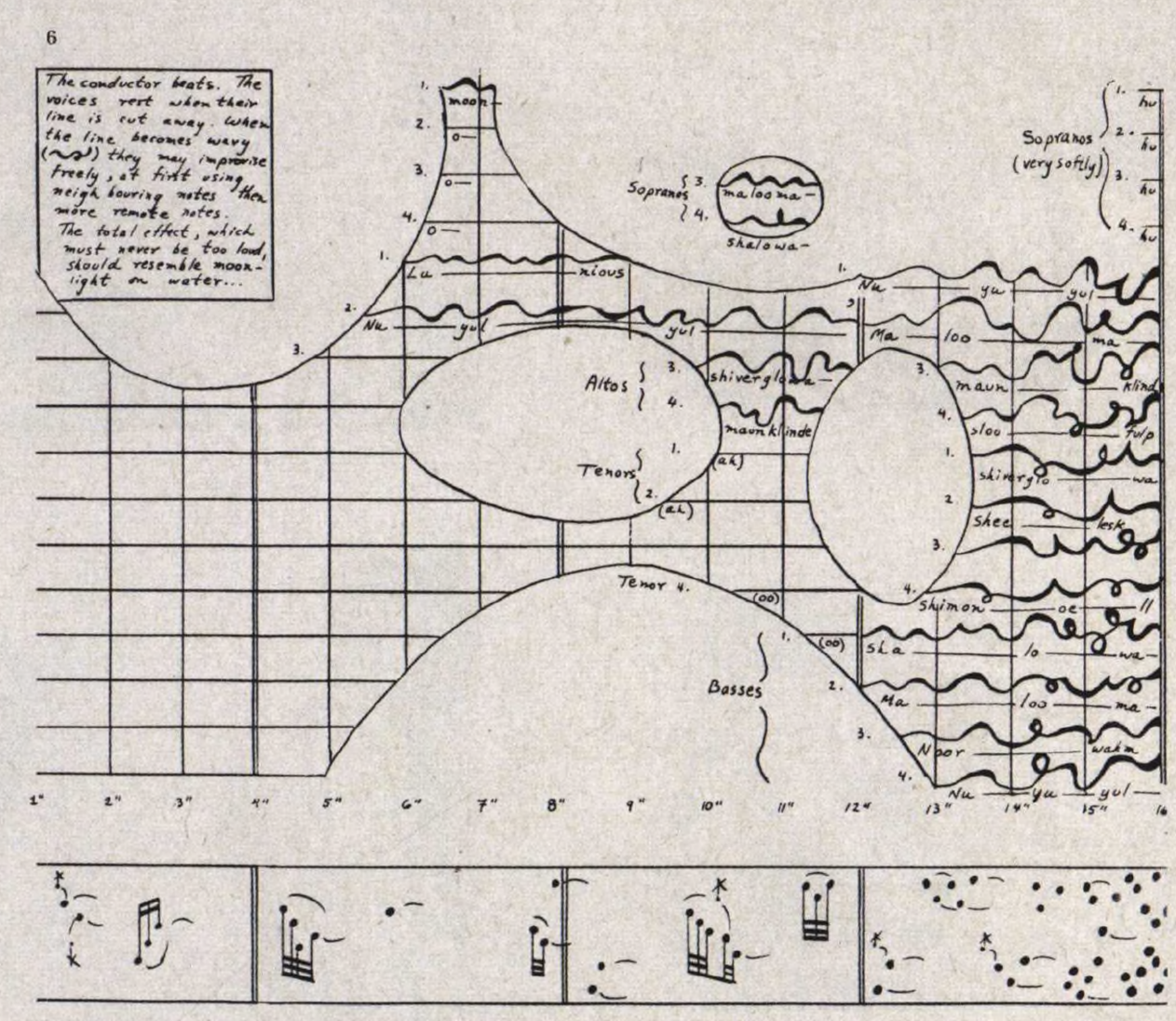
Women have always had a special creative connection with God. Christian Spanish mystic, St. Teresa of Avila, wrote *Il Castillo Interior*, or the *Interior Castle*, while under the power of God, describing the nature and strength of the contemplative soul. The Afro-Cuban Santeria tradition is almost always led by a priestess of incomparable ability to channel energy and gods. There are the witches, past and present, whose relationship with nature and God was so threatening to men that they have, throughout history, been put to death, again and again. In the Philippines, there exist great numbers of women with glossolalia, or the ability to speak in tongues. Rapture with God, or harnessing the power of God is, truly, a female experience.

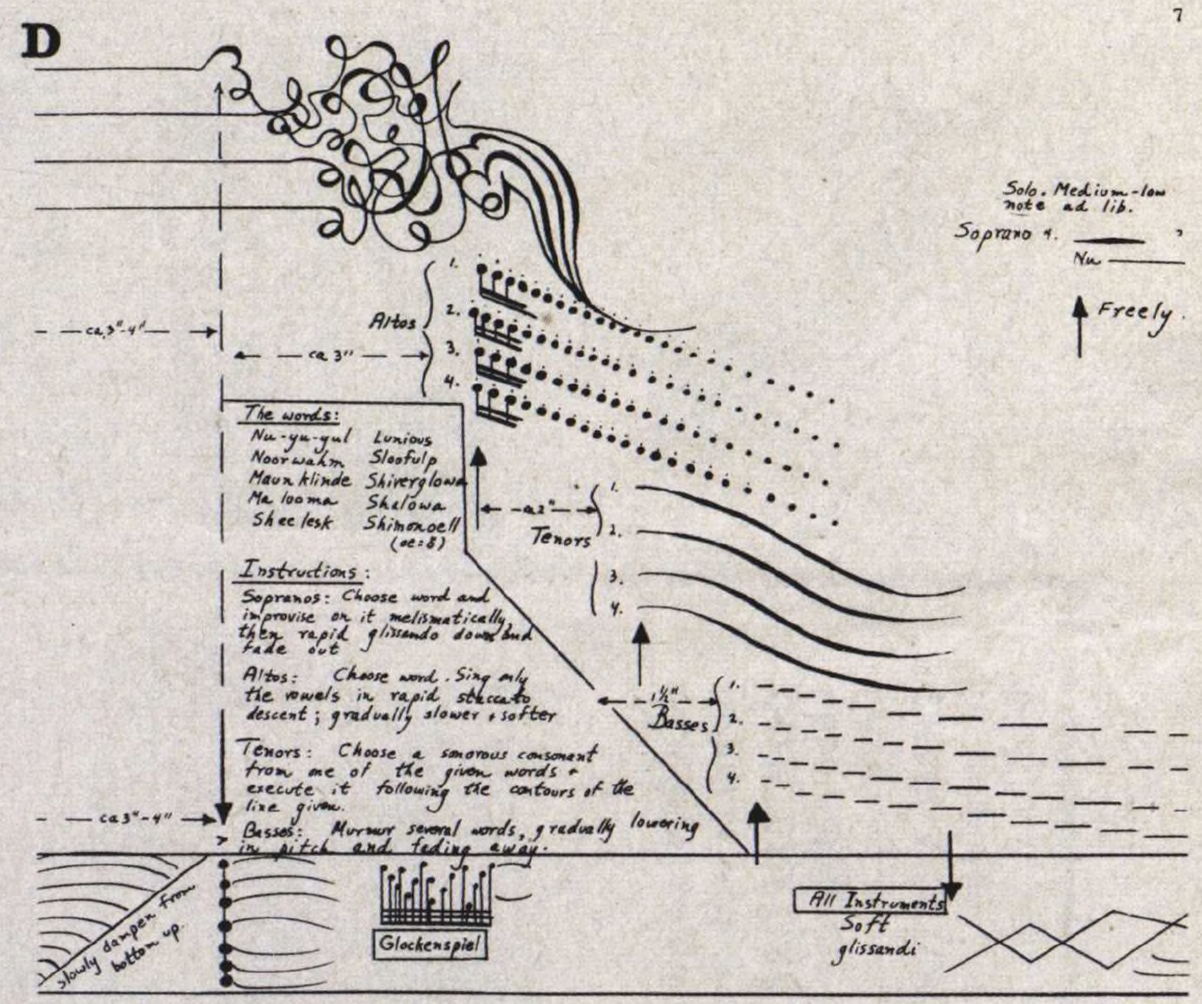
Women, are, to complete the idea, the true Dragons—the vessels of mythology, the creators of God. My composition would like to say how women are the mothers of creativity for their children as well.

About the da'uli da'uli: it is a kind of xylophone from Nias, Indonesia (also found in Madagascar), which consists of three or four loose pieces of resonating wood, sometimes flat but often with a rounded cross section. These can rest across the legs of a seated player, or across a hole in the ground; sometimes they are laid on top of a wooden box. You strike them with wooden mallets. Among their many performance contexts are festivals surrounding rice harvests; on these occasions, they are usually played by women.[7]

1 MARINUS OF SAMARIA, "The Life of Proclus or Concerning Happiness", Translated by Kenneth S. Guthrie (1925), pp.15-55:30.
2 HESIOD, Theogeny 890ff and 924ff.
3 CUMONT, FRANZ, Texts and Illustrated Monuments Relating to the Mysteries of Mithra. *Brussels, 1896.*
4 ROMANS 5:12, 17, 19.
5 PLUTARCH, On Isis and Osiris XIIff, XIVff, XVIff, XVIIff, and XVIIIff.
6 SYKES, BRIAN. Adam's Curse. *New York, W.W. Norton, 2004.*
7 Instrument Encyclopedia *(University of Michigan, 2007).*

R. MURRAY SCHAFER





Epitaph for Moonlight is a study-piece for youth choir. It is an ear-training exercise, for the singers must learn to pitch their notes by interval from any note given. It is understood that while the piece contains few dynamic markings, it is soft almost always. Dynamics are indicated by the thickness of the line. A thin line is a soft sound, a heavy line a loudish one.

Bells, glockenspiels, metalophones, vibraphones, and a suspended cymbal with a wire brush (indicated with a symbol) can be added to the choir if desired. If used, they play coloristic effects very softly and need not harmonize with the choir, except where indicated.

I once gave a seventh-grade class the assignment of finding suitable synonyms for the word "moonlight"; new words in a private language were to be invented that expressed in sound the concept of moonlight. The text of the present composition consists of some of these synonyms: Nu-yu-yul, Noorwahm, Maunklinde, Malooma, Lunious, Sloofulp, Shiverglowa, Shalowa, Sheelesk, Shimonoell, Neshmoor.

R. Murray Schafer; *Epitaph for Moonlight*. For mixed chorus and percussion ad libitum.

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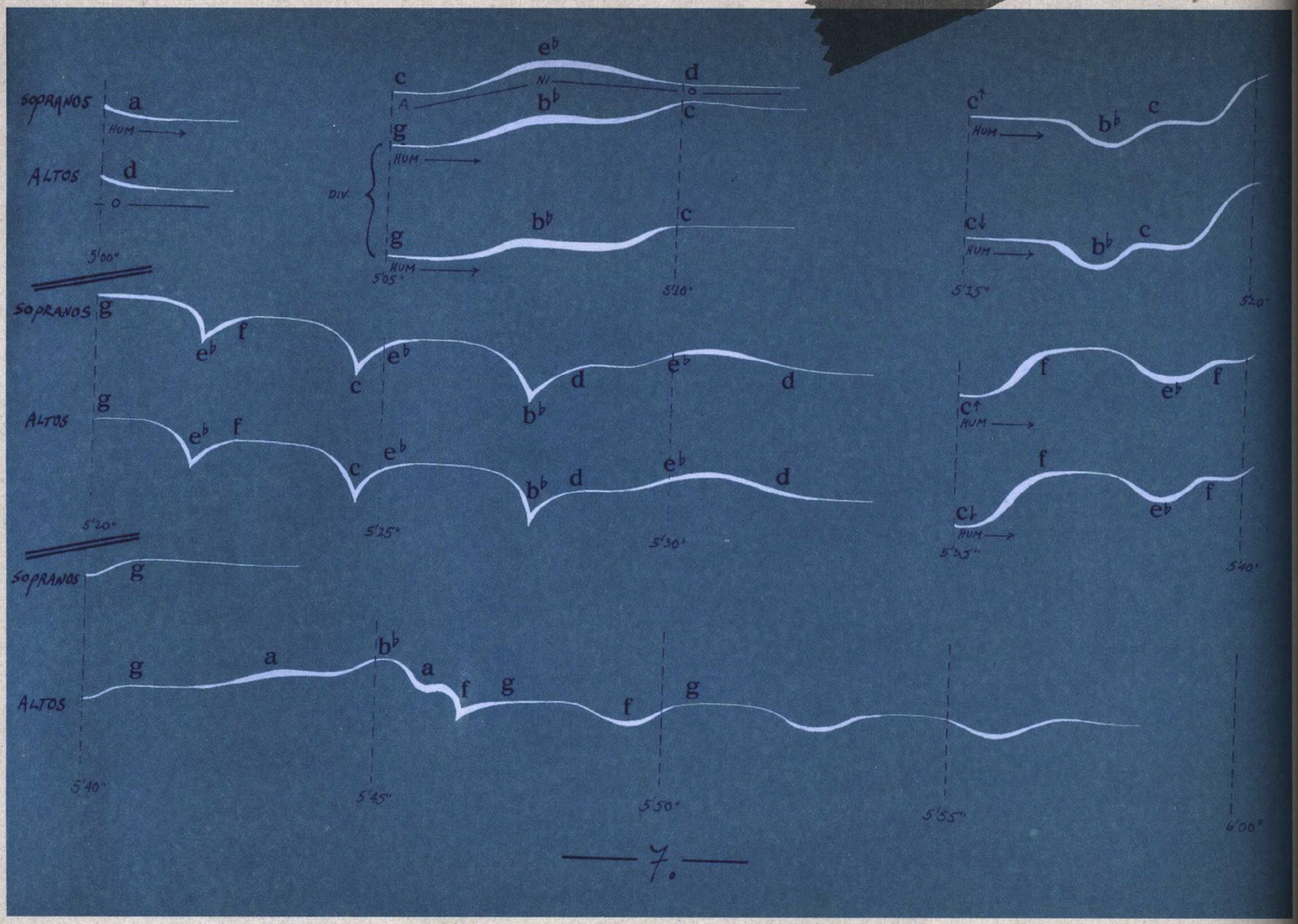
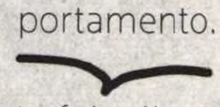
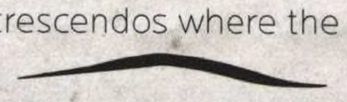
R. MURRAY SCHAFER



R. Murray Schafer; *Snowforms*. For high chorus. Used by Permission of R. Murray Schafer / Arcana Editions.

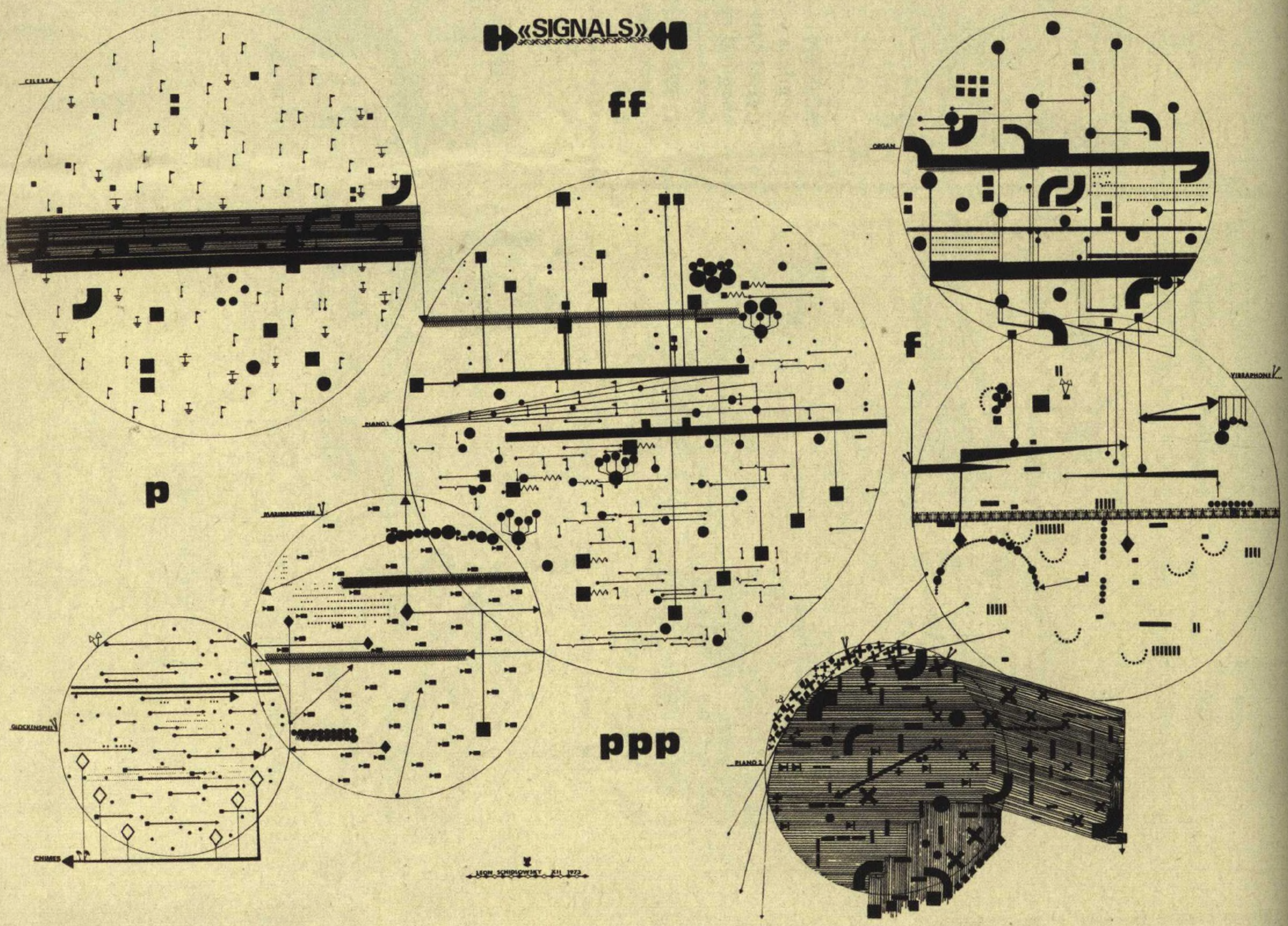
R. MURRAY SCHAFER

Snowforms: In 1971, I flew the polar route from Europe to Vancouver over Greenland. Clear weather provided an excellent opportunity to study the forms of that spectacular and terrifying geography. Immediately I had an idea for a symphonic work in which sustained bulks of sound would be fractured by occasional splinters of color. The work that resulted was the orchestral composition *North-White*. I now return to the subject of snow, but in a very different sense, for it has been the habit of observing the soft foldings of snow from my farmhouse window in Ontario that has inspired *Snowforms*.

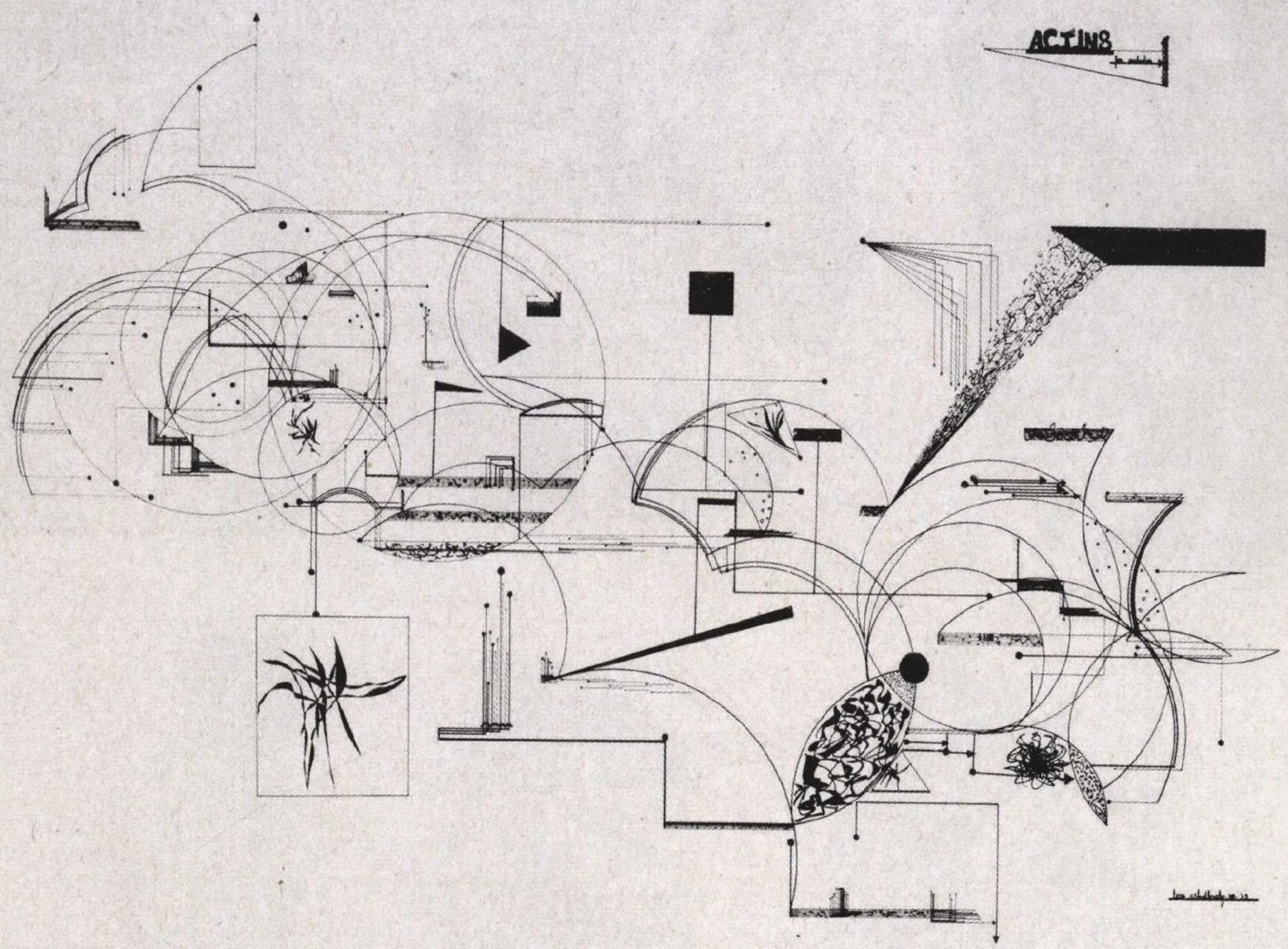
Sometimes I have given children "sight-singing" exercises in which they are asked to "sing" drawings or the shapes on the distant horizon. Thus, in the present composition—which is really intended for children to sing, listen to, and perhaps draw pictures to—a graphic notation is used, augmented by pitches written close to the lines. The voices should glide from one note to another in a continuing portamento. An abrupt curve such as  suggests that the lower point of the line gets a short note, which a more continuous curve suggests a lingering and slow glissando. A time log is given to suggest durations but conductors should not feel enslaved by it. An arrow beside a pitch designates the lower or upper octave. *Snowforms* should be performed very quietly with slight crescendos and decrescendos where the line thickens or thins.  The words which alternate with the humming are some of the many Eskimo words for snow, and their meanings are given where they occur. All vowels are long: "u" is pronounced as "oo" and "i" as "ee."

LEÓN SCHIDLOWSKY

«SIGNALS»



León Schidlowsky; *Signals*. For 2 pianos. Used by permission of León Schidlowsky, © 1973.



León Schidlowsky; "Music for Piano and Winds" from *Tetralog*. For piano and wind instruments.

Used by permission of León Schidlowsky, © 1972.

CATHERINE SCHIEVE

Catherine Schieve; *Rock and Light Tracing*. For version 2 of the Grainger Free Music Machine.

Used by permission of Catherine Schieve, © 2006.

Catherine Schieve; *Attunements*. Installation/Performance piece for Illwarra acoustic spaces, Shruti Boxes, Balafon, Ecuadorian shaman's drums, and other non-Western instruments; *Aviary*. For the reconstructed Cross-Grainger Electric Eye Tone Tool 2. All used by permission of Catherine Schieve, © 2006.

Atunements: *[attunement: adjust to, harmonize with, adapt to, acclimatize to, assimilate]* The idea of the *Attunements* project is to meet and "play into" an environment with one's own sound, so that the performed sound melds with and speaks to the existing sound world in an encompassing and non-virtuosic way. Currently I am working between the forest escarpment, ocean coast, savannah bushland, and steel mills of the Illawarra (Wollongong) region, playing Shruti Boxes (Indian reed drone instruments), Balafon (West African marimba), Ecuadorian shaman's drum, and other non-Western instruments. The result is a collection of encounters and "playings with" these distinctive acoustic spaces; and a gathering of different worlds into one concert space. A large floor drawing was prepared in the days preceding the performance.

Aviary is a work commissioned by the Australian Broadcasting Corporation for the reconstructed Cross-Grainger Electric Eye Tone Tool 2, a machine designed by Warren Burt that closely emulates the structure and function of the original photocell controlled machine built by Percy Grainger and Burnett Cross in the 1950s. This version of the machine has 7 oscillators. The pitch and loudness of each of these oscillators can be controlled by diagrams painted on a plastic sheet that rolls over the photocells. *Aviary* has two layers—one made by flicking paint brushes in front of the photocells, capturing in sound the action of making the score, and a live performance score, which is a large painting that is rolled across the photocells in real time, making glides, swoops, and dramatic twittering musical gestures.

Rock And Light Tracing is a visual score composed for version 2 of the Grainger Free Music Machine and premiered at the 2006 Sound Symposium. This Free Music Machine uses light sensors to convert light-blocking patterns on transparent plastic to computer-generated sound; in this case, sine waves. *Rock and Light Tracing* was composed combining found lines and tracery from the granite surfaces of Enchanted Rock, from Texas, with the slate stone from Newfoundland, Canada. The score is passed freely and theatrically in the air above the light sensors, creating complex shadows and sound patterns.

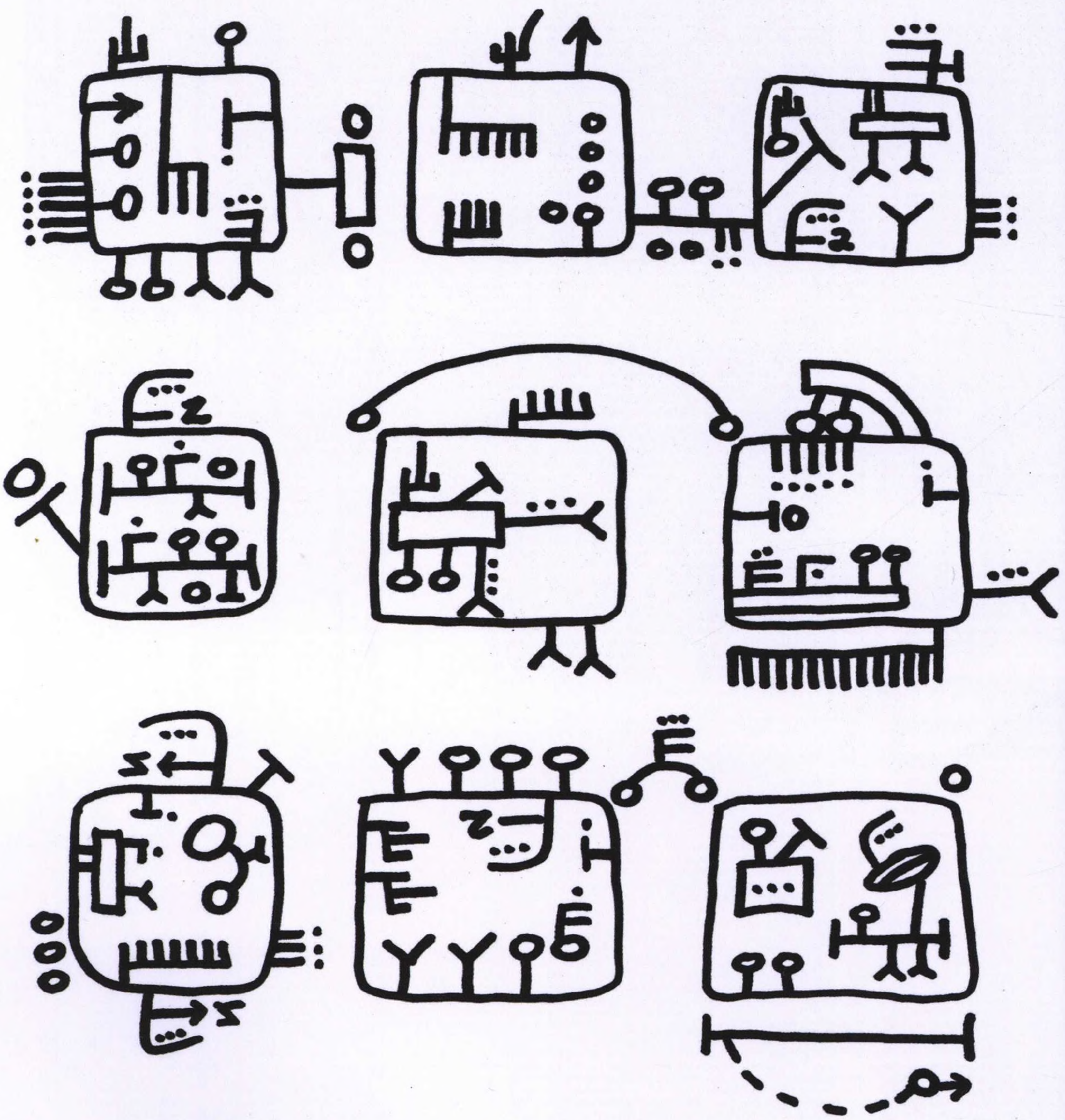
CATHERINE SCHIEVE

Catherine Schieve; *Blueline*. Used by permission of Catherine Schieve, © 2006.

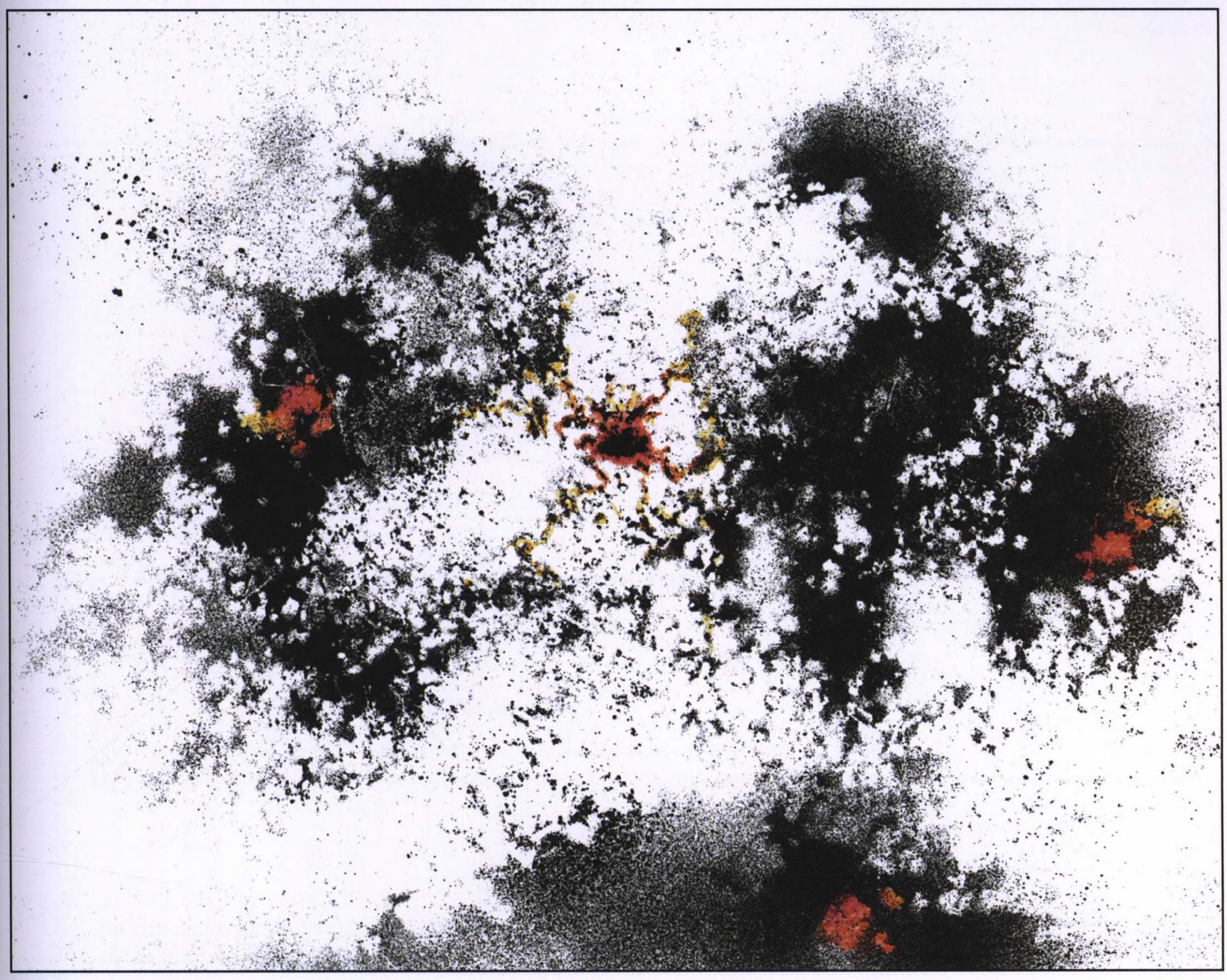
DANIEL SCHNEE

CHOLLOBHAT

© 2007 SCHNEE



Daniel Schnee; *Chollobhat*. For saxophone or variable instrumentation. Used by permission of Daniel Schnee, © 2007.



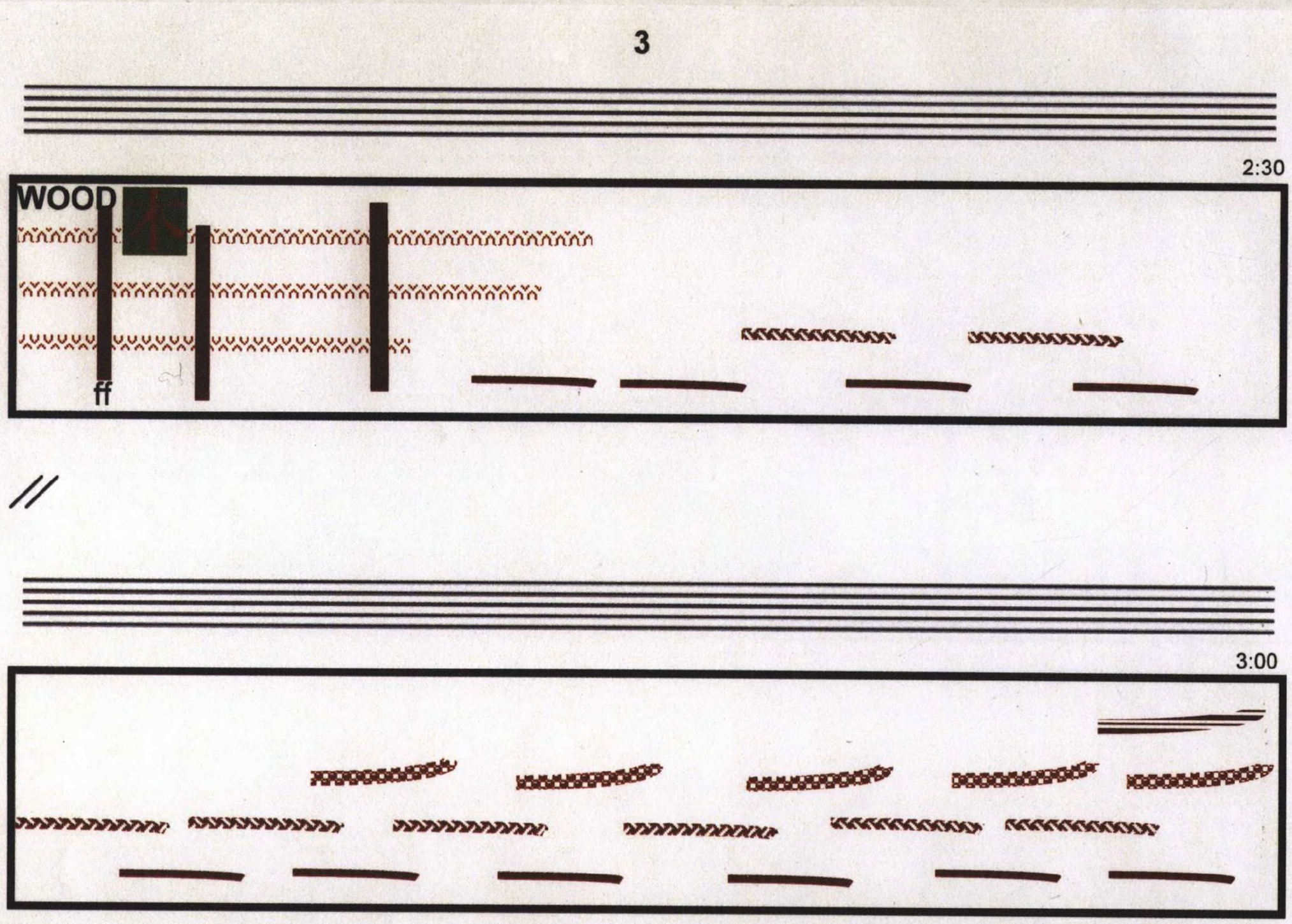
Brian Schorn; *Nebula*. For analog electronics, electric guitar with distortion and delay, drum set, and metallic percussion.

Used by permission of Brian Schorn, © 2001.

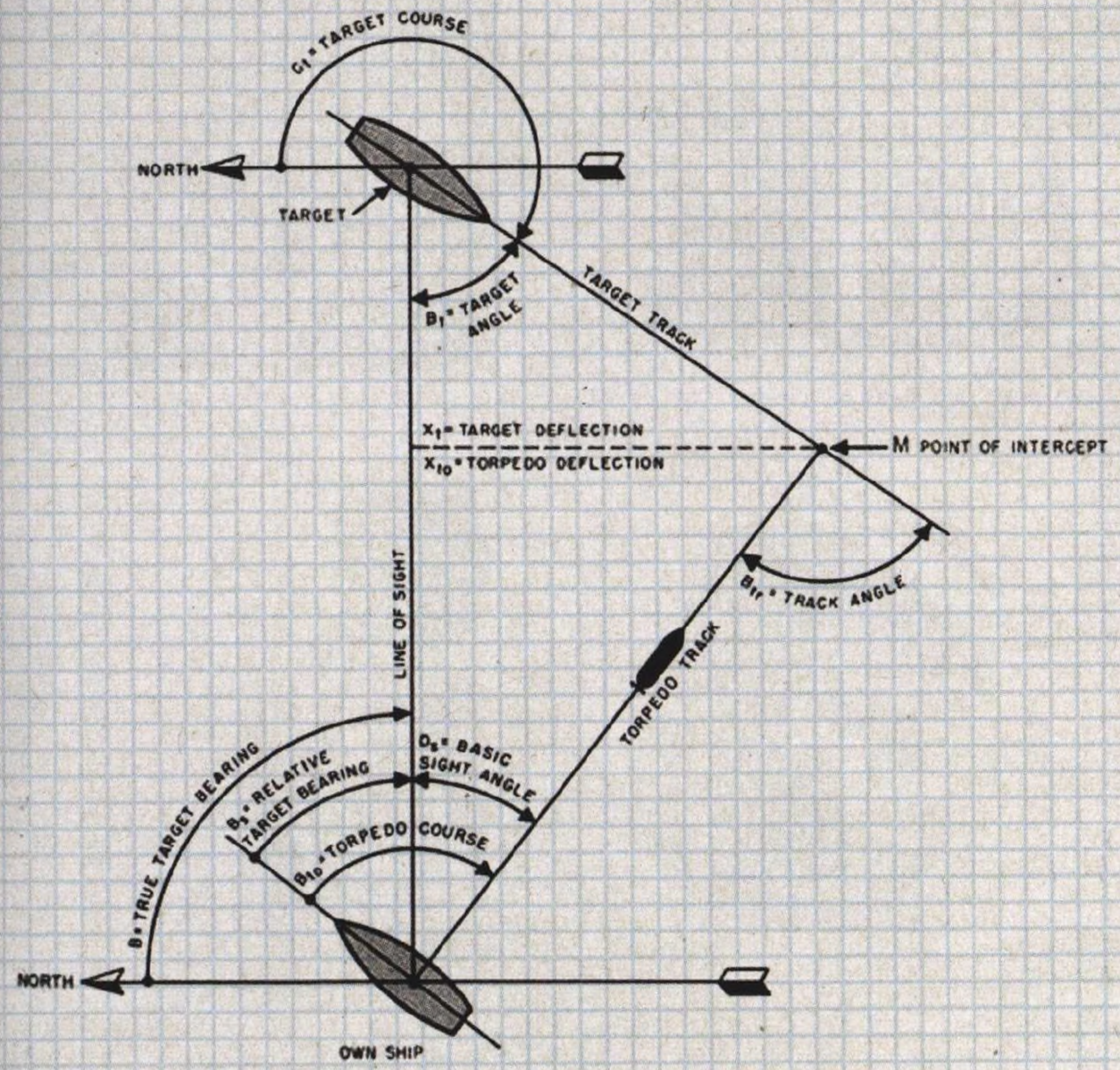
Nebula is a graphic score for three improvisers. Using spray paint, dirt, and colored pencils, the score creates a field of texture where three distinct outer zones appear around a central core. Each improviser selects a path to take from the shared, central core to an outer, individual core. Along this path, the textures and forms are interpreted as musical material by each improviser. Dynamic range is the only given parameter and is determined by the black (sound) and white (silence) areas along the chosen path. As each improviser reaches their individual core, a frenzied, ecstatic solo begins.

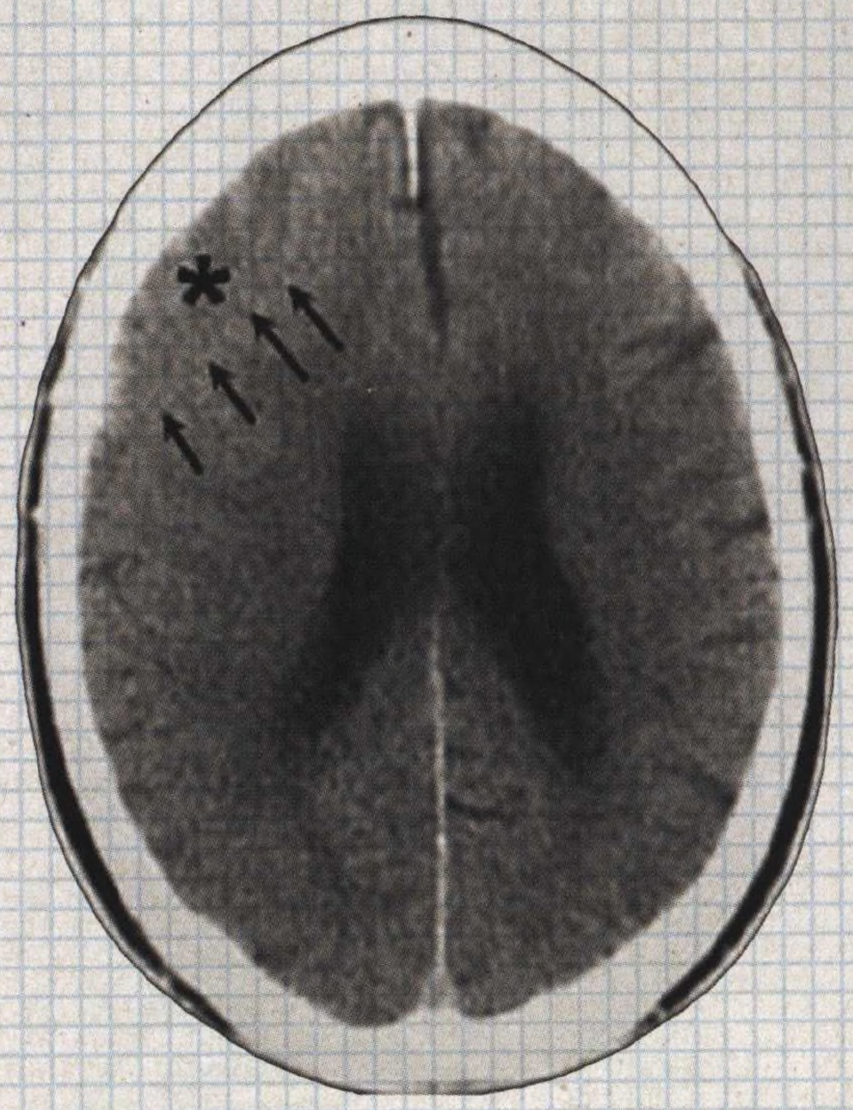
BARRY SCHRADER

Wu Xing—Cycle of Destruction deals with the Chinese concept of Wu Xing, the five elements in ancient Chinese tradition: wood, fire, earth, metal, water. These are important in Chinese astrology, medicine, and BaGua, a system of trigrams used in Feng-shui and other areas of Chinese life and culture. The five elements are often arranged in one of two cycles: the cycle of birth, ending with earth, or, as in this work, the cycle of destruction: "Metal," "Wood," "Earth," "Water," "Fire." *Wu Xing—Cycle of Destruction* explores these elements in transcendent ways. The "Metal" and "Wood" sections are aural depictions of the elemental density of the mediums, while "Earth" considers the metaphysics of planetary rotation and revolution. "Water" reflects on the conceptual aspects of the world's oceans at various depths, voyaging from the darkest abyss to the light of distant shores. Finally, in "Fire," there are the physical and spiritual effects of all-engulfing flames. The work exists as a solo electronic composition and may also be used as the foundation for improvisation by live performers, for which a graphic score is provided.



Barry Schrader; *Wu Xing—Cycle of Destruction*. For solo electronics or variable live ensemble.Used by permission of Ex Machina Publications, © 2005.





Phillip Schulze; *C.03A*. Used by permission of Phillip Schulze, © 2007.

C.03A: Even if the piece is, from its point of conception, "written" as a musical score, it is not made specifically to be performed by specific instruments of any kind. This impulse emerged from musical / artistic ideas that came out of the Fluxus movement in the 60s. The premise is that music is not only physically absorbable by the hearing apparatus, activated by waveforms traveling through space, but can also be created in the mind of the open experiencer through visual information.

An early example of a piece such as this one is La Monte Young's composition, *1960 #5*, where one or more butterflies are released into the performance space. Another is George Brecht's *Symphony 1962*, an event-card with the title imprinted next to the artist name and a hole in the middle that "uncovers" the environment behind the fixed framework of the card.

If the essential part of music is time, then all things that are occurring in time can be music, an idea introduced by Brecht.

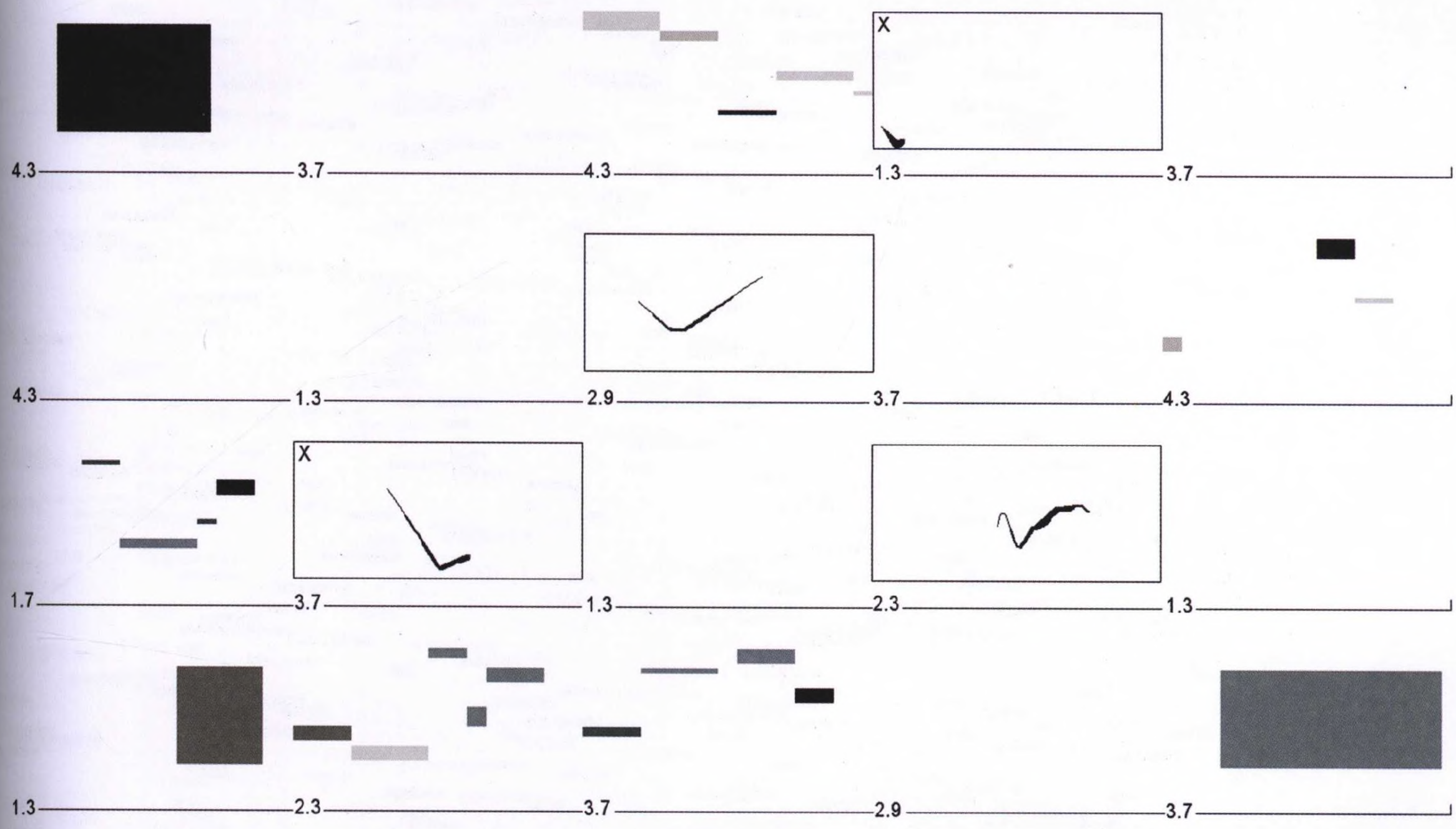
The score *C.03A* does not provide the observer with any instructions about instrumentations, timeframe, pitch, dynamic, etc. But because it is presented and created in the framework of musical notation, it seems to imply information that can be translated into music; the network of lines and arrows surrounded by white space assume relative qualities of time and space. The arrows that are aiming to events can be translated musically as target-points or points of connection and interaction, etc. However, my primary interest focuses, not without some irony, toward thoughts and questions (musical and otherwise) created by the observer in the moment of encountering the score.

nothing

something

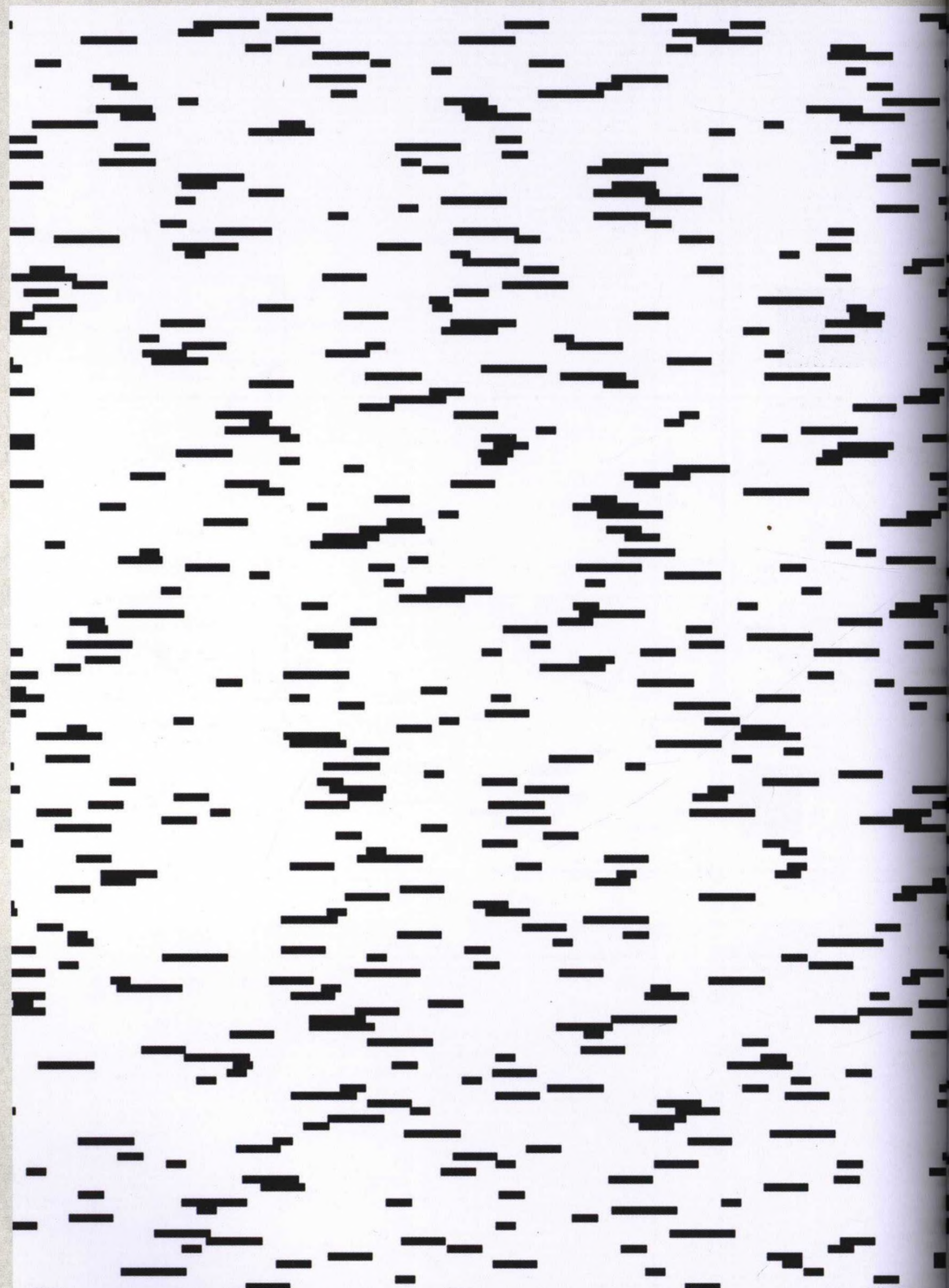
repeat...

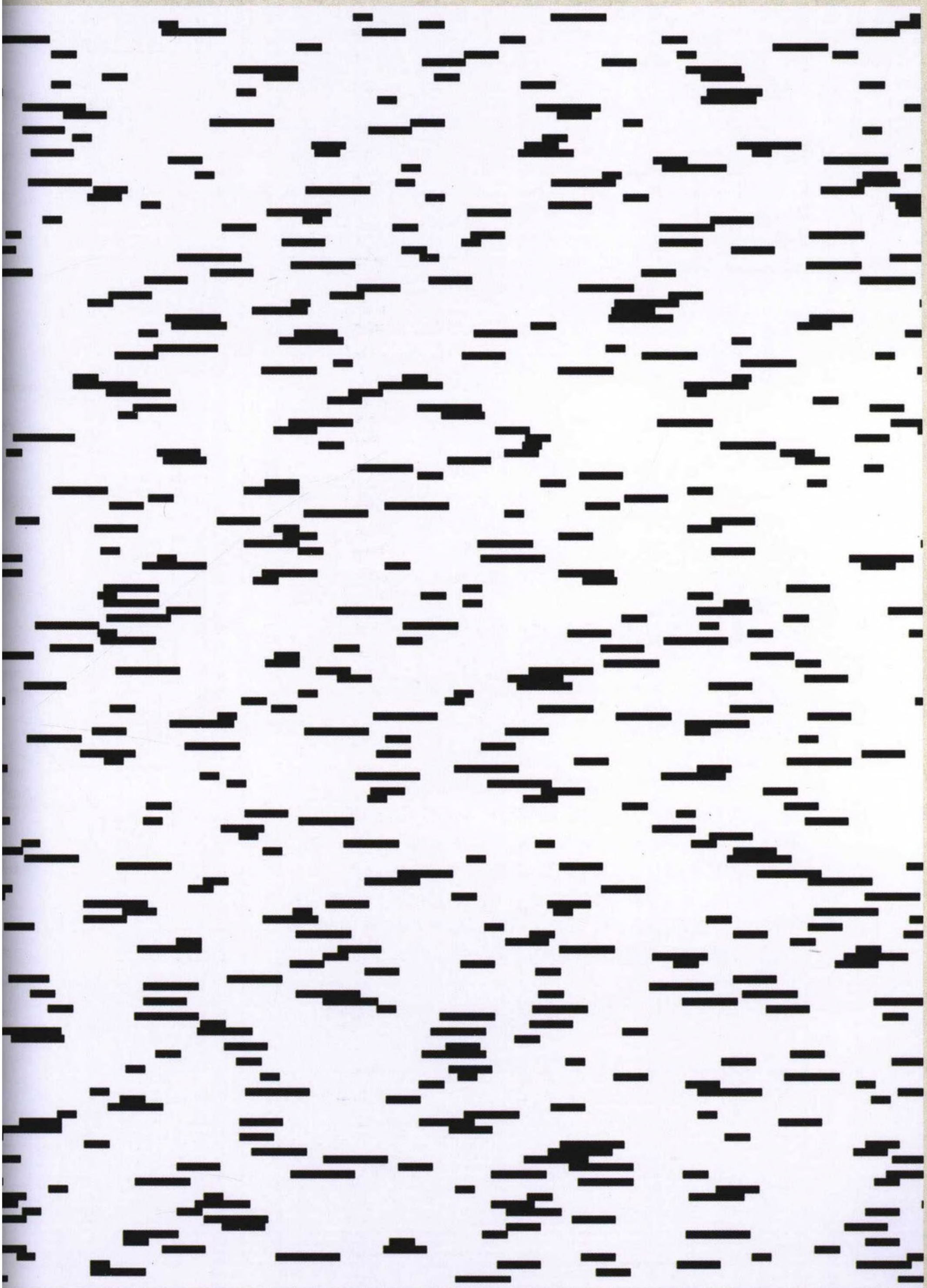
Michael J. Schumacher; "Score 1991" from *11 Graphic Compositions*. Used by permission of Michael J. Schumacher, © 1991.



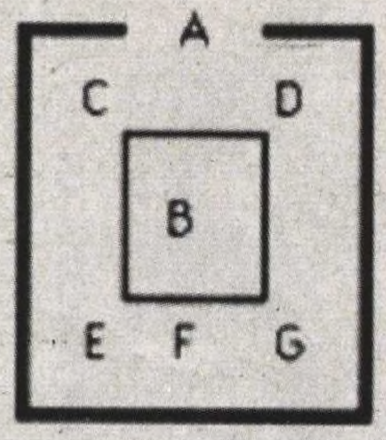
Michael J. Schumacher; *Room Piece.* For indeterminate instrumentation. Used by permission of Michael J. Schumacher, © 1999.

MICHAEL J. SCHUMACHER



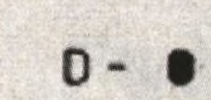
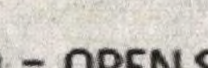


Michael J. Schumacher; *Isorhythmic Variations*. For indeterminate mixed ensemble not exceeding 11 players. Used by permission of Michael J. Schumacher, © 2007.



TUNINGS: VIOLINS - G C Ab A
VIOLAS - C G Ab A
CELLOS - C G Ab A
BASSES - C Ab A G

OPERATIONS: A - # OF MEASURES, "O" = REPEAT UNTIL CUE
B - PITCH, C=1/1 G=3/2 Ab=8/5 A=5/3; ■ =TACET
C - RHYTHM OF BOWSTROKE; IF B IS NOT ●, YOU MAY MOVE YOUR STOPPING FINGER
Θ = NOTE HELD 4 BEATS, TIED TO PREVIOUS AND FOLLOWING NOTES
o,d,♩,♪,♬ DIVIDES MEASURE INTO EQUAL PARTS

3/♩ = , 3/♪ =  , 5/♬ = 

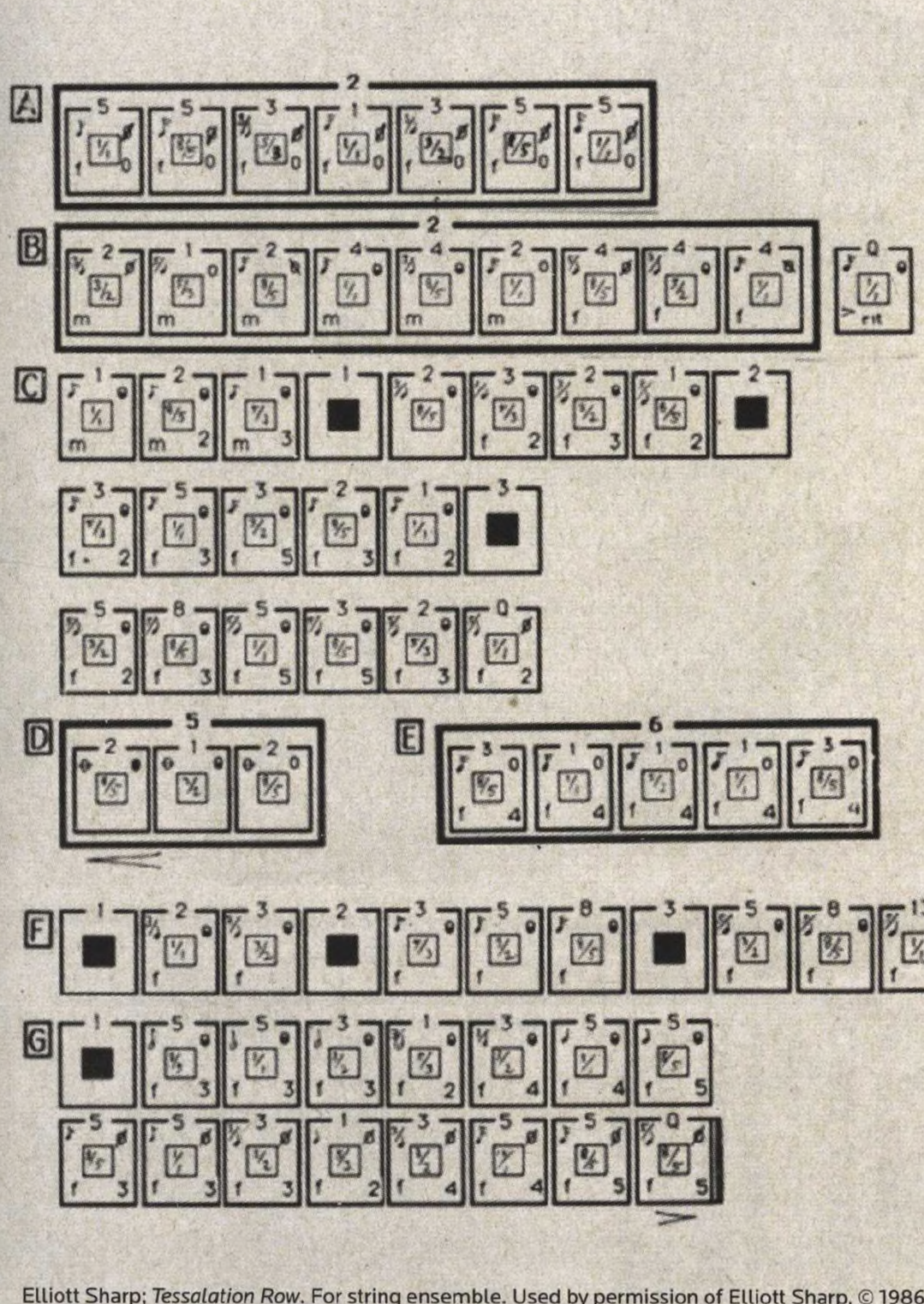
D - ● = OPEN STRING
O = OVERTONES (PLAYER'S CHOICE)
◒ = OVERTONES/OPEN STRINGS MIXED
Ø = OVERTONES, SLIDE FINGER TOWARDS BRIDGE
Ø = SLIDE FINGER AWAY FROM BRIDGE
E - DYNAMICS P - F, < >
F - LOOPING, 0 = NO LOOPS, # = LENGTH OF LOOP TO BE CONSTRUCTED BY PLAYER. LOOPS MAY OR MAY NOT BE EXTENDED ACROSS BAR LINES

G - MISCELLANEOUS OPERATIONS (RIT., ACC., PIZZ.)

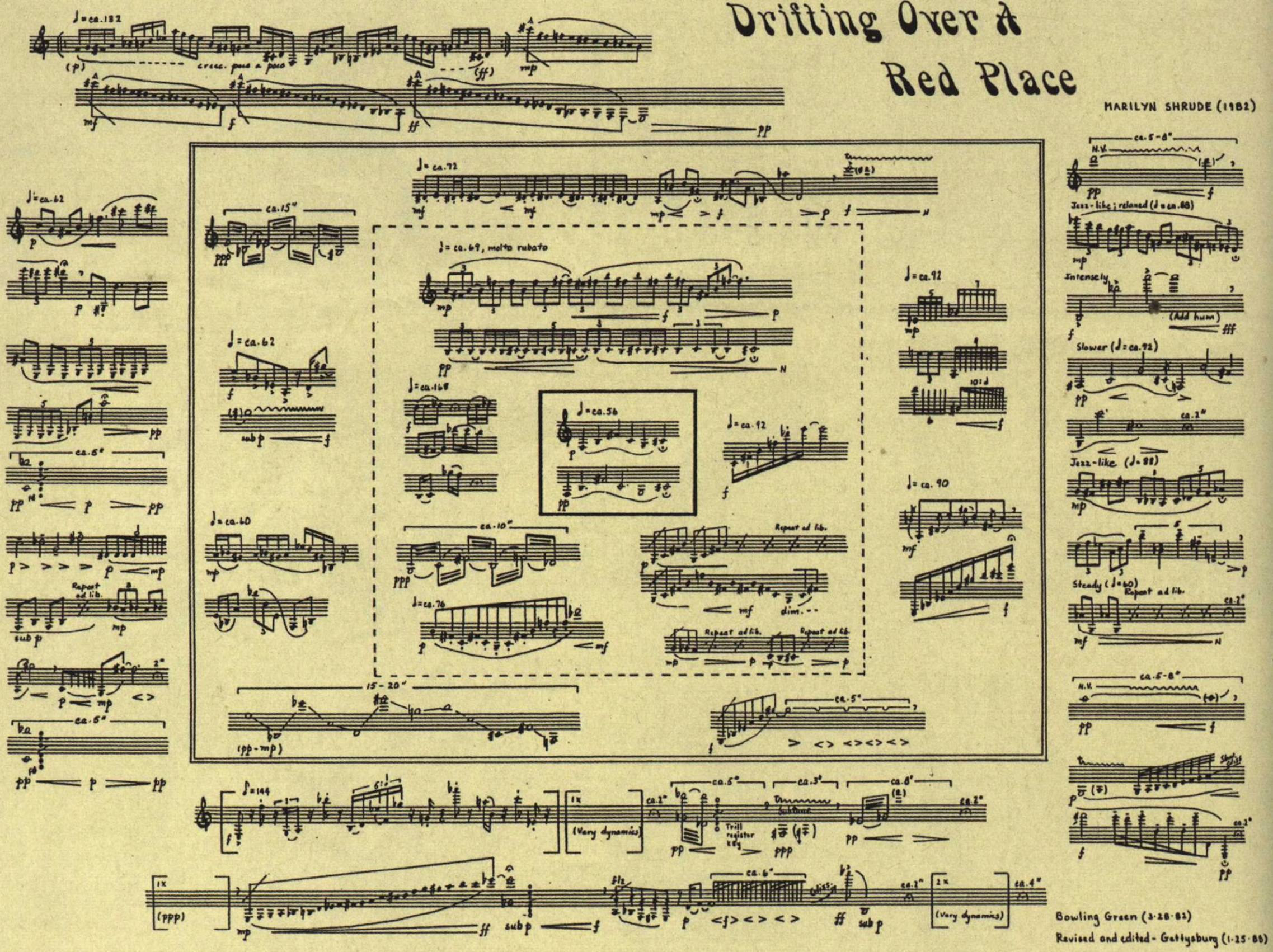
Elliott Sharp; *RE:ITERATIONS*. For string ensemble. Used by permission of Elliott Sharp, © 1986. Image quality reflects the era's technology.

TESSALATION ROW: It was a happy coincidence that Paul Dunkel (Associate Conductor of the American Composers Orchestra) contacted me in January 1986 about a commissioned piece for the orchestra at the same time that I had been thinking about applying my Fibonacci-series work to an ensemble of strings, re-orchestrating ideas I had evolved on the electric guitar. As I was completing *RE:ITERATIONS*, another useful coincidence: David Soldier had formed the Soldier String Quartet and asked me for a composition for their debut concert at the Miller Theater in New York City. I decided to re-compose *RE:ITERATIONS* for quartet—*TESSALATION ROW* was the result. Both pieces use the Fibonacci series to generate tunings, rhythms, and forms. All pitches are played on open strings (tuned to 1/1, 3/2, 5/3, 8/5) or overtones of those open strings. There are times when the players can vary the overtones and timbres in a module but only within the parameters indicated in the score, not improvising. I was very much concerned with identity—the ability of sonic flux and internal detail to vary greatly in each performance without destroying the essence and exact proportions of the piece.

The score uses graphic modules, which indicate rhythms, durations, and bowing techniques as well as the string or strings on which these operations would take place. I felt at the time that only this type of tablature could convey the conception of the music as well as avoiding reference to traditional ideas of melody or harmony. The adventurous spirit of the members of the Soldier String Quartet allowed them to plunge right into the process of learning the notation and being able to interpret it fluently, both in the recording studio and numerous performances. The American Composers Orchestra proved to be a different story. The players resisted retuning their instruments and Dunkel found it necessary to provide traditional notation for the players, an act of necessity that I felt limited the manifestation of the music. In 1998, I was asked to prepare a version of *TESSALATION ROW* for performances by Frankfurt's Ensemble Modern. In the interest of efficiency, I created a new score using traditional notation but feel that no sonic elements were lost in the process. This success was dependent very much on the wonderful enthusiasm, openness, and skills of the Ensemble.



Elliott Sharp; *Tessalation Row*. For string ensemble. Used by permission of Elliott Sharp, © 1986. Image quality reflects the era's technology.



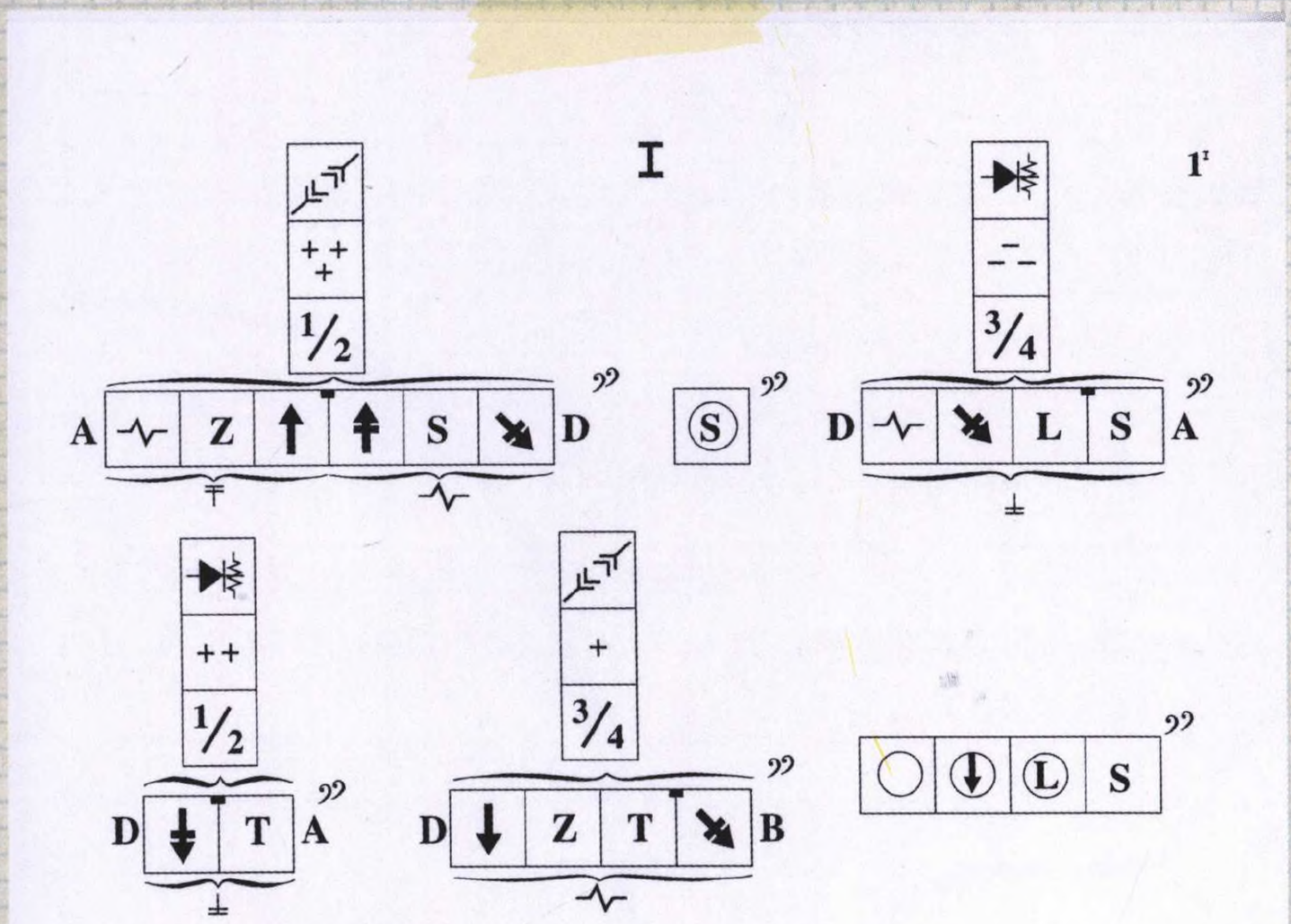
Marilyn Shrude; *Drifting Over A Red Place*. For B♭ clarinet, echo, slides, and dancer. Also for the WX7 (Yamaha Wind Controller).

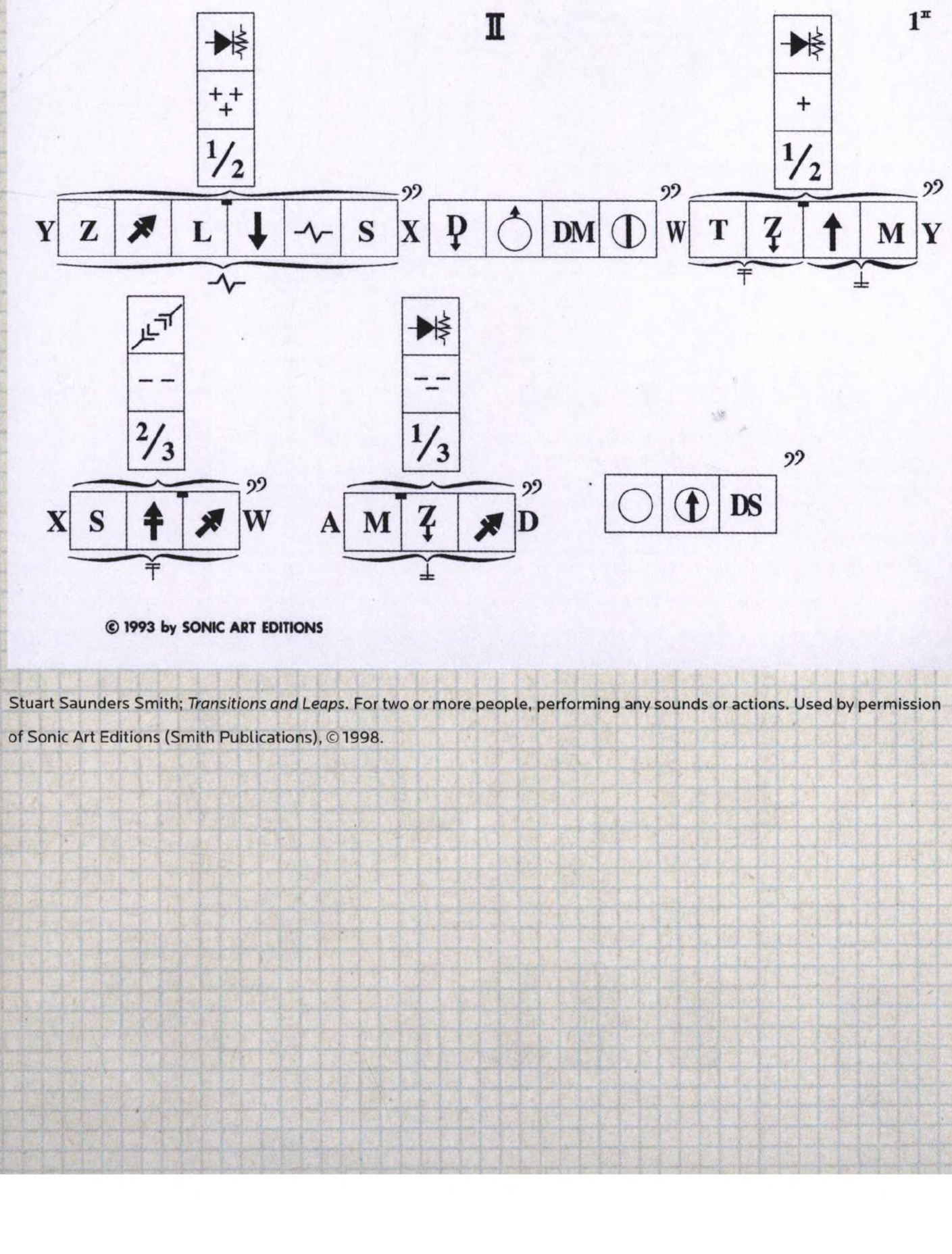
Used by permission of Marilyn Shrude, © 1982.

Drifting Over a Red Place was originally written for B♭ clarinet, echo, slides, and dancer, but has been successfully performed on the WX7 (Yamaha Wind Controller) as well. The large one-page score is in four sections ("Theme," "Variation," "Diversion," "Development"); instructions are provided so that the performer can navigate an individual pathway through the fragments. While the overall form and character will always be similar, the final product may vary from performance to performance.

The slides, various photographs of *Drifting Over a Red Place* by artist Dorothy Linden, are used at the discretion of the performer. An entire stage or auditorium could be flooded with color as befits the performing situation.

The work was commissioned by Burton Beerman and Celesta Haraszti and premiered at the Piccolo Spoleto Festival in Charleston, South Carolina, on May 28, 1982. John Sampen premiered the WX7 version in 1988 and later recorded it for Capstone Records (CPS-8636).





Stuart Saunders Smith; *Transitions and Leaps*. For two or more people, performing any sounds or actions. Used by permission of Sonic Art Editions (Smith Publications), © 1998.

Transitions and Leaps is a performance system for two or more people, performing any sounds or actions by me. *Transitions and Leaps* is about moving from one category of information to another, by either a gradual transition or a sudden leap. The first task of the performers is to choose four categories (A, B, C, and D) of actions/sounds that can be modified. Some examples of categories are walking, reciting a text, xylophone rags, wearing hats, playing Bach on the piano, serving tea.

The score makes use of ideograms that symbolize a task to be done while making the transition or the leap. These are modifications that apply to any of the performing arts, for example: higher, slower, imitate, change the speed, etc. Performers work together over many weeks or months, by improvisational trial and error, eventually coming up with a performance that is repeated verbatim with each performance.

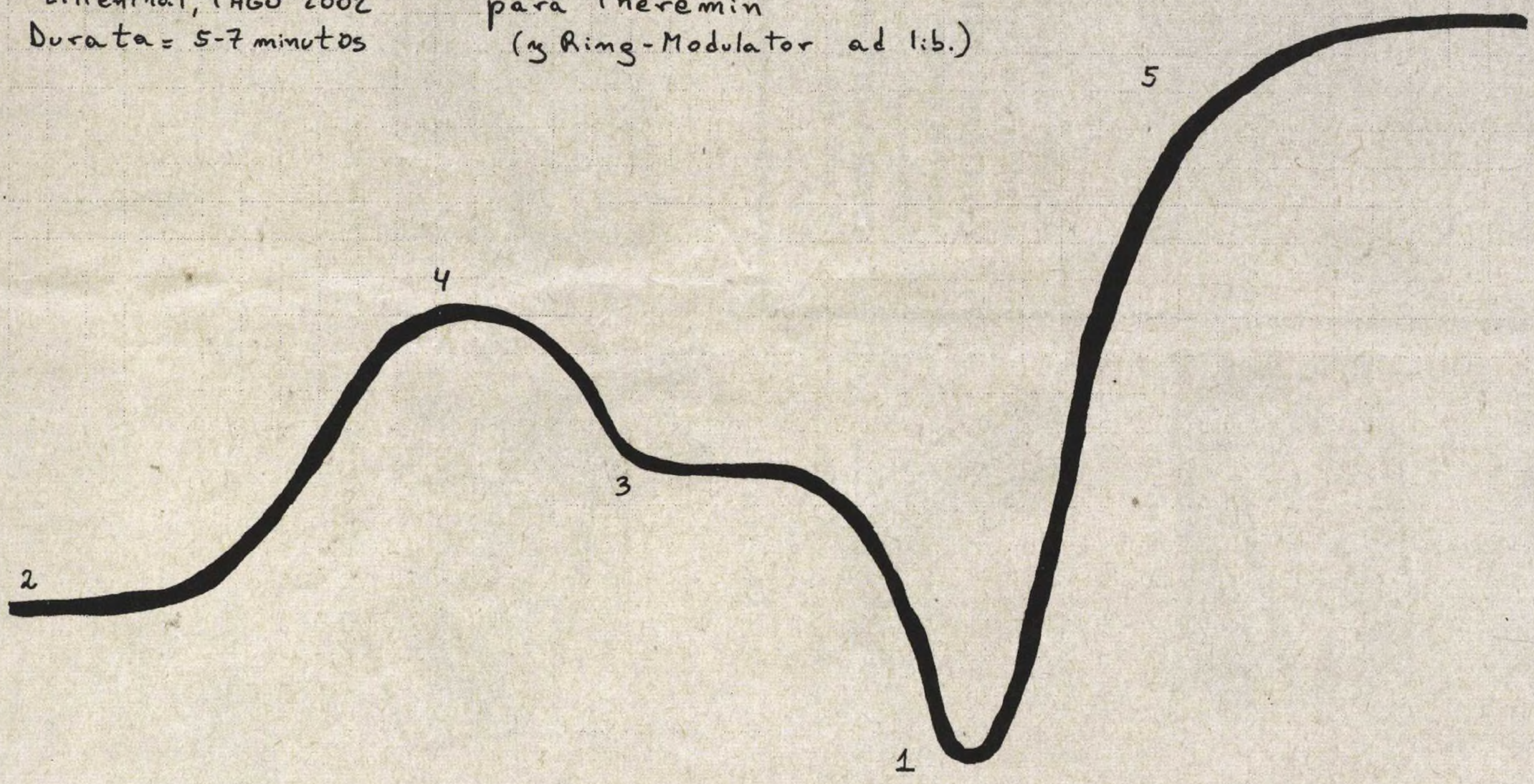
a Luca Miti

Palinsesto Senso

Juan María Solare

Lilienthal, 9 AGO 2002
Durata = 5-7 minutos

para Theremin
(y Ring-Modulator ad lib.)



Juan María Solare; *Palinsesto Senso*. For theremin and ring modulator ad libitum. Used by permission of Juan María Solare, © 2007.

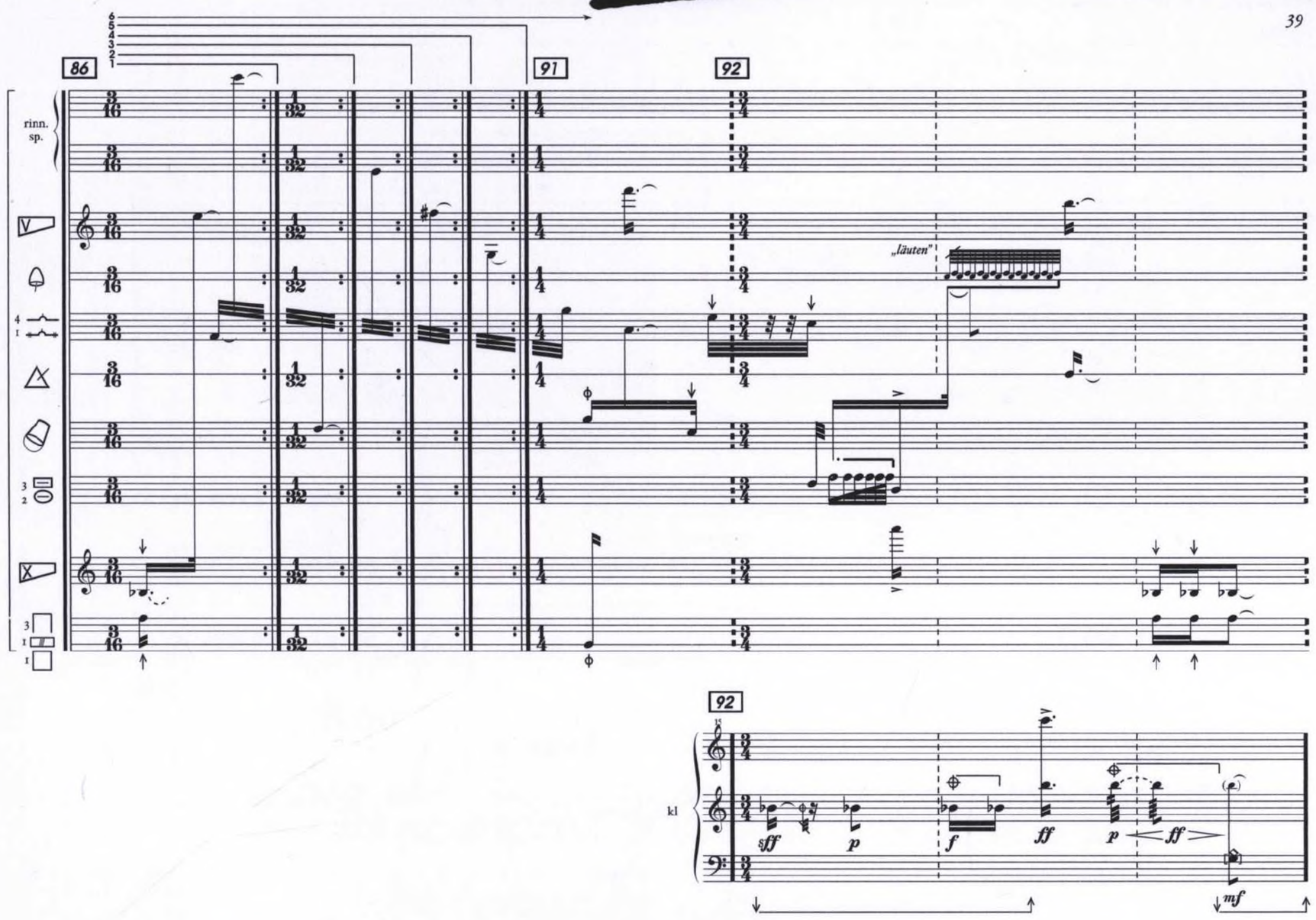
Palinsesto Senso was composed in Lilienthal on 9 August 2002. Its duration is 5 to 7 minutes. The work—a graphism with several performance instructions—is dedicated to Lucarissimo Miti.

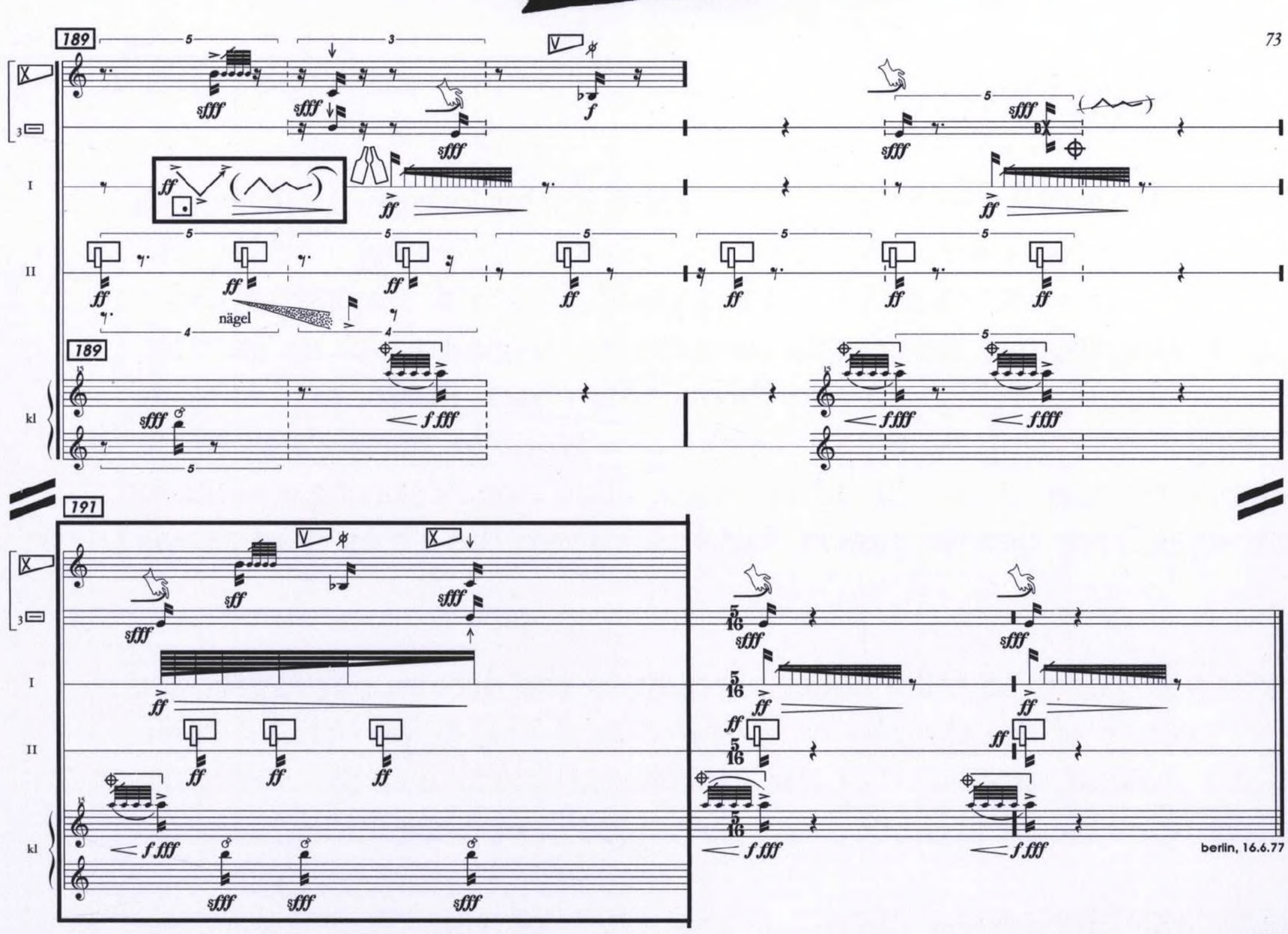
Palinsesto Senso (might be translated as "Palimpsixth sense" was first performed by Luca Miti on the 25 March 2004 at the bookshop Bibli in Rom (Trastevere).

About the performance:
Read the figure indicated in the score an indeterminate number of times (say, between 1 and 70), enough to reach the total duration of the piece (5 to 7 minutes).
In each reading:

- Decide the direction of the reading: left to right or right to left. Thus are achieved the direct movement and the retrograde.
- Decide the position of the figure (i.e., of the page): as it is or rotating the page 180 degrees. Thus are obtained the inversion and the retrograde of the inversion.
- Vary the duration of each reading. In a typical case it will be between 2 and 15 seconds, but in extreme cases the figure can last less than one second up to 7 minutes (i.e., the whole piece).
- Vary the tempo and the internal speeds (accelerando, ritardando, fermates, rubato, etc.).
- Vary the articulation and segmentation: between legato and intermittent, tenuto. Short caesuras.
- Vary the register (high, low, middle, etc.).
- Vary the range (the inner scale, the steps between one level and the next). One should respect the relations [ratios] of "higher or lower than ..."
- Vary dynamics: forte, piano, cresc, dim, sfp, p with sporadic stresses, etc.
- Decide the Vibrato: whether yes or no, its speed (between 1 and 16 times in a second or even slower), its amplitude (stretto/wide), vibrato accellerando/rallentando.
- Decide whether to use Ring Modulator or not and which basic frequency it will have, preferably unison or—even better— almost unison with any of the five main notes of the Figure. This will generate battimenti, which I love. A transition from unison to almost unison or vice versa (i.e., a glissando of the Ring Modulator) will generate an accelerando or a rallentando of the battimenti, very desirable in the sound-image of this piece. In order to obtain a solid overall structure it could be advisable to use the Ring Modulator along several consecutive rereadings, that for the perception will be thus one "section."

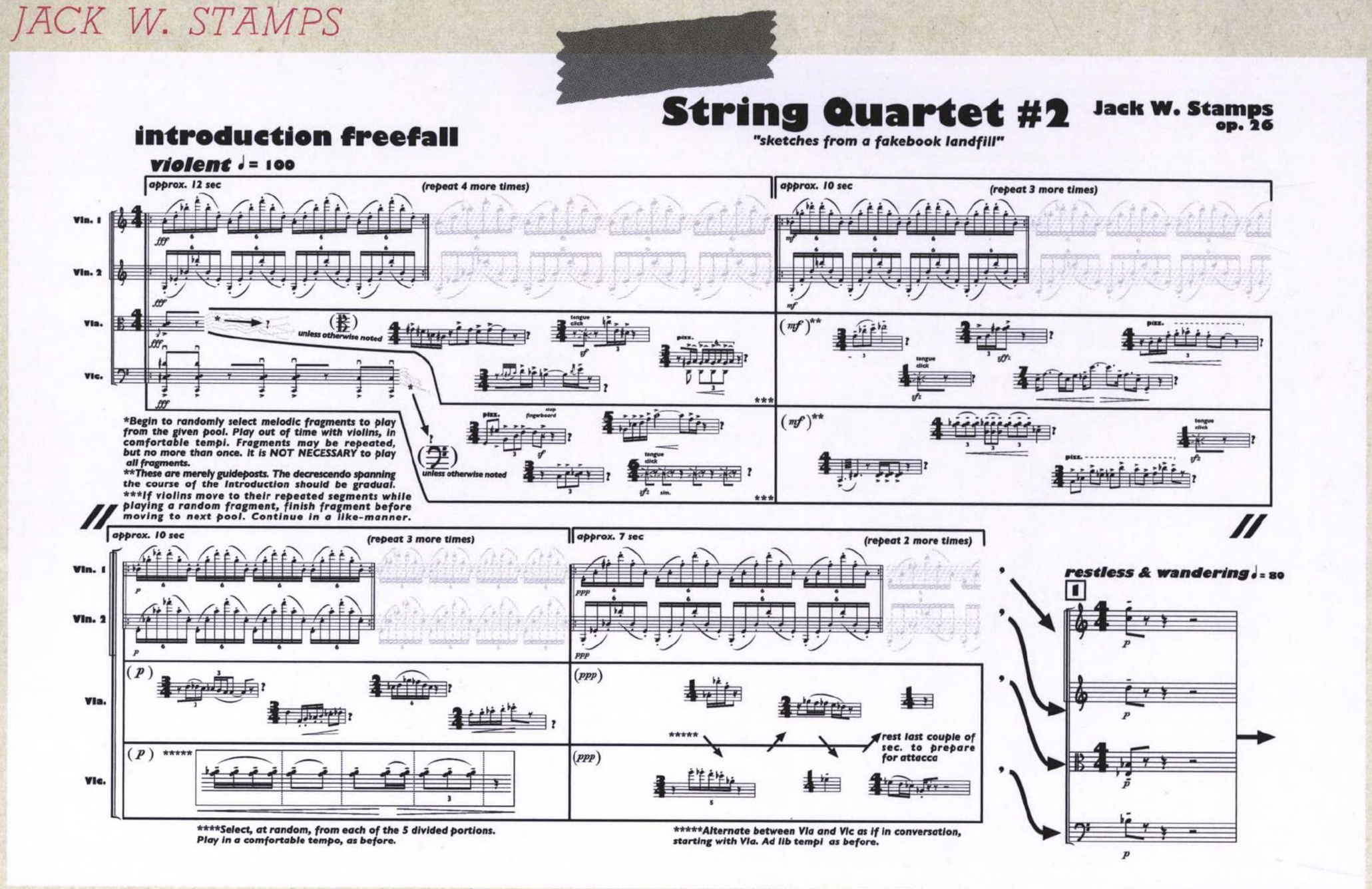
All these variants can be improvised or (preferably) be planned beforehand.





Mathias Spahlinger; *ephemere*. For everyday objects (pots, pans, pingpong balls, clocks, rulers, etc.) along with "normal" percussion and piano.

Used by permission of Mathias Spahlinger / PEERMusic, © 1997, 2002.



Jack W. Stamps; "sketches from a fakebook landfill" from *String Quartet #2*. For violins. Used by permission of Outside Interests Music, © 2007.

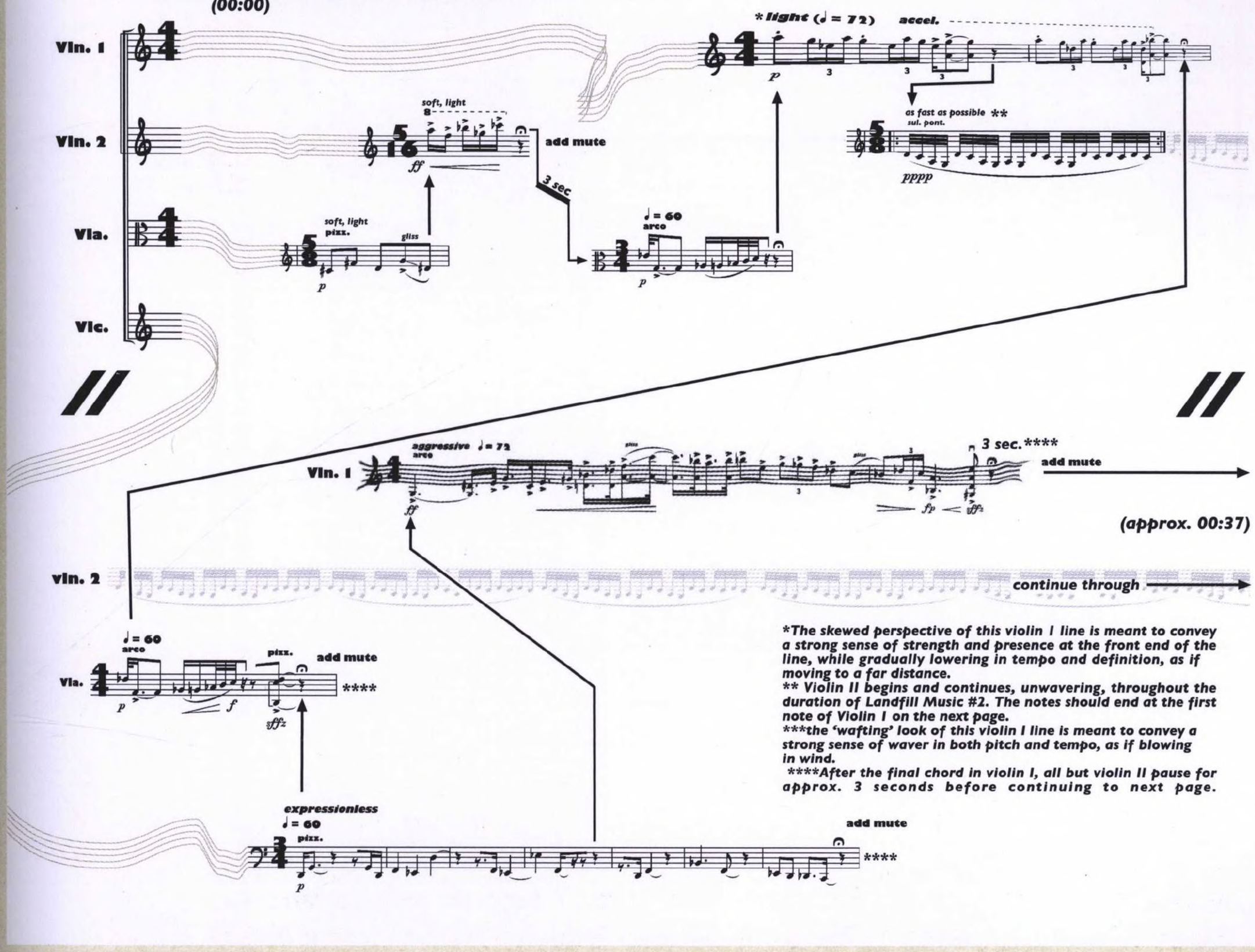
About the piece:

This work is a kind of soundtrack to a dream. In this dream, I fall from a plane, from a very high, into an enormous landfill containing nothing but discarded jazz fakebooks. After I hit the ground, I get up, staggering and a little dazed. I walk around. As I regain awareness, I begin to pick up random fakebooks and flip through them and throw them back down, as if looking for something meaningful. At times, I pick up wet, pulpy handfuls of loose pages and pick through them. At other times, I find myself staying a while in certain passages from cleaner sheets that I pick from the air as they slowly blow by.

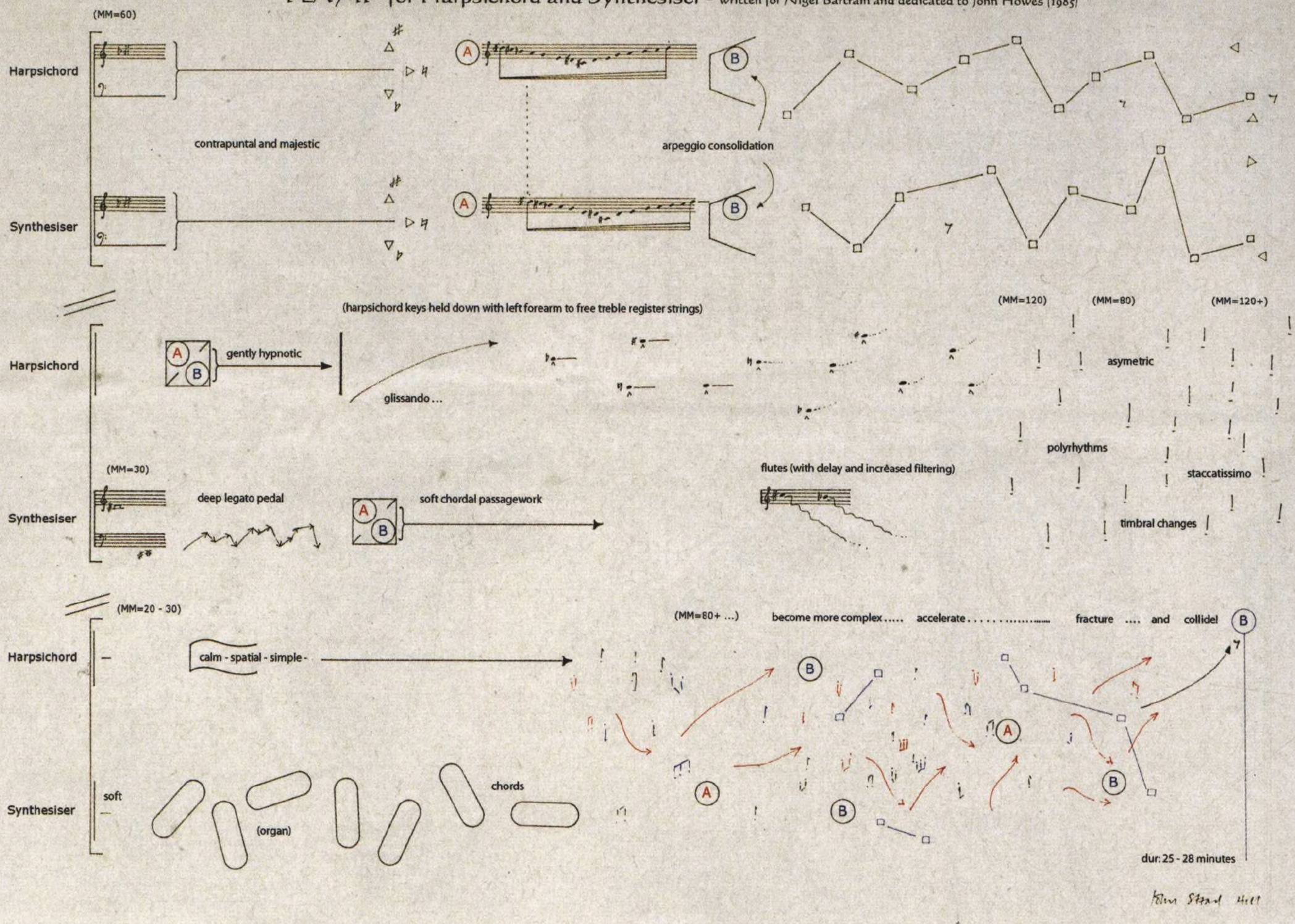
The work is not meant to tell a linear account of the dream, but rather act as a kind of collage of the sketchy memory of it; a wet, pulpy handful itself, in which the various elements of the traditional string quartet structure might behave nomadically and become rearranged in non-traditional ways.

I remember the declarative voice of the pilot of the plane over the intercom, just before I fell, quoting Zappa…

"Jazz isn't dead. It just smells funny."



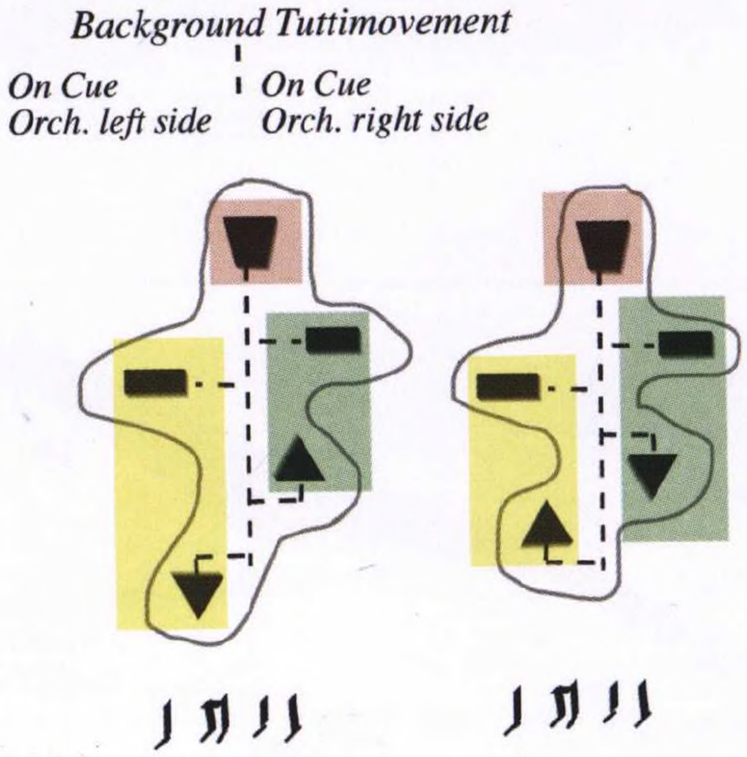
Jack W. Stamps; *Landfill Music #1*. For violins. Used by permission of Outside Interests Music, © 2006.

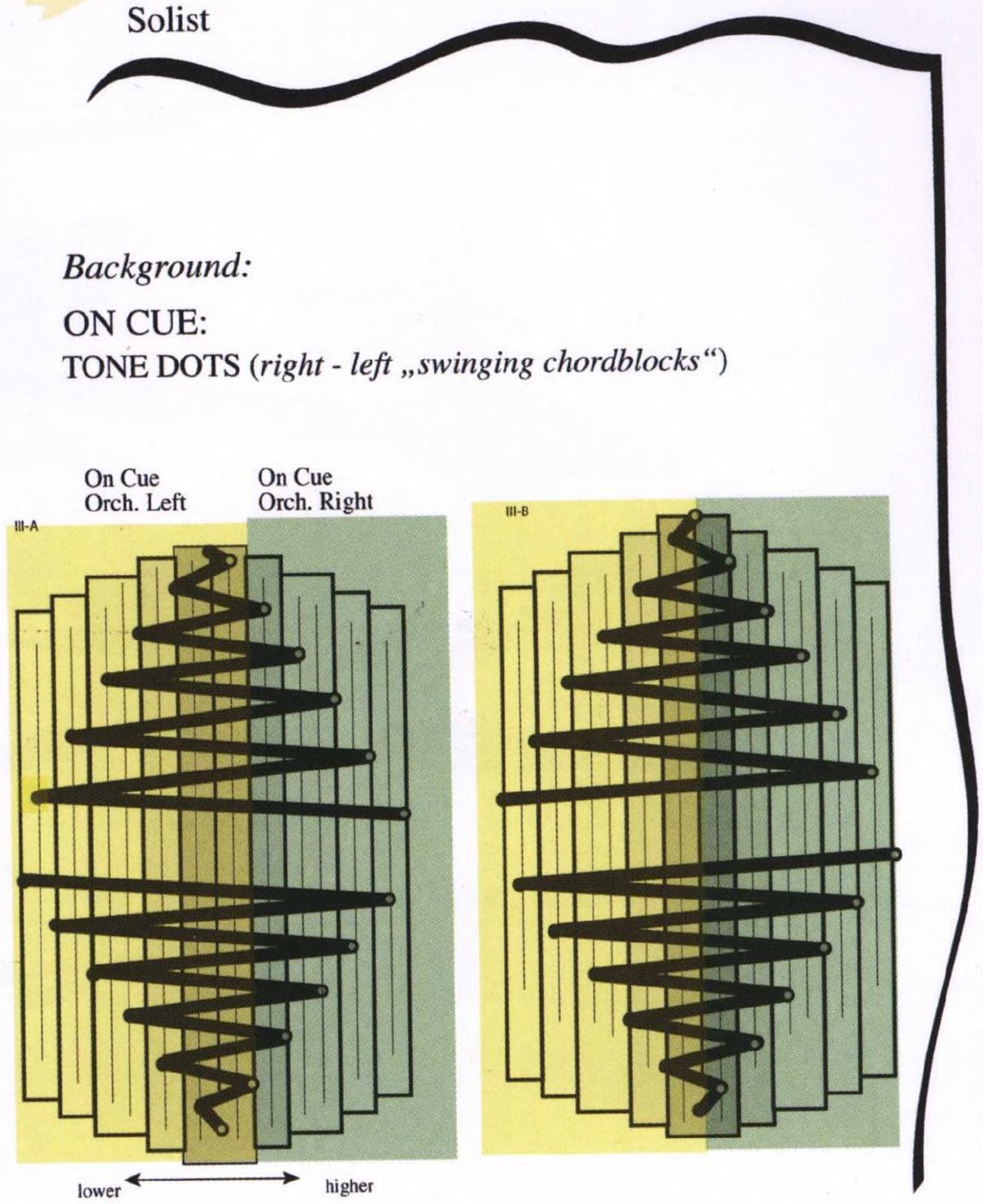


John Stead; *Play II*. For harpsichord and synthesizer. Used by permission of John Stead, © 2007.

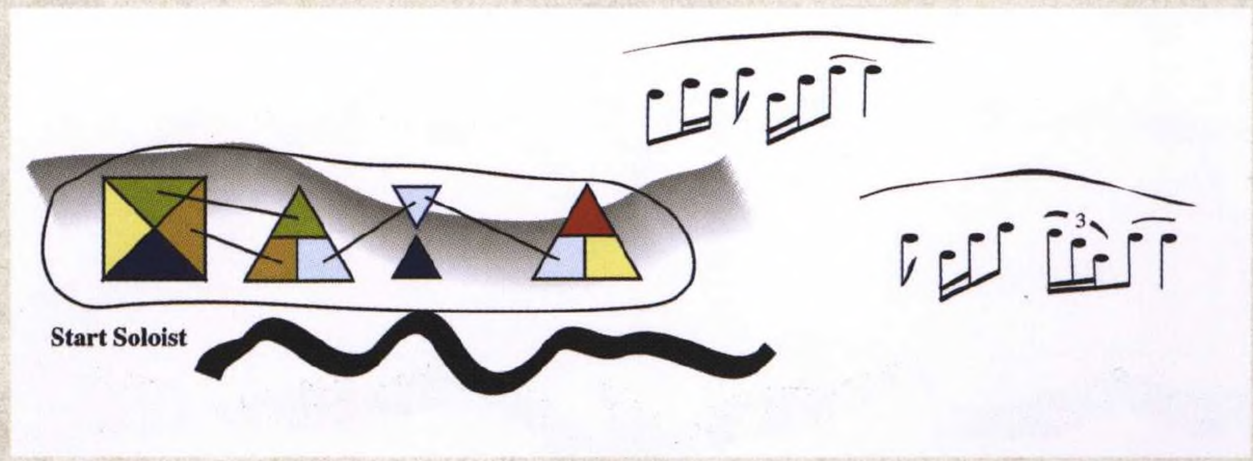
Play II is written in a graphic notation that acts as a mnemonic for previously rehearsed decisions and strategies and lasts between 25 and 28 minutes. The work is technically demanding and is concerned with play in many forms—playing an instrument: techniques, styles, etc.; as well as a game: strategies, tactics, etc., and of course fun!

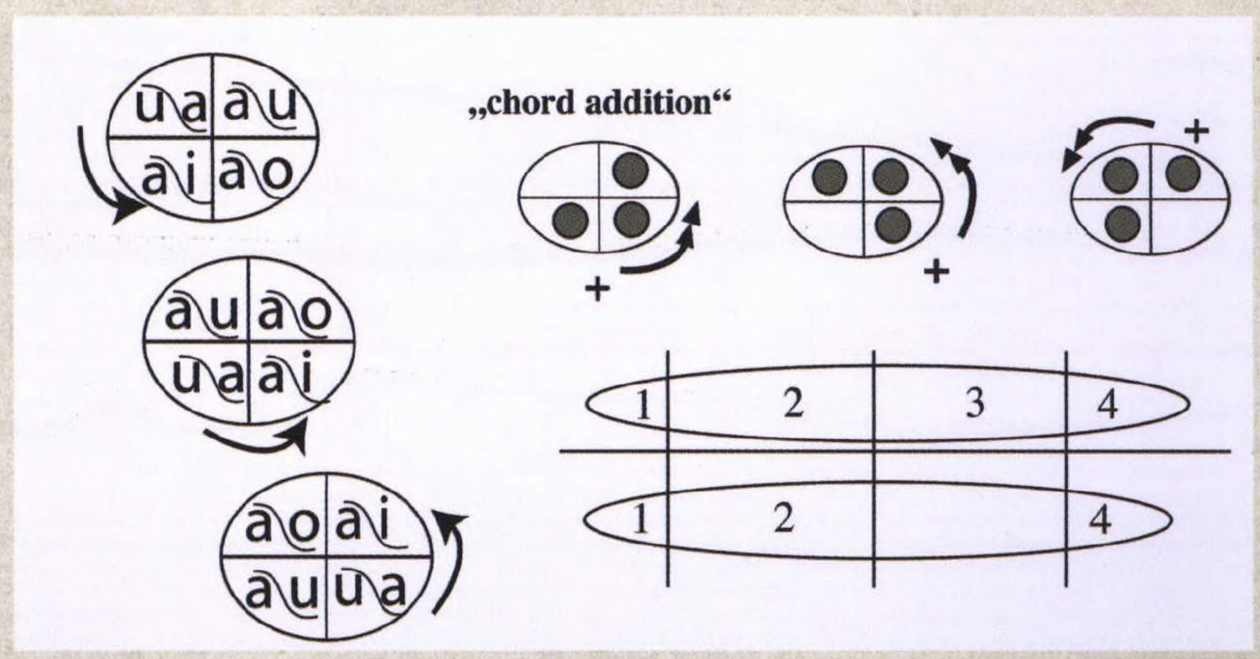
This work is scored for a harpsichord and synthesizer and live electronics—neither instrument is specified, but the initial performances used an Ensoniq synthesizer and a Baldwin Solid Body harpsichord. The first performance was given by me and Nigel Bartram (for whom the work was written). The harpsichord is played both from the keyboard and internally, to produce an extended range of timbres, which are then processed by a REX 50 or similar digital effects device.





Pata Music is derived from the work of late 19th-century scientist Dr. Faustroll, who developed a theory of "pata physics," defined as a science based on "unreal logic and a new reality beyond the borders of the world of external appearances removed from the usual principles of causality." Another definition for this philosophy is "the science of imaginary solutions [which] defines the way to gain knowledge avoiding the rigorous rules of reason and tradition, without disrespecting them." This is a fair description of how I created my music with respect to the orthodoxies of the jazz tradition.

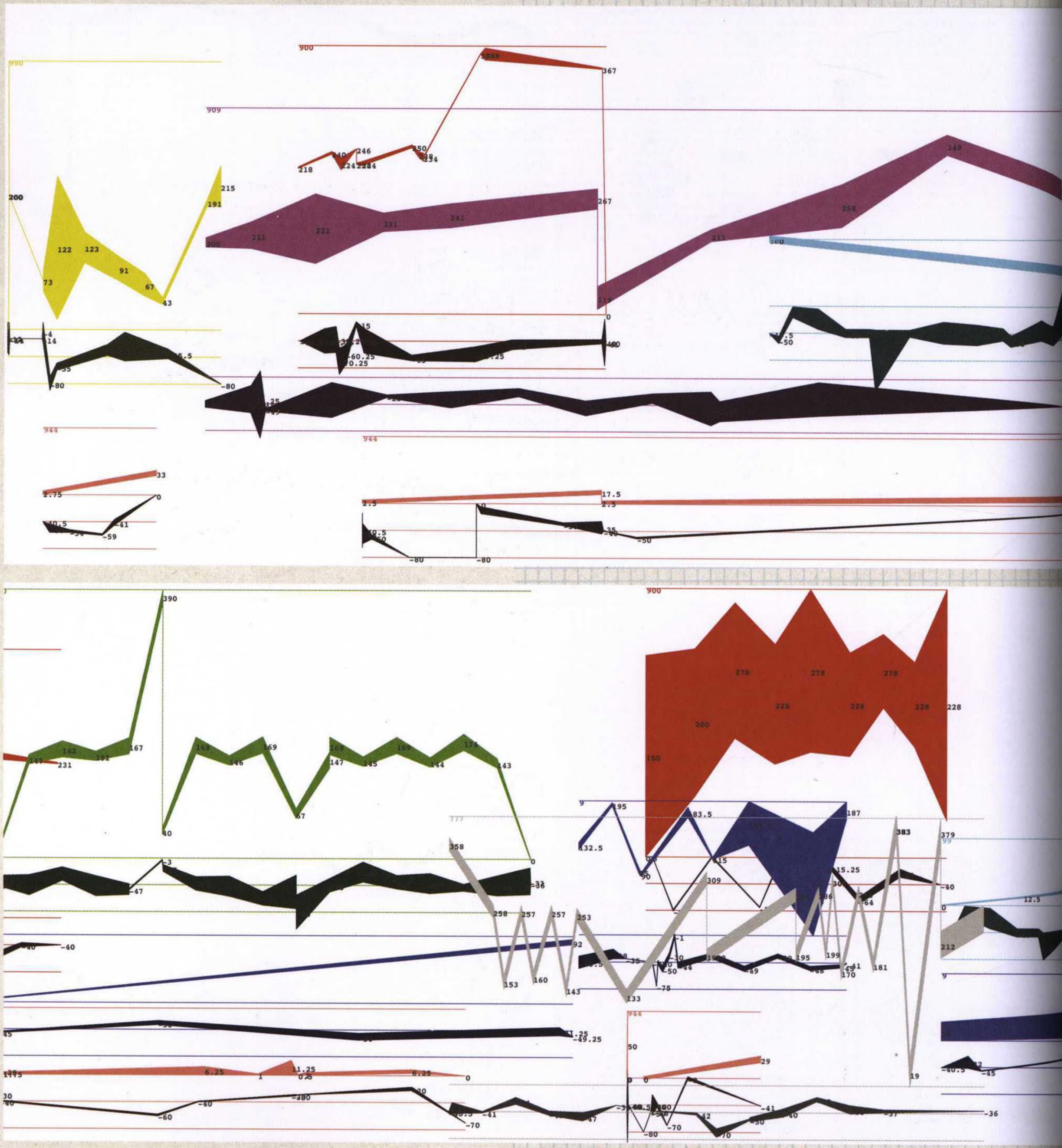


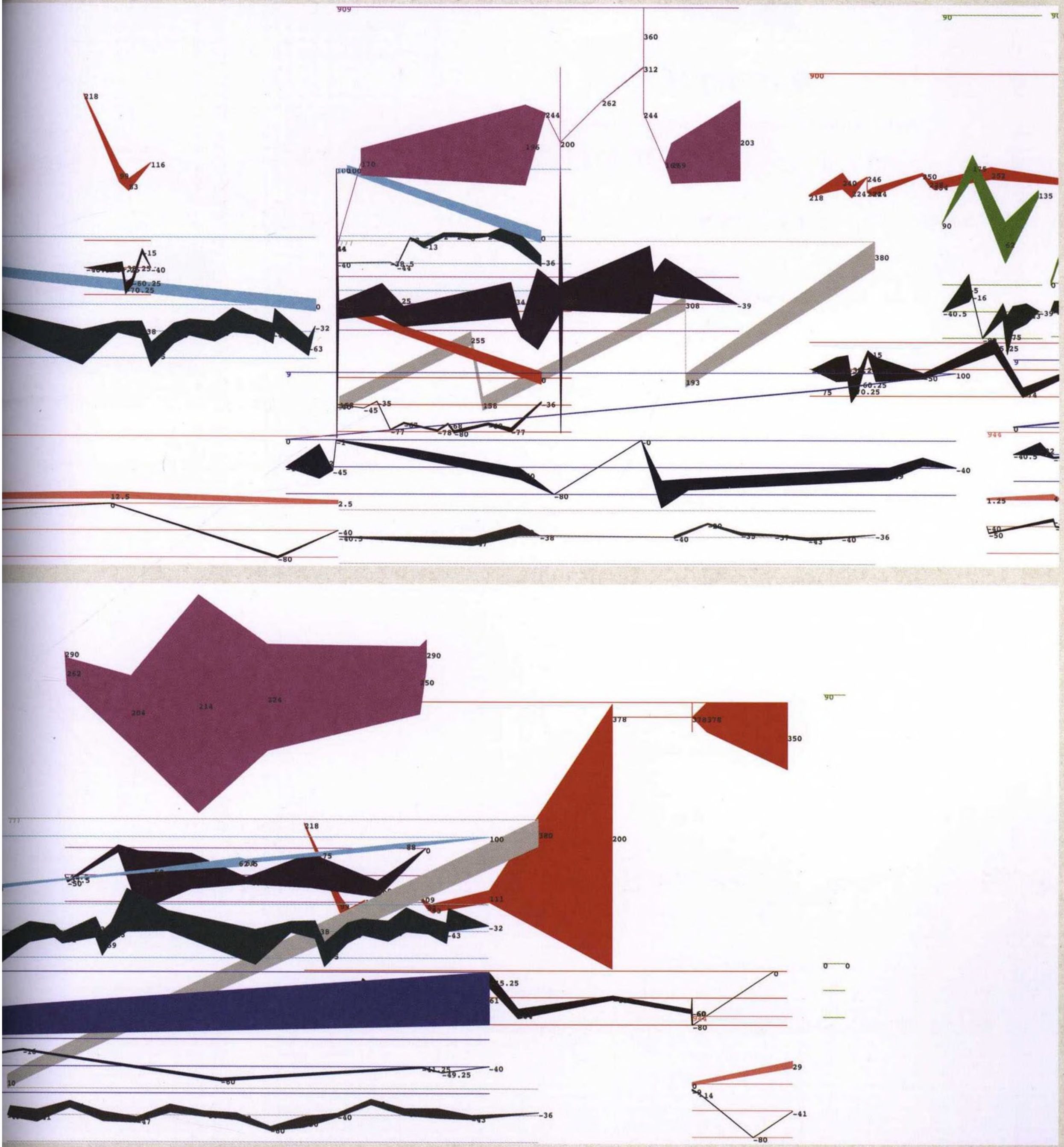


Norbert Stein; *Graffiti Suite*. For large band ensemble.

Used by permission of Norbert Stein / PATA Music, © 2005.

HANS-CHRISTOPH STEINER





Hans-Christoph Steiner; *Solitude*. For 50-100 voice polyphony using PD (Pure Data). Used by permission of Hans-Christoph Steiner, © 2004.

PETER STERK

BIOMASS

Music inspired by the way plants spread through seeding

Someone starts with a short motif.

The others approximately reproduce the motif a few times.

Anyone who is done with the motif then chooses a motif from what the others are playing and reproduces this new motif a few times.

And so on.

Gradually mutations of the first motif arise.

Anyone can introduce a new motif at any time.

SANDSTORM

fast, very short notes wtihin a narrow tonal range

in sequences with long

+

irregularly accents
positioned

much variety in sonic density:

everyone plays ⟷ no one pla

the limits of silence

When we try to play or sing at an extremely low volume, the intended sound may not happen, or it may drop out sooner than intended. This silence instead of sound is the basic principle of this piece.

Remain balanced upon the limit of sound and no sound, in the area where you lose control of your tone.

Three parts:

1. Produce a sound so soft that it only becomes audible occasionally and accidentally.

interruptions

2. Produce a continuous sound, so soft that it will accidentally drop out once in a while at any moment.

3. Play or sing several tones soundlessly, in such a way that once in a while one tone accidentally becomes audible.

Peter Sterk; *Biomass; Sandstorm; The Limits of Silence*. All for variable instrumentation. All used by permission of Peter Sterk, © 2000.

Karlheinz Stockhausen

COSMIC PULSES

Electronic Music

In KLANG (SOUND), *The 24 Hours of the Day*, the **13th Hour** is entitled **COSMIC PULSES** (Electronic Music).

24 melodic loops, each of which has a different number of pitches between 1 and 24, **rotate** in **24 tempi** between 240 and 1.17 rotations per minute in 24 registers within a range of circa 7 octaves.

They are successively layered on top of each other from low to high and from the slowest to the fastest tempo and end one after another in the same order.

The loops were enlivened by manual regulation of the accelerandi and ritardandi around the respective tempo, and by quite narrow glissandi upwards and downwards around the original melodies. This was carried out by Kathinka Pasveer according to the score (see the form scheme).

What is completely new for me is the new kind of spatialisation: each section of each of the 24 layers has its own spatial motion between 8 loudspeakers, which means that I had to compose 241 different trajectories in space. That sounds very technical – and it is.

For the first time, I have tried out superimposing 24 layers of sound, as if I had to compose the orbits of 24 moons or 24 planets (for example, the planet Saturn has 48 moons).

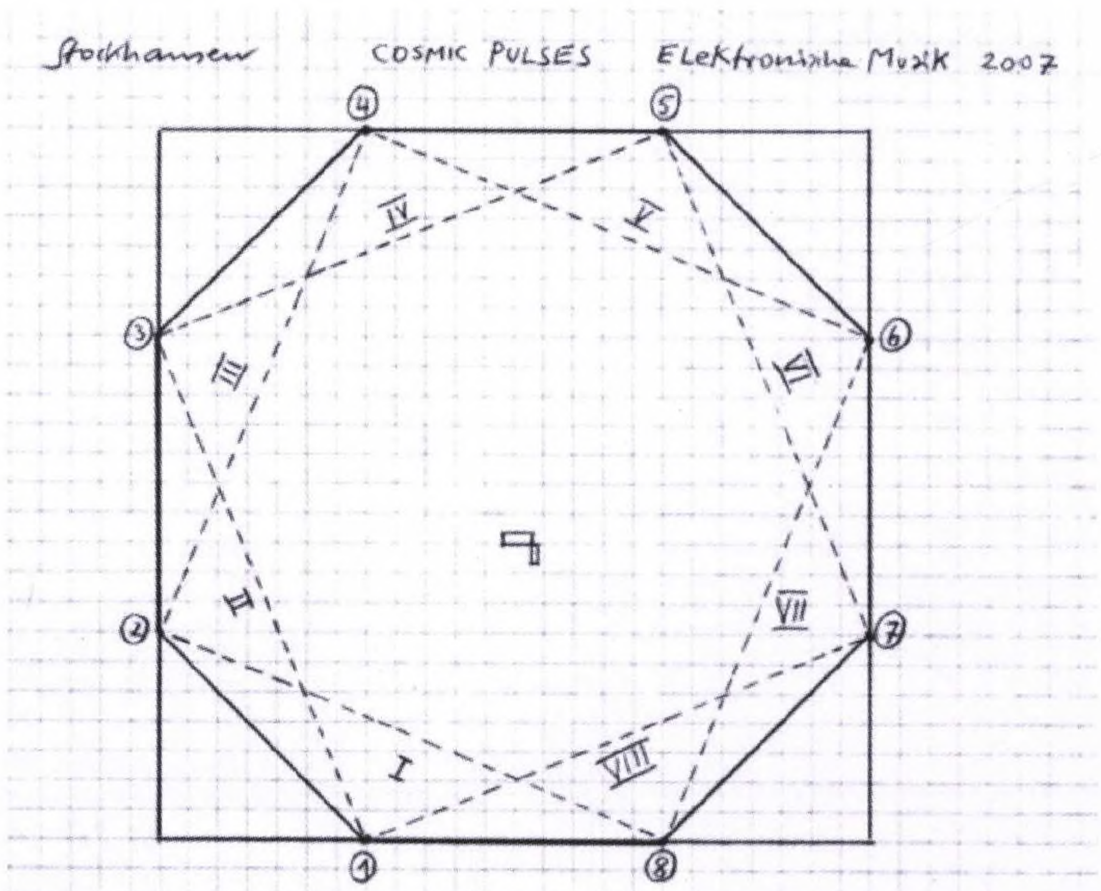
For making this possible, I am grateful to Joachim Haas and Gregorio Karman, collaborators in the *Experimental Studio for Acoustic Art* in Freiburg.

The loops and the synchronisation were realised by my collaborator Antonio Pérez Abellán.

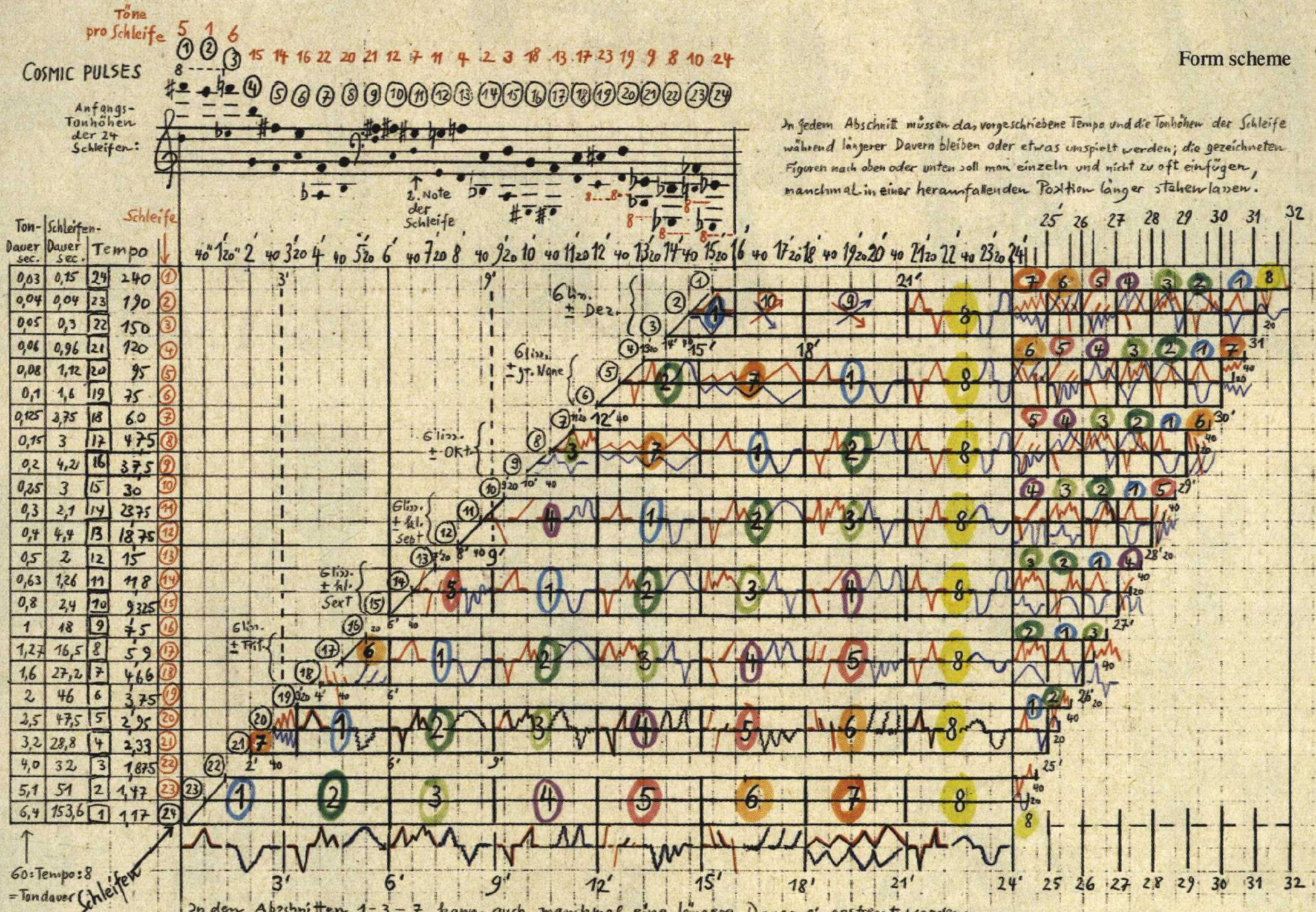
If it is possible to hear everything, I do not yet know. In any case, the experiment is extremely fascinating!

Stockhausen, Febr. 14th 2007

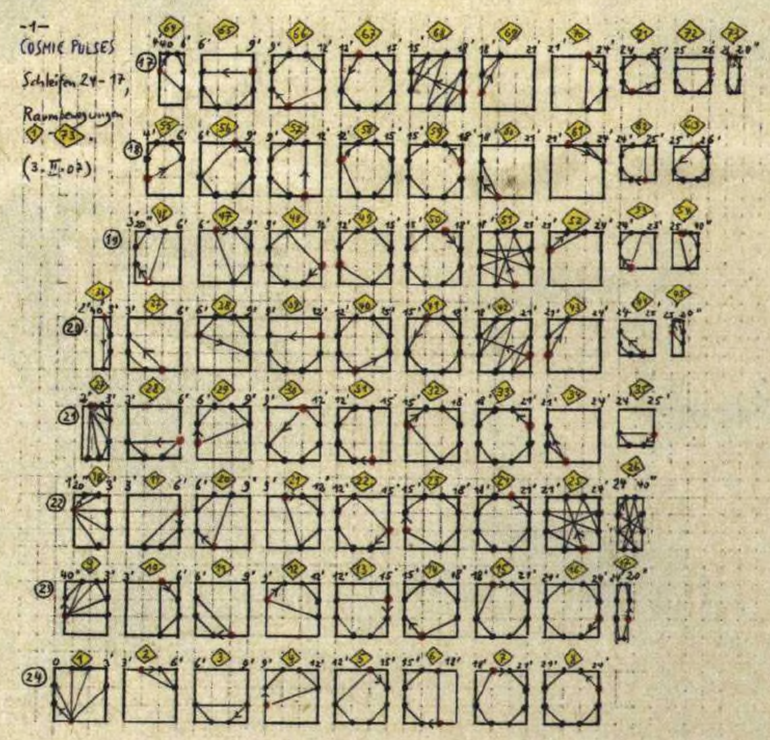
Distribution of the loudspeakers



Form scheme



Karlheinz Stockhausen; *Cosmic Pulses*. For electronics. Used by permission of Karlheinz Stockhausen, © 2007.



Prelude and the Last Hope in C and C# Minor by Tom M. Hall:
In study you, I—any serious student—should never bypass words or symbols not understood or misunderstood.

If a student or aspiring performer does not understand these words and symbols the performance becomes guesswork and "playing by ear"—much of the genius is lost. Performance is not the same wonderful conversation with the sources, the composer, the creator of the musical work. Similarly, if you do not understand the meaning of key signatures, time notations, the notes on the staff, the meaning of the Italian "adagio" and "poco" and so on, you will miss much humor in John's playful absurdity. The more you know of real musical terms and symbols, the more humor can be seen.

This work is hilarious and dangerous. It is easy to "laugh off" many of the words and symbols and directions satirizing musical notations not understood and imperfectly understood. It is not possible to make sense of all the improbabilities and impossibilities that John incorporates here—that is the joke, of course!

However, to best enjoy, and to extend the life of your enjoyment and discovery of the humor in these pieces, use a musical dictionary to clarify and increase your understandings of unfamiliar terms and symbols.

The more perfectly you understand the symbols used, the more completely you will enjoy the jokes!

Love theme from

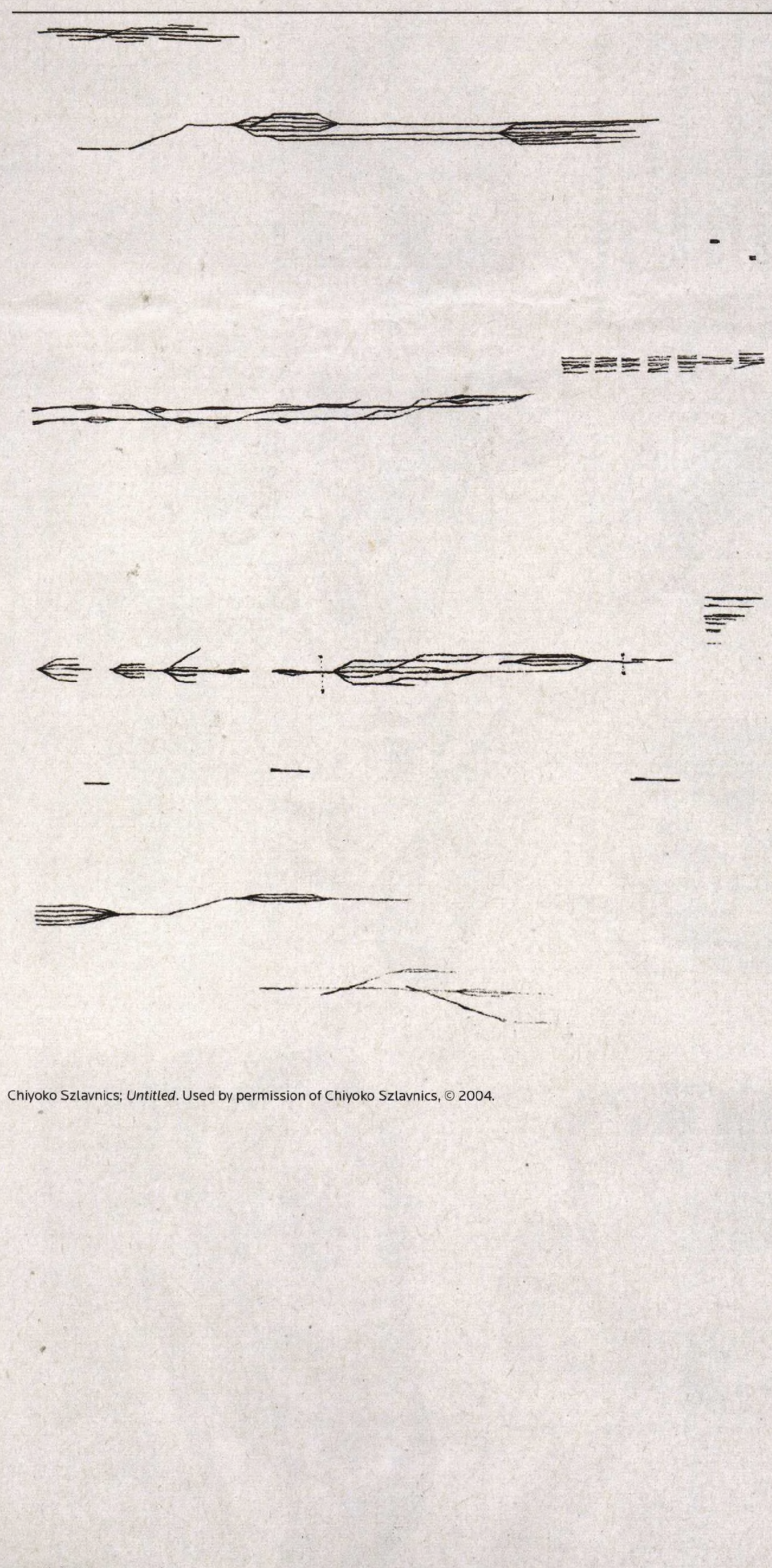
PRELUDE AND THE LAST HOPE IN C AND C♯ MINOR

from the Opera **Marche de L'oie** (***March of the Ducks***)

TRADITIONAL
Arranged by
JOHN STUMP
Op. 45,No. 9

*If necessary, stagger breathing so as to sustain organ point here

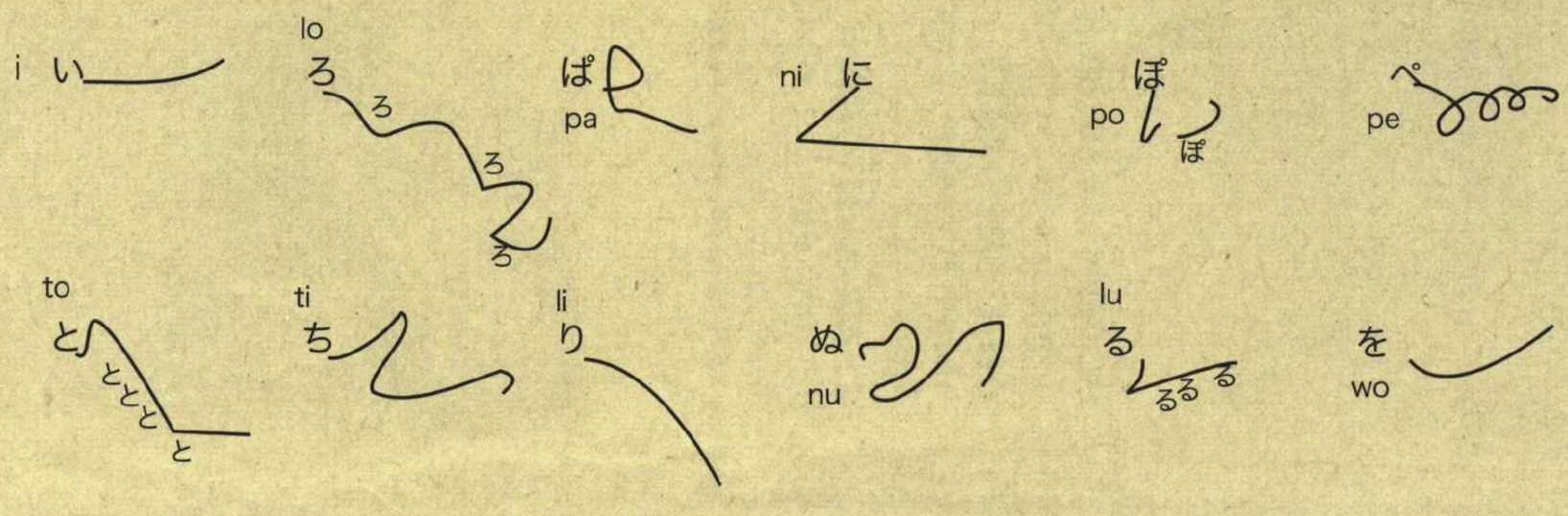
John Stump; *Prelude and the Last Hope in C and C♯ Minor.* Used by permission of the Estate of John Stump, © 1997.

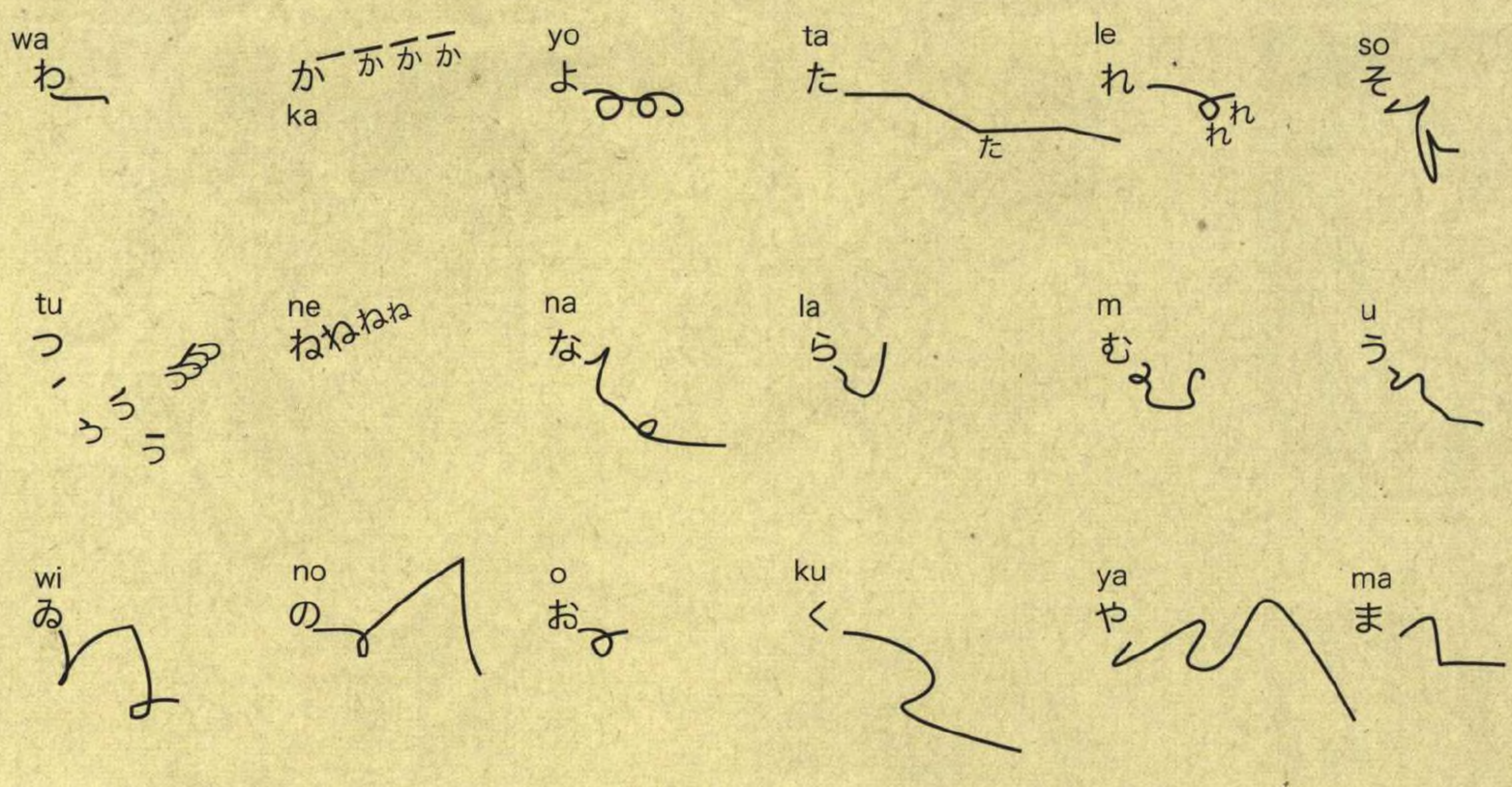


Chiyoko Szlavnics; *Untitled*. Used by permission of Chiyoko Szlavnics, © 2004.

Untitled: Around the year 2003, I began drawing forms with a pencil in an artist's sketchbook, drawings that attempted to capture—to graphically represent—some sounds I was "hearing" in my imagination. This type of "capturing fleeting sounds" would often happen late at night, while lying in bed, wondering and worrying about any given composition I happened to be working on. In the old days, I would scribble down rhythms and gestures, or rush to the piano to confirm the pitches I was imagining. Now, I let the fleeting presence of music in the mind have more freedom to take shape on a blank white page. I have been using such drawings as the primary basis for my compositions since 2004. I translate them into pitch and duration, urisng traditional notation. The strange beauty of each drawing inspires the music that results. The drawing itself, however, is also a result of imagining the instruments for which I am composing. My parents were both visual artists. I studied with James Tenney in Toronto—he used parametric graphs to control the material and processes of many of his compositions. This process feels very natural, it is very liberating. And there is an aleatoric aspect to the translation process, which is also liberating.

いろせす





Yuji Takahashi; *irosesu*. For voice(s). Used by permission of Yuji Takahashi, © 1998.

performing process

sing the japanese character hiragana you see
flexible timing without counting nor measuring with natural breathing

4 ways

1. drone - repeat the same character several times
   before going to the (vertically horizontally or obliquely) contiguous character

2. looping - move to the contiguous character gradually
   for instance 1, 12, 123, 1234, 234,34, 4 then skip to another spot

3. following - repeat another singer with delay then wait

4. responding - with any character with or without repeat

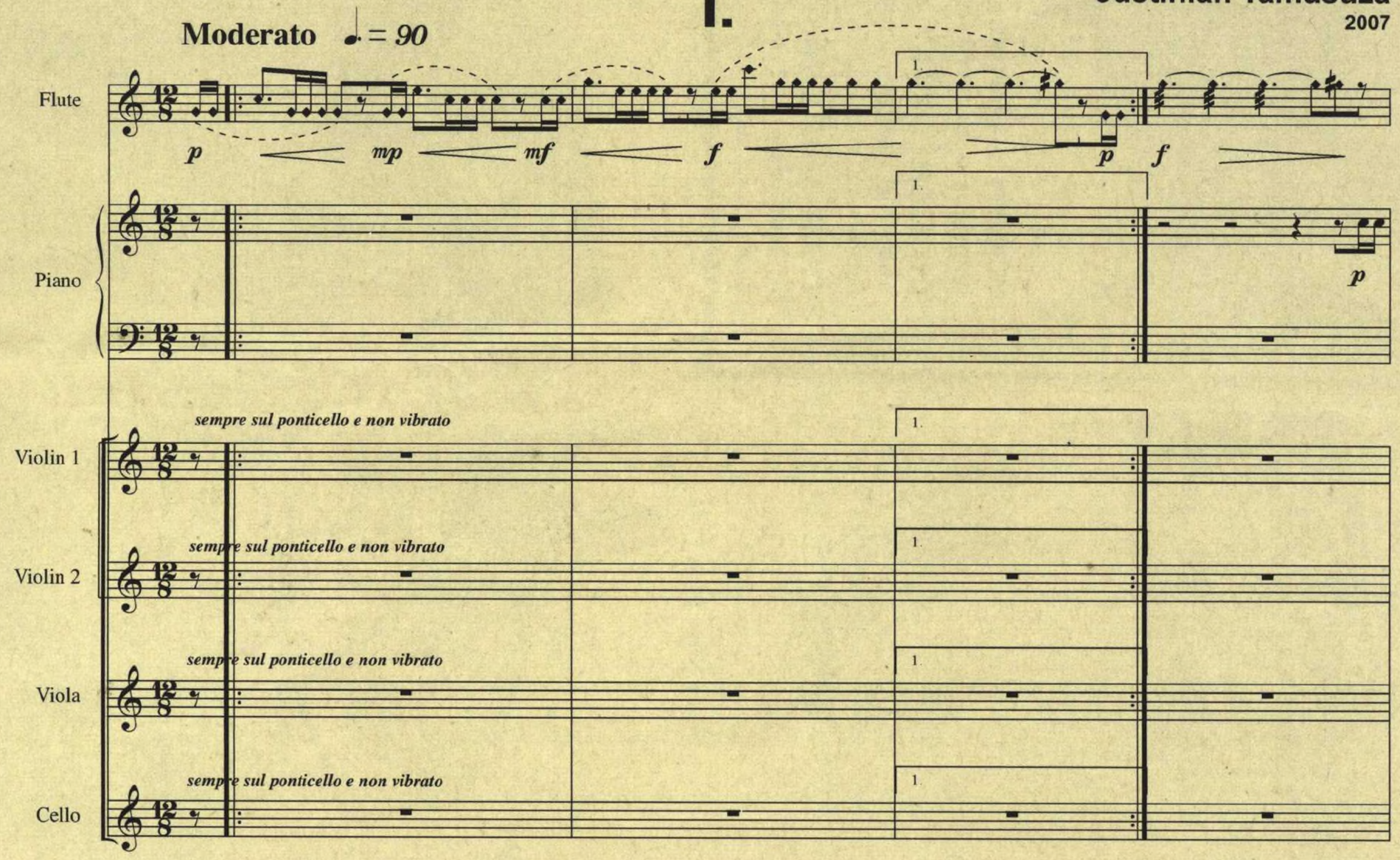
each singer decides the way and change after a while
end with a cue

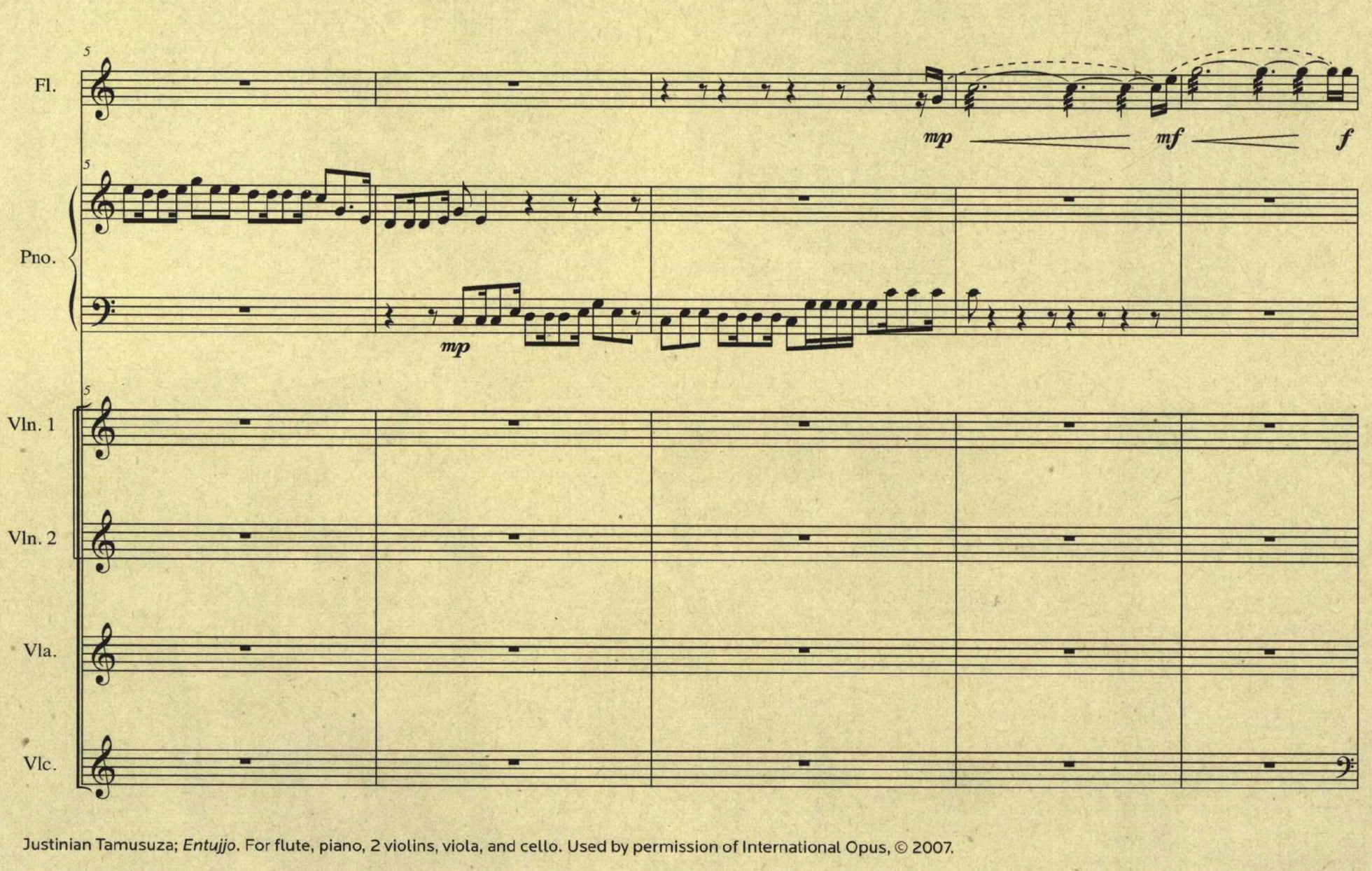
yuji takahashi
1998

Entujjo

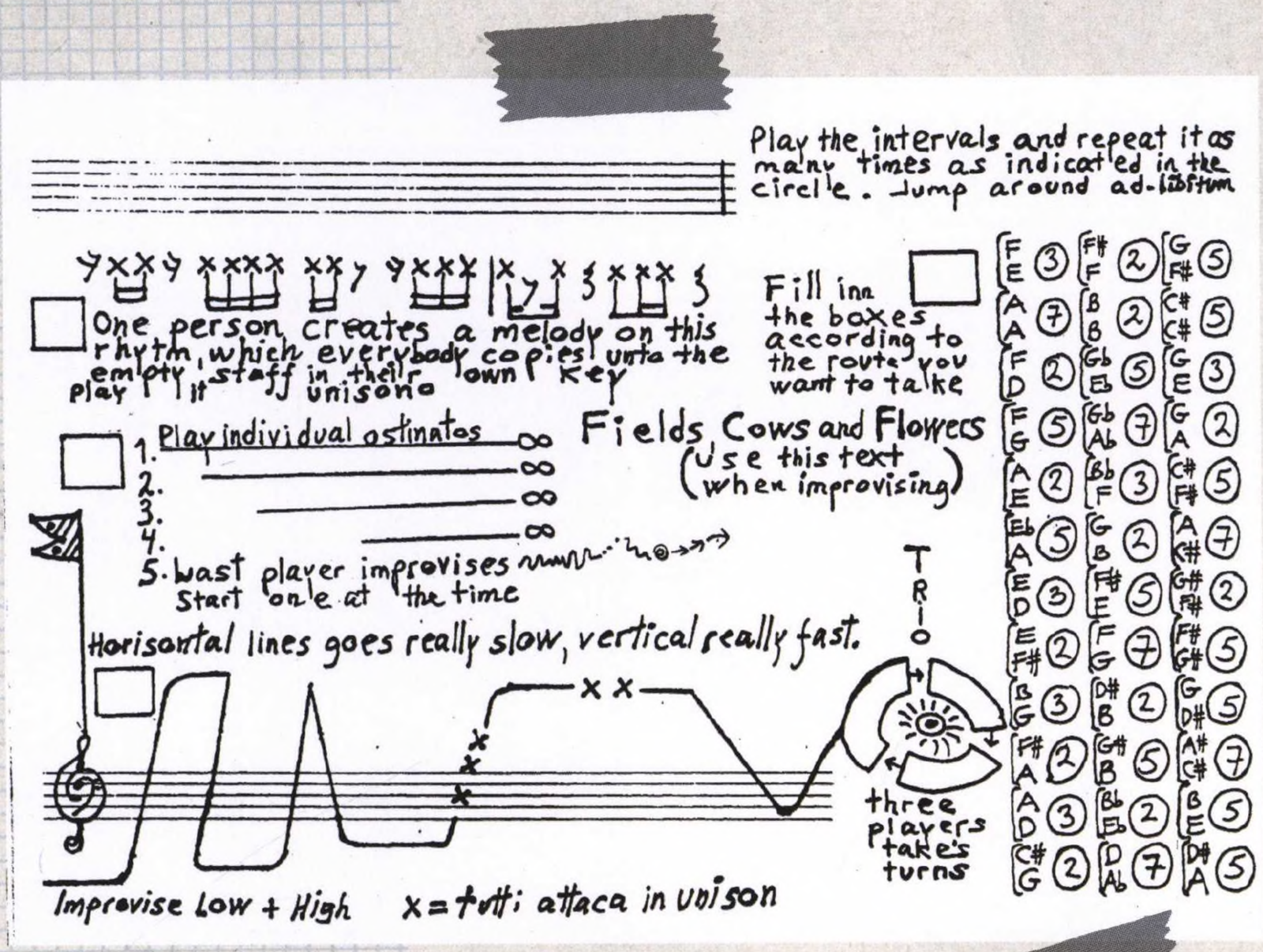
I.

Justinian Tamusuza
2007

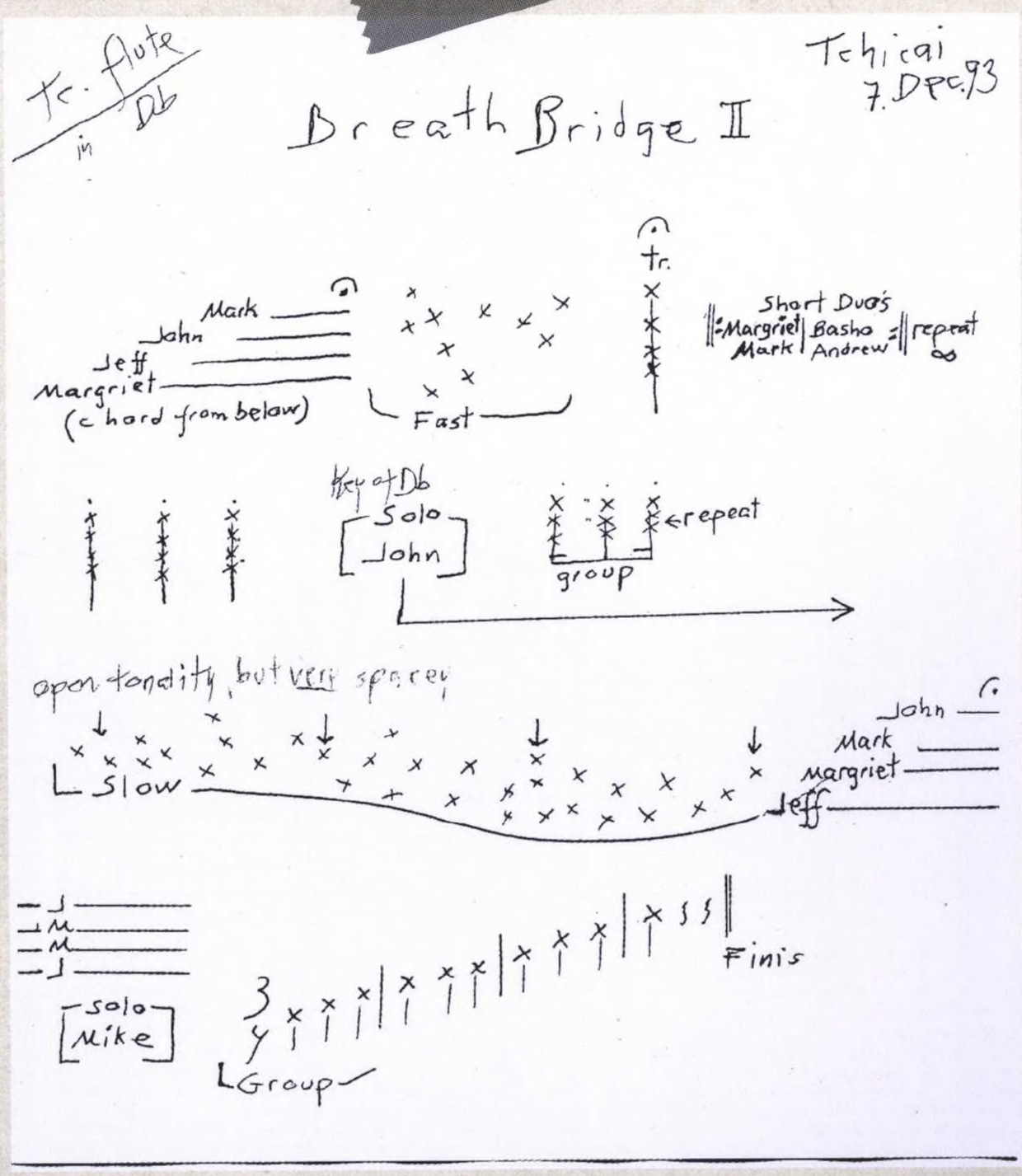




Justinian Tamusuza; *Entujjo*. For flute, piano, 2 violins, viola, and cello. Used by permission of International Opus, © 2007.

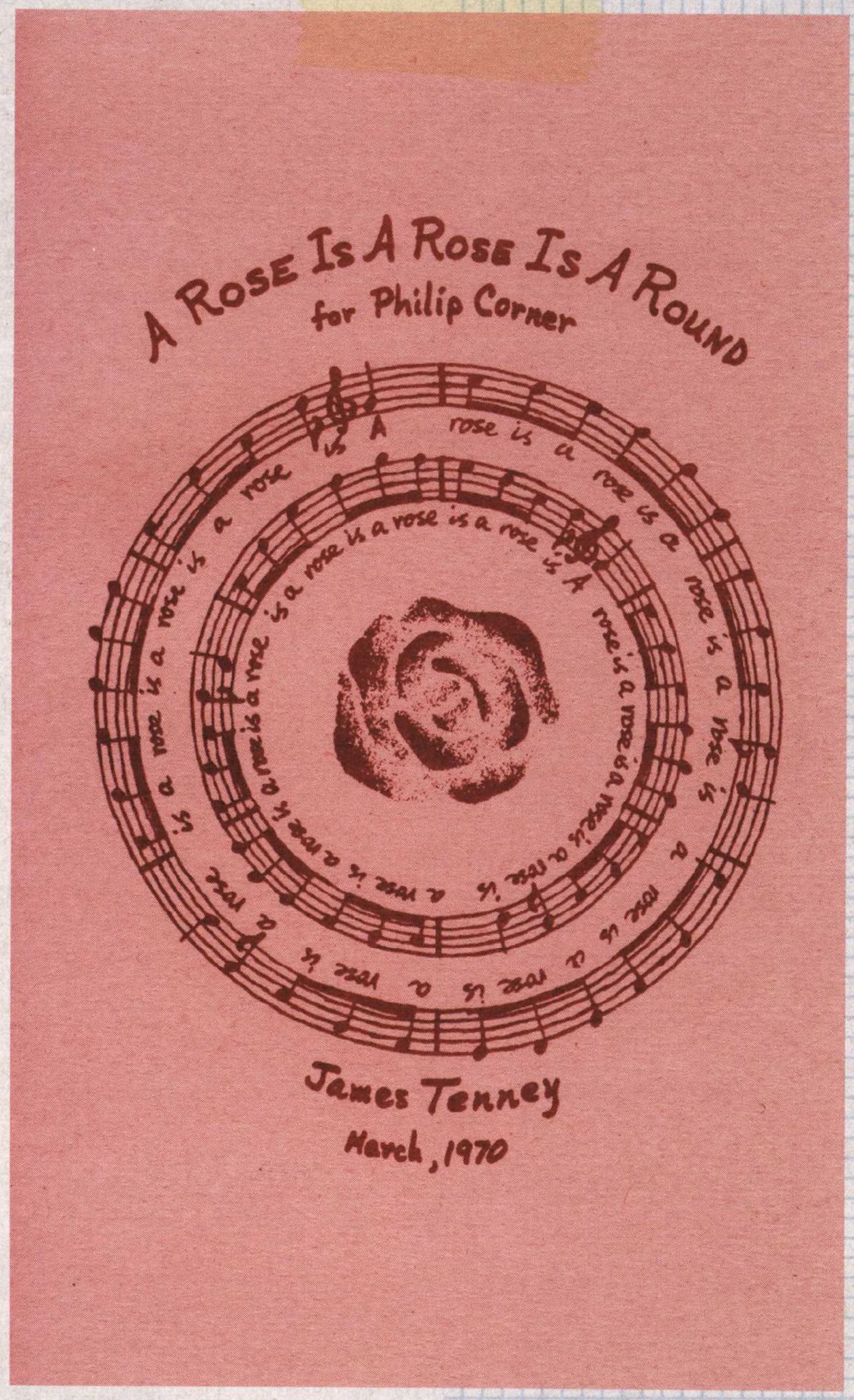


John Tchicai; *Fields, Cows and Flowers*. For jazz ensemble. Used by permission of John Tchicai, © 1999.



John Tchicai; *Breath Bridge II*. For jazz ensemble. Used by permission of John Tchicai, © 1993.

JAMES TENNEY

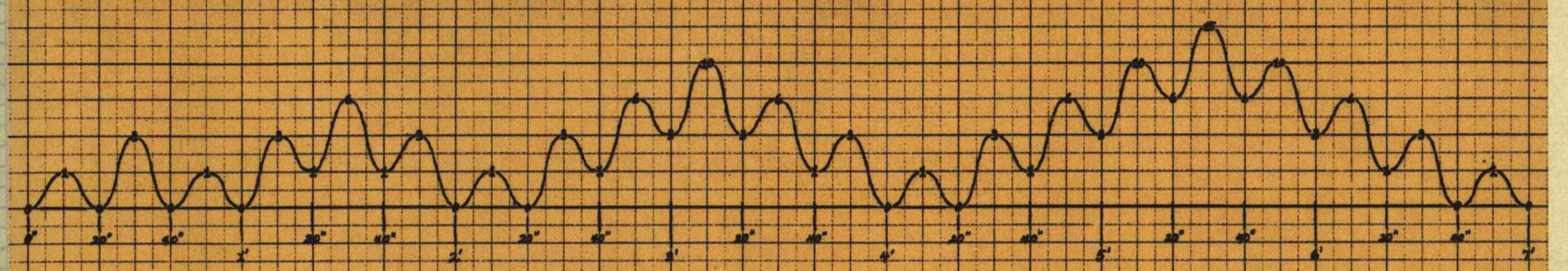


James Tenney; "A Rose Is A Rose Is A Round" from *Postal Pieces*. Used by permission of Sonic Art Editions (Smith Publications), © 1984.

BEAST

FOR STRING BASS

(for Buell Neidlinger)



Tune the E-string down to Eb. The piece begins with a unison (area) on the open A-string and the (stopped) E(b)-string. The graph indicates changes in frequency of the beats produced by these two strings sounding together, as the pitch of the lower string is very gradually changed. (A perfect unison would have a beat frequency of zero; the augmented fourth between the open A-string and the open E(b)-string should have a beat frequency of approximately 16 beats per second.) The sound should be as continuous as possible, and very resonant, though not necessarily loud.

James Tenney
7/30/71

James Tenney; "Beast" from *Postal Pieces*. For string bass. Used by permission of Sonic Art Editions (Smith Publications), © 1984.

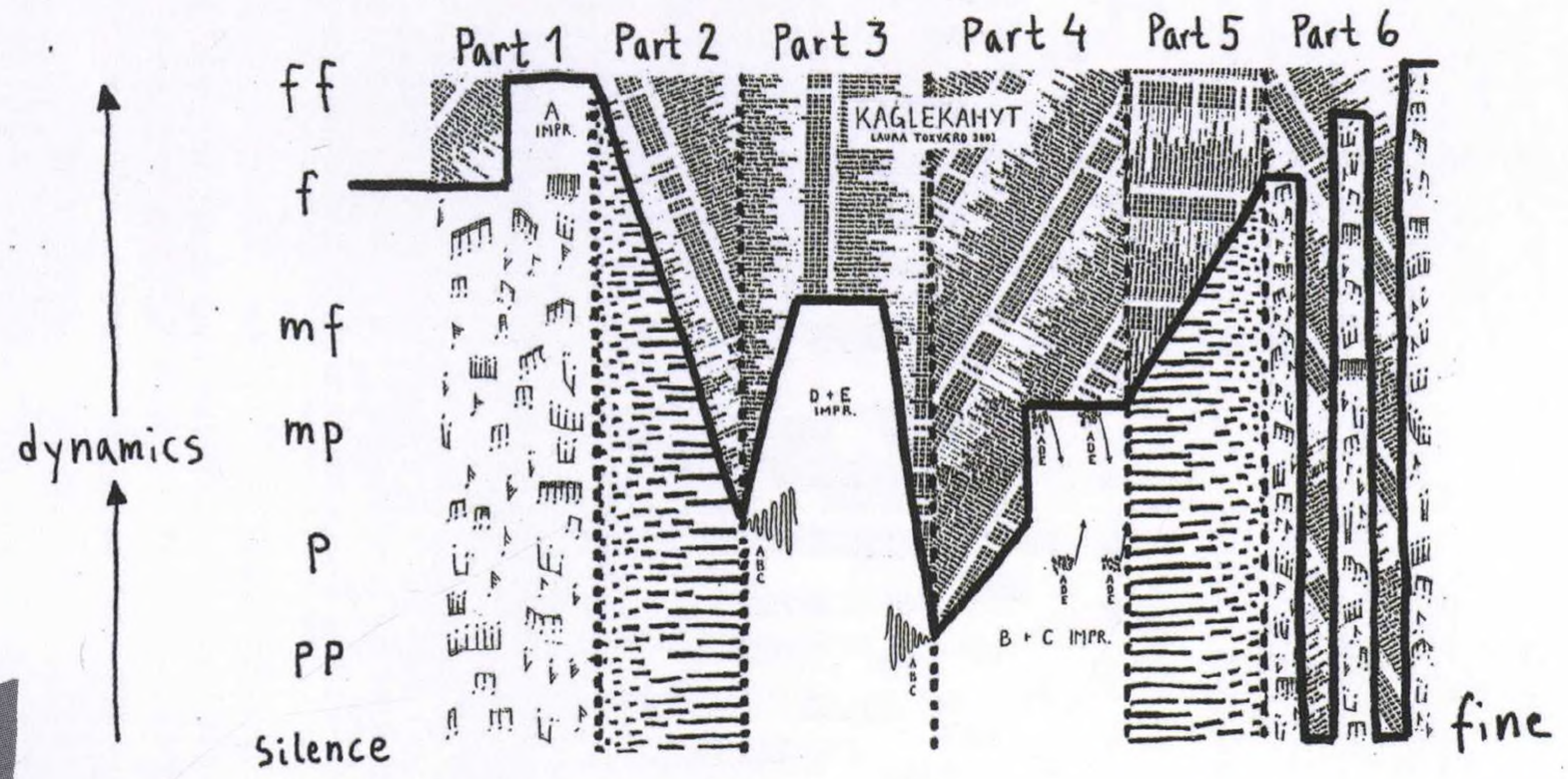
VOYA TONCITCH

Voya Toncitch; *Indian Cycle, Indian Elegy*. For any instrument(s). Used by permission of Voya Toncitch, © 2004.

CACKLECABIN

by Laura Toxvaerd

Copenhagen, Denmark 2002



Kaglekahyt is divided into 6 parts and is composed for 5 musicians (A, B, C, D and E). The instrumentation is optional. I suggest that A gives a cue when it is time to move on to the next part. Approximate duration: 10 minutes.

Part 1: Everybody plays abrupt and hectic. Half-way through A begins to improvise freely.

Part 2: Everybody plays short notes/sounds independent of eachother. The notes/sounds gradually become longer.

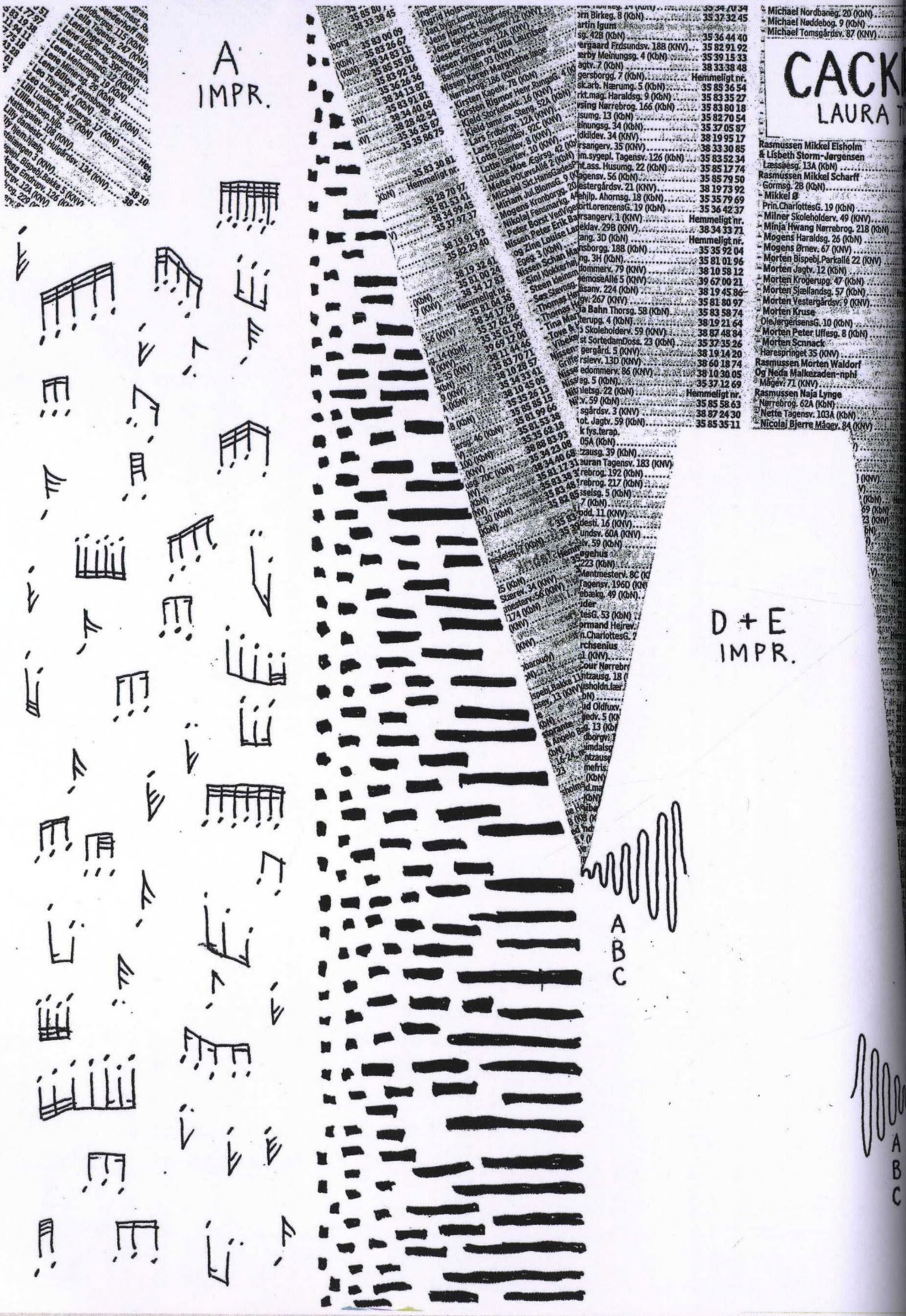
Part 3: D and E improvise freely. A, B and C play in the beginning and in the end a glissando containing respectively larger and larger/smaller and smaller intervals.

Part 4: B and C improvise freely. Half-way through A, D and E play 4 clusters. Alternately high notes/sounds with a glissando going downwards and low notes/sounds with a glissando going upwards.

Part 5: Everybody plays long notes/sounds independent of eachother. The notes/sounds gradually become shorter.

Part 6: Everybody plays abrupt and hectic 3 times and every time interrupted by silence. After the last time; fine.

Laura Toxvaerd; *Cacklecabin*. For 5 musicians of optional instrumentation. Used by permission of Laura Toxvaerd, © 2004.


A
IMPR.
D+E
IMPR.
A
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C
A
B
C

CABIN
AERD 2002

B + C IMPR.

JEFFREY TREVIÑO

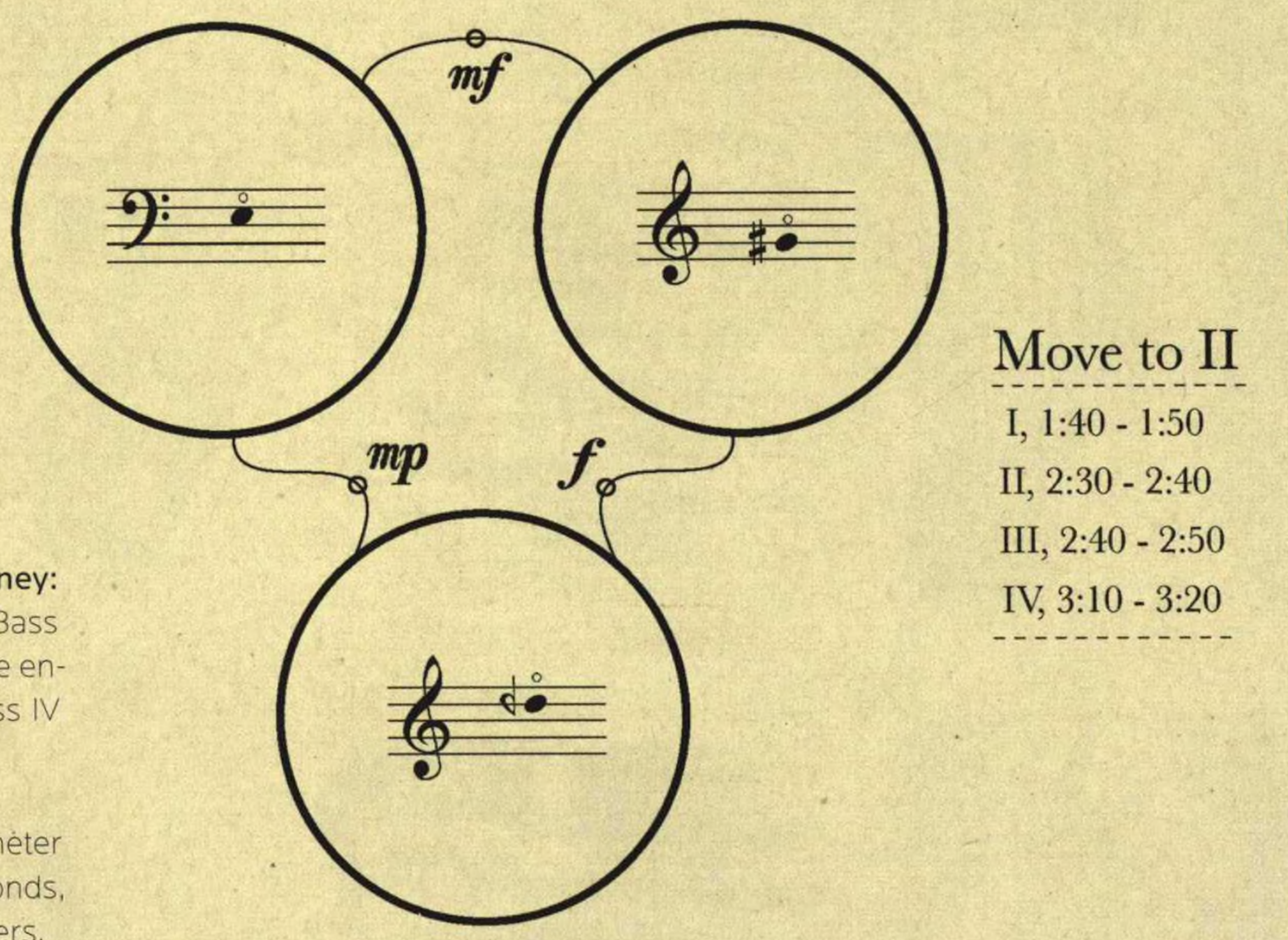
A

Bass I
Bass II
Bass III
Bass IV

1:00
Begin at I.

1:40 - 1:50
to II.

I.



Binary Experiment for James Tenney: Designate ensemble members Bass I, Bass II, Bass III, and Bass IV, and arrange the ensemble in a semicircular arc from Bass IV at stage right to Bass I at stage left.

This composition requires a chronometer that measures time absolutely in seconds, in a manner visible to all four performers.

Move to II

I, 1:40 - 1:50
II, 2:30 - 2:40
III, 2:40 - 2:50
IV, 3:10 - 3:20

4:00
Finish.
Wait 10
seconds.

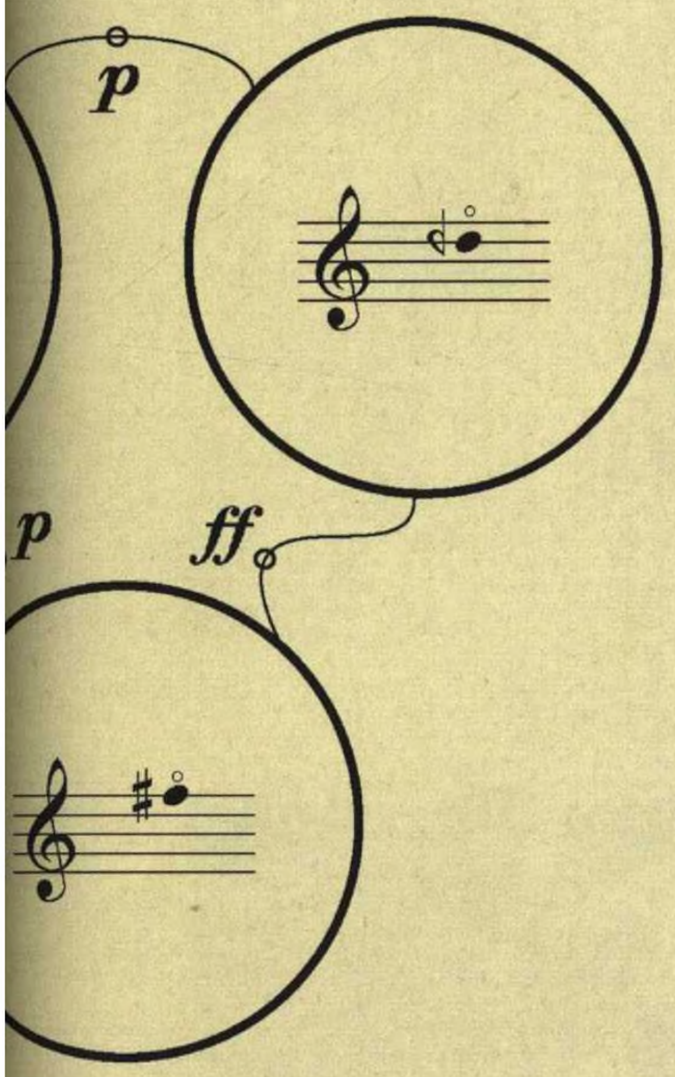
3:40 - 3:50
to III.

2:30 - 2:40
to II.

2:40 - 2:50
to II.

3:10 - 3:20
to II.

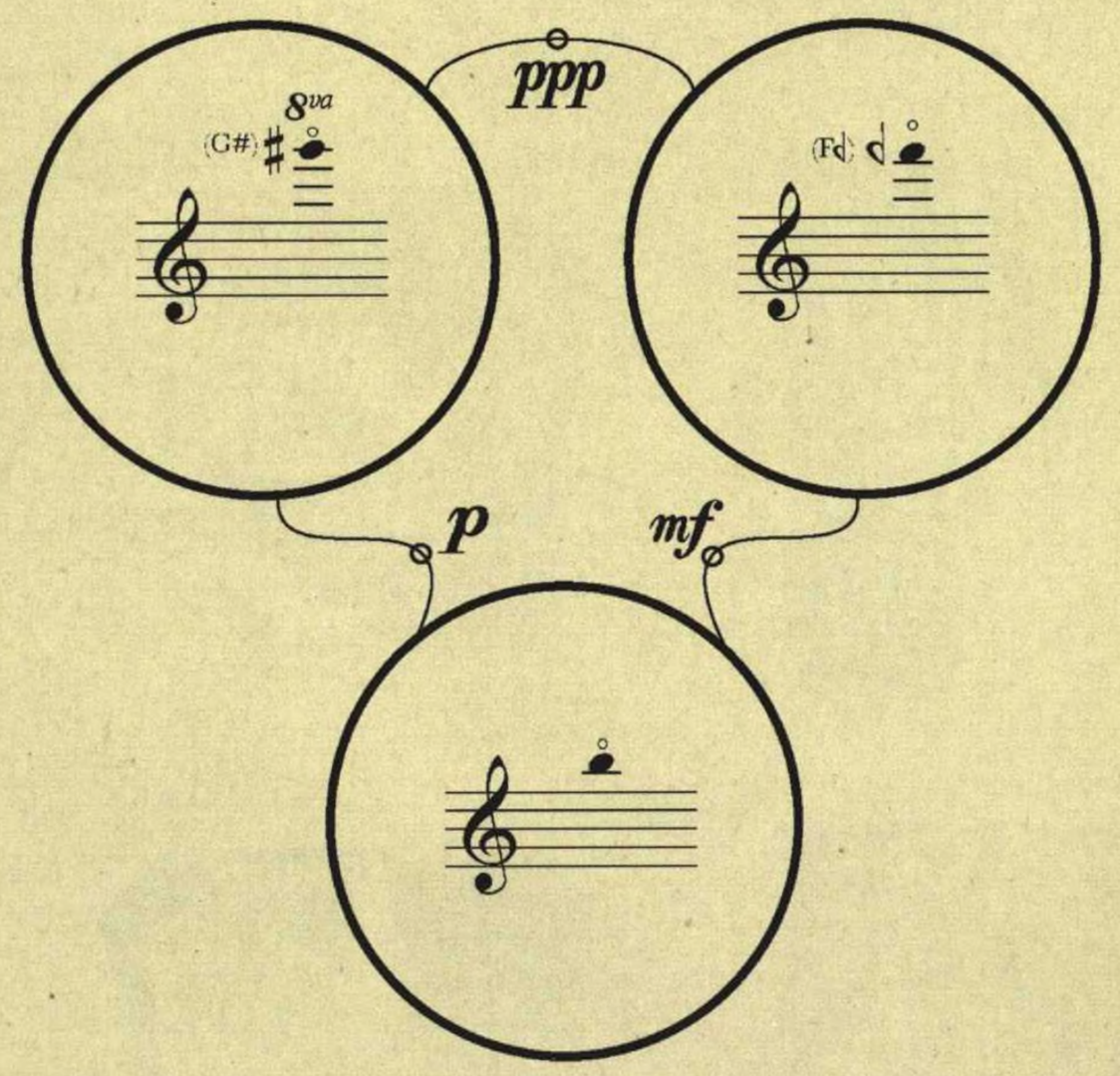
II.



Move to III

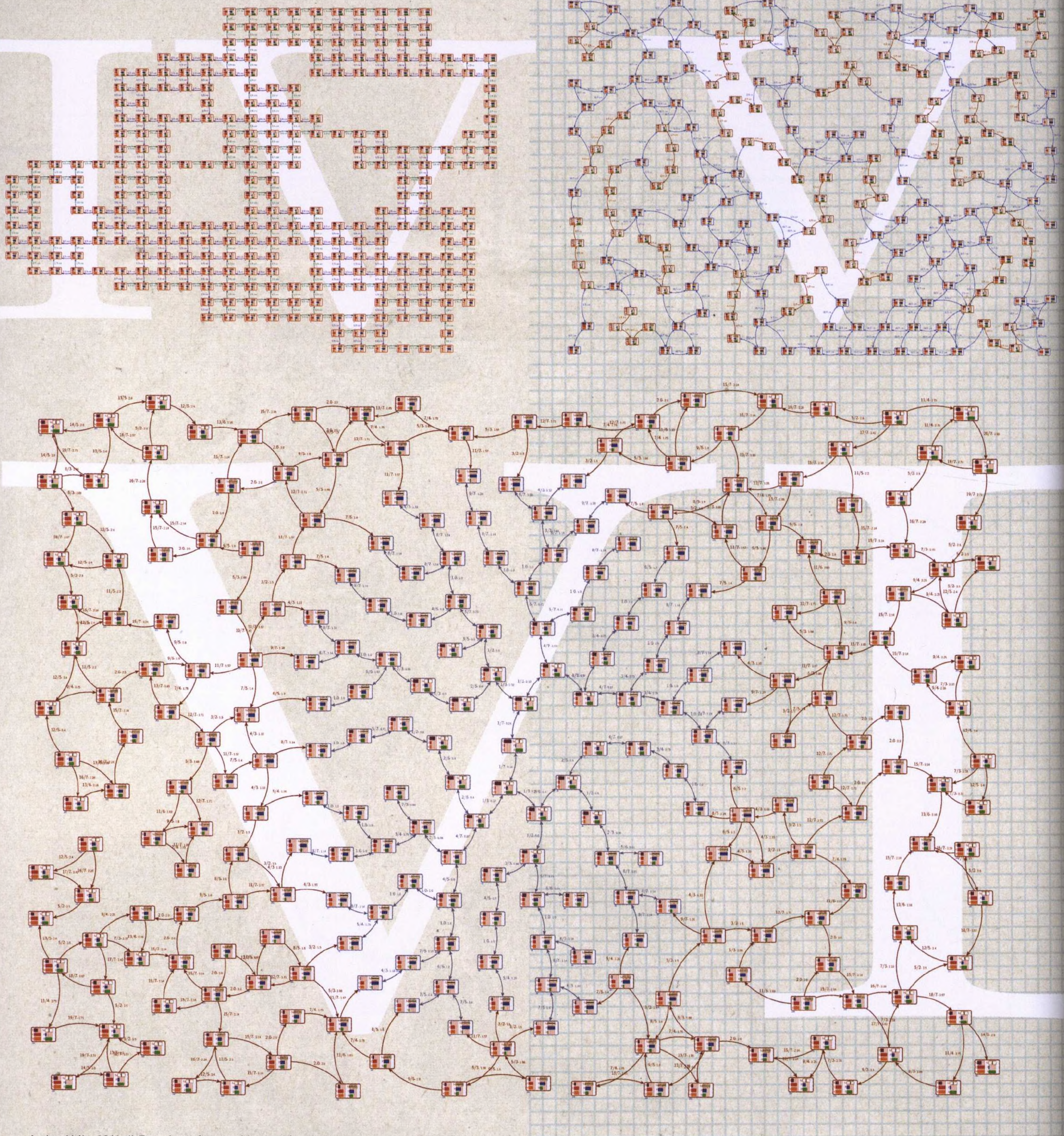
All, 3:40 - 3:50

III.

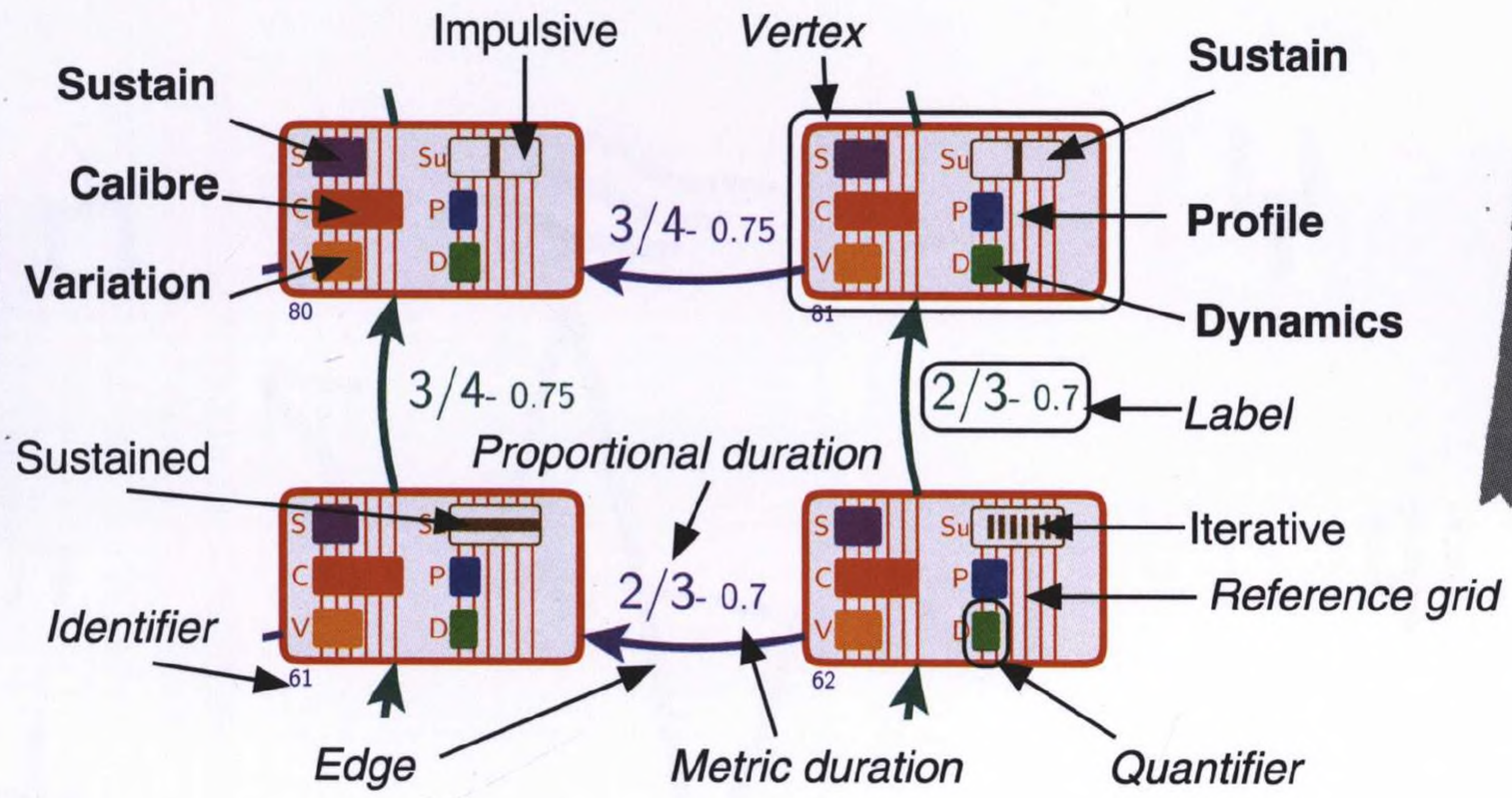


Jeffrey Treviño; *Binary Experiment for James Tenney*. For 4 contrabasses. Used by permission of Jeffrey Treviño, © 2005.

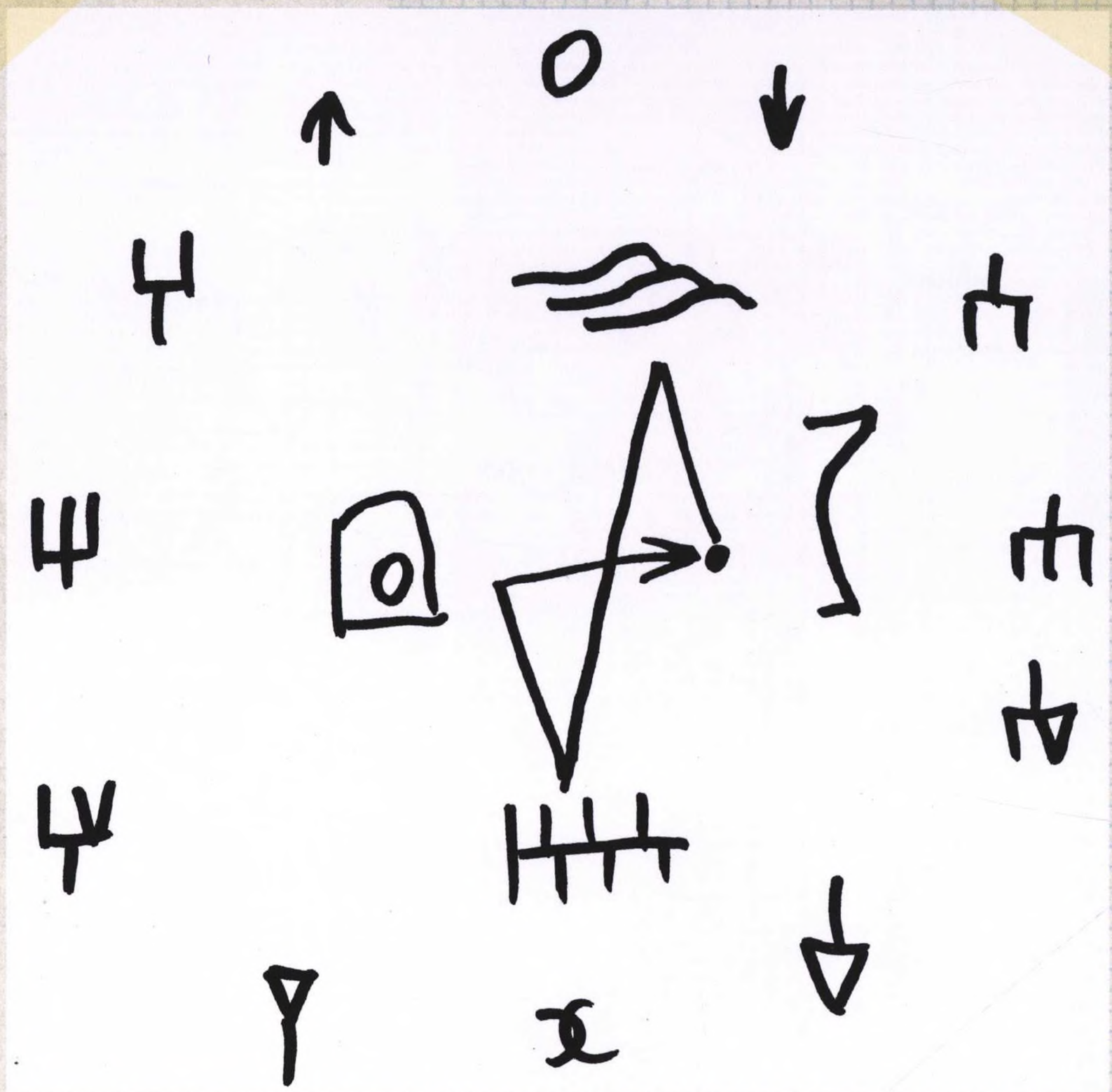
ANDREA VALLE



Andrea Valle; *16 Nodi*. For solo performer with a set of sound objects. Used by permission of Andrea Valle, © 2006.



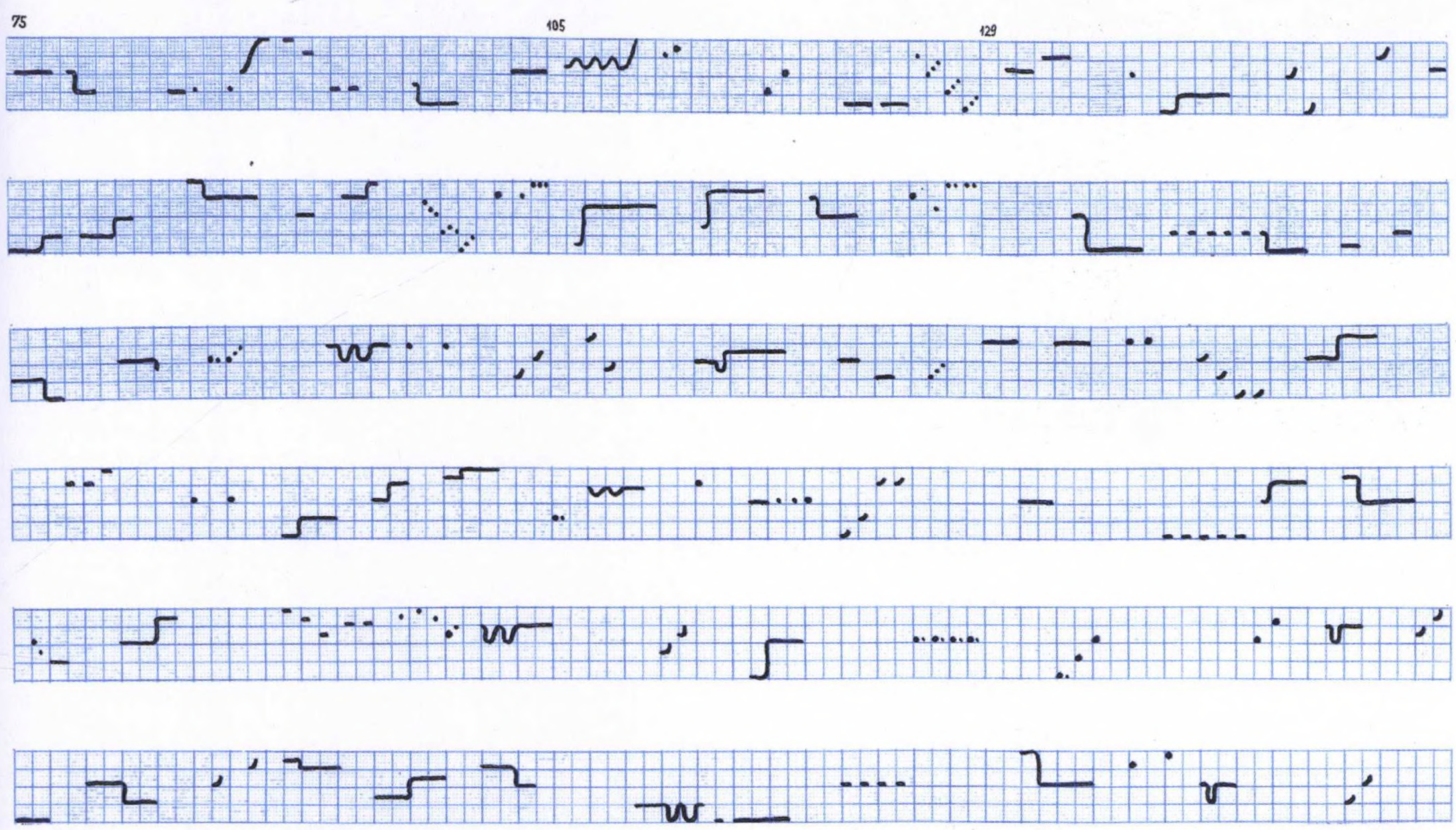
16 Nodi: The performer is supposed to define a path on the graph walking on the graph itself following the direction of the edges. The path is a time-stamped sequence of sound objects: sound objects depend on vertices, sequence depends on edges, and time-stamps depend on labels. Each sound object must be defined in its sonic properties by the performer following the six parameters: the latter also assigns the sound object's duration, depending on the profile parameter (e.g., an anamorphic sound must be short, while an amorphous one must not). While walking on the graph, the performer chooses a starting vertex, plays it according to its definition, chooses one among all of the possible edges exiting from the vertex, waits for the time indicated by the edge label, then plays the vertex that has been reached following the starting vertex, and so on.



J. Simon van der Walt; *CIRCULARTHING*. For various instrumentation including horns, trombones, strings, voices, and large ensemble of double-reeds. Used by permission of J. Simon van der Walt, © 2007.

CIRCULARTHING: Despite giving few clues as to how the piece is to be performed, this mandala-like drawing is the full score for *CIRCULARTHING;* it represents the ritual essence of the piece rather than its notation. It was first performed as part of a project entitled "The Society for High Art Music," on that occasion using two tenor horns and two trombones, and has since found a place in several other works—for strings, for voices, and for a large ensemble of double reeds. A performing tradition thus exists beyond the score, transmitted orally by me.

The outer part of the diagram is a cryptic representation of the cycle of fourths, with some relevance to pitched material. The inner graphics are a reminder of a series of musical gestures to be executed while facing in particular directions. In performance the score is painted onto a carpet, around which the players move.



SAMFUNDET
© BY THE SOCIETY FOR THE PUBLICATION OF DANISH MUSIC

Ivan Vincze; *Agelce*. For 6 instruments ab libitum. Used by permission of Edition Samfundet, © 1996-1998.

Stephen Vitiello; "Vertical" from *First sketches of Beta Collide*. For piano, trumpet, flute, and electronics. Used by permission of Stephen Vitiello and Courtesy of The Project, New York, © 2007.

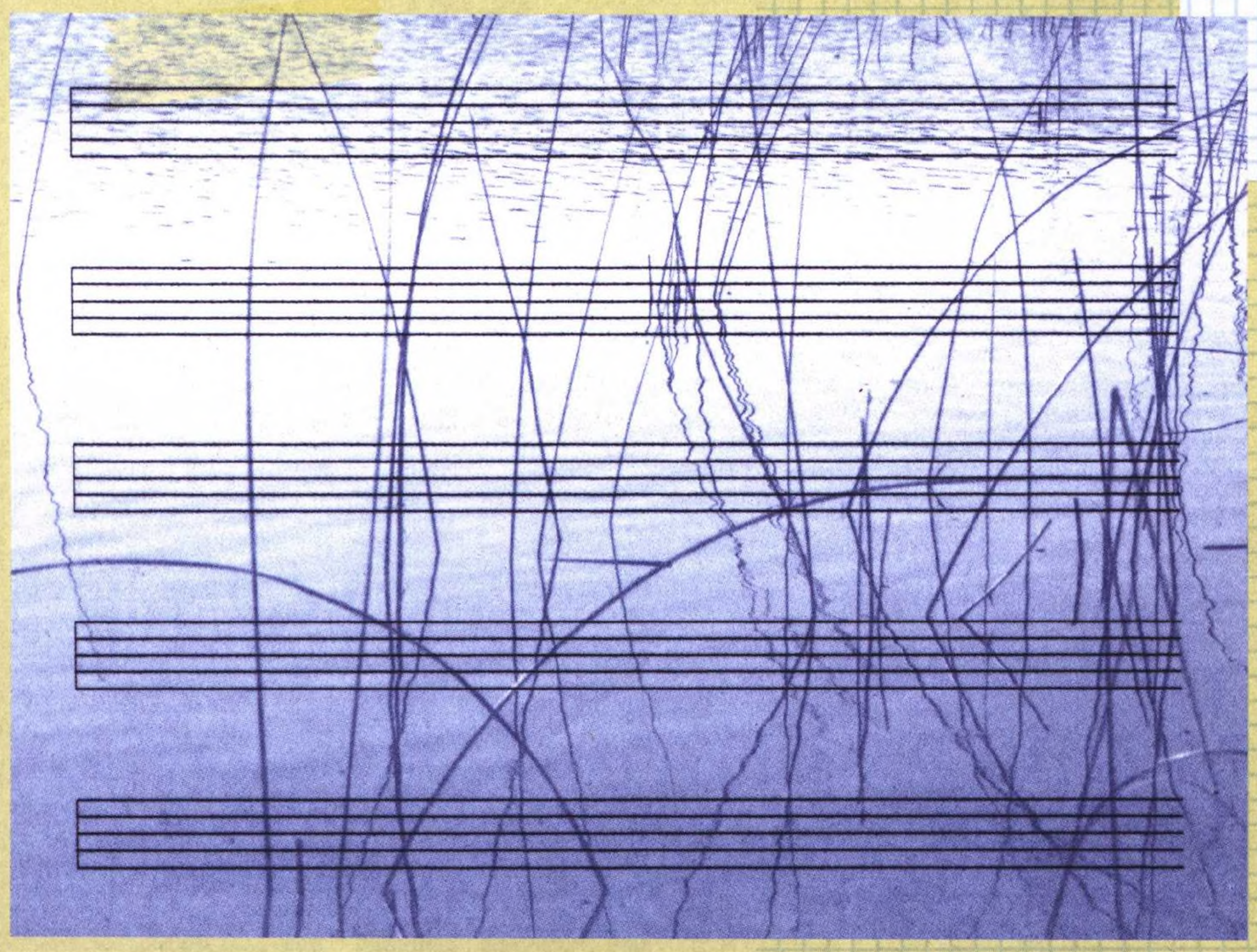
First sketches for Beta Collide:

"Vertical"
faster

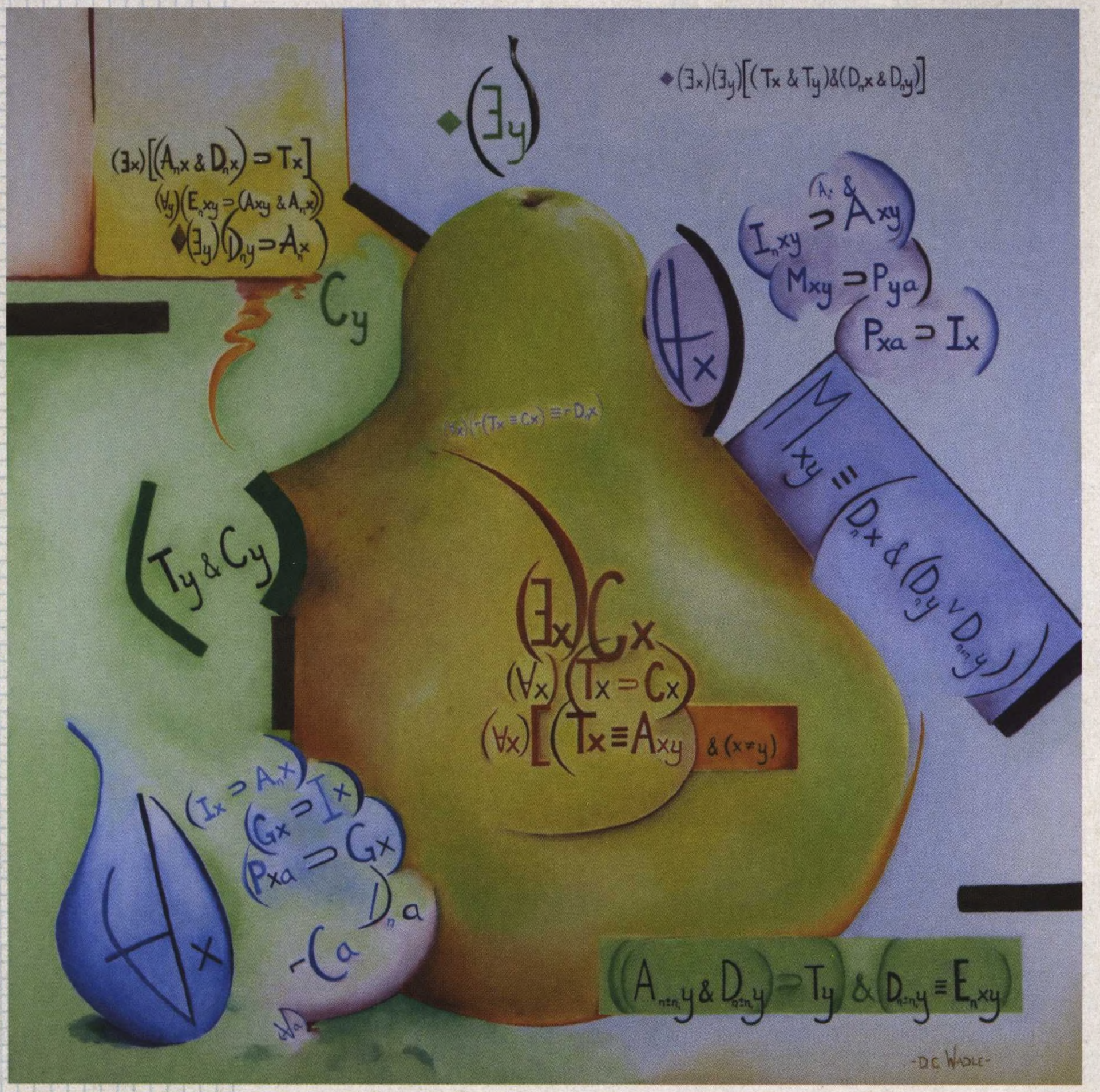
- piano is fingers on wood, not keys at least for first half
- trumpet is extremely close mic'd, similar, pops of breath
- flute is horizontal (where vertical above), percussive taps at first until taps become notes
- electronics fill in the bass content with low-frequency oscillations and high-frequency with fast filter

"First Horizontal"
medium tempo

- piano is percussive, repetitions from ripples
- trumpet floats—and then collides with flute (sliding notes not full scale but x number of whole steps)—trumpet has largest room to improvise on this piece
- flute slides up along, crossing with trumpet toward middle and end. Sound is between a drone and a slide-whistle if a slide-whistle had grit
- bass if it's there plays to piano
- electronics sample all of the above, jagged and coming apart, splits wired, occasionally filling in silence with silence



Stephen Vitiello; "First Horizontal" from *First sketches of Beta Collide*. For piano, trumpet, flute, bass and electronics.
Used by permission of Stephen Vitiello and Courtesy of The Project, New York, © 2007.



Douglas C. Wadle; *Logos prior Logos.* Oil on canvas. Score for performance (30" x 30"). Used by permission of Douglas C. Wadle, © 2007.

DOUGLAS C. WADLE

Douglas C. Wadle; *Amphiboly*. For two guitars. Acrylic on canvas, variable duration (24" x 24"). Used by permission of Douglas C. Wadle, © 2004.

Douglas C. Wadle

The equations contained within *Logos prior Logos* are statements in formal logic notation, which allow undefined variables and properties to be placed into relations with other undefined variables and properties. A realization will, then, be based upon the assignment of performance parameters to these variables and properties, resulting in a set of rules according to which its final form will be fixed. I refer the curious to Samuel Guttenplan's *The Languages of Logic*, 2nd edition, (Blackwell Publishers, 1997), for a clear description of formal logic operators.

The object of reasoning is to find out, from the consideration of what we already know, something else which we do not know.

-Charles Sanders Peirce
The Fixation of Belief (1877)

I understand "tradition" as the set of tools passed on to us by our predecessors and mentors, by which we situate ourselves in our world. As such, tradition allows us to make judgments concerning our environment. From these judgments, we determine which actions are needed; tradition provides us, again, with the means of executing these actions. Removing (elements of) tradition removes the ability to make such judgments and, therefore, the ability to take action, making the world and our work within it utterly and absolutely inscrutable—not even indicating what kind of things they are. Every break with tradition, as an action, must be undertaken from some judgment, judgments being determined by tradition. How, then, is it to effect a turning away from tradition? The answer, I believe, lies in the complexity of tradition (necessary if we are to deal with a complex environment and, perhaps, a precondition of perceiving a complex environment) and the intersection of multiple traditions within a single mind. This complexity allows some particular aspect of the tradition to be thrown into relief by the operation of other aspects of that tradition (or collections of traditions available to the mind undertaking this task). By thwarting expectations in this aspect, the inadequacy of the presently available judgments are recognized and an action is called for that will, proceeding from that which remains intact of the tradition, enlarge the set of tools possessed by the individual through tradition so that a judgment may be made. The calculated arrangement of circumstances that require just such an action will be called an "experiment."

Experiments result in a judgment of what, exactly? Judgments are directed at some perception of the world: an object or a situation—just the sorts of things artists create. Judgments arising from an experiment deal with those perceptions that are not successfully integrated into one's existing traditions(s), including certain artistic creations.

Here I must venture a brief description of such artistic creations in terms that will allow us to understand the operation of this experimental process. I use the term "art object" to refer to a perceptual impetus, containing elements ordered according to the rules of some tradition that treats those elements as meaningful signs. The art object gains its identity, as object, through a larger ordering principle that binds the signs into a whole, the relations of these elements to the whole being of sufficient complexity to invite a multitude of interpretations. The sum of these interpretations are understood to constitute the "work," making the work an open process rather than a closed fact. This process, as a process of interpretation and interpretation of interpretations, takes the form of a dialogue. I have the experience reading Gertrude Stein or James Joyce that I cannot predict the ending of the sentence, the meaning toward which it is driving, and so I must focus my attention instead on each word. The same is true of listening to the music of John Cage. The logics of musical construction, as developed over hundreds of years in Europe, are inoperable, directing our attention to each individual sound. Upon repeated listening, one develops a strategy, a personal tradition of listening, by which to make judgments of such art objects, thereby allowing interpretations. Our attention is once again diverted from the individual sounds (elements) to a new, though idiosyncratic, conception of musical order. It is precisely

this movement, from the arrangement and subsequent apprehension of elements, about which one is unable to formulate judgments due to the absence of an adequate tradition by which to integrate these elements, to the formation of a personal and adequate means of judging and, subsequently, interpreting the same, that I identify as constituting the experimental area of the arts.

Experimental activity allows the work (as dialogue) to continue forward, to spur on future art objects, interpretations, and utterances. With the establishment of new, personal means of understanding works, we have furnished ourselves with a new basis for new actions that may either recapitulate this new understanding (turning it into a tradition) or else, continuing forward, may question it, focusing on elements still unconsidered (suggesting further experiments). I pursue, as a matter of experimental pride, the latter course. This presents obvious problems. As such work is dependent upon my challenging of my own preconceptions and requires that audiences do the same of their own preconceptions, and as this process is cumulative, each person moves into an increasingly specialized, though increasingly refined, thought world. The more specialized the thought world, the more difficult it becomes to bridge that world with other worlds. To avoid heremeticism, we must then seek out communities in which we can engage in discourse around our thought worlds, finding the common points from which these thought worlds diverge. How far from the prevailing attitudes of those working in our chosen media we situate this common point will determine how large or small this community will be in reference to those using this or that medium. The art objects created, whether in fixed form or fleeting performance, must be let go of, must be allowed to operate in others' thought worlds, even those outside of one's community or communities of dialogue. Art objects might be constructed with this in mind, that any interpretation adds something to the existing discourse (tradition) into which the art object is introduced, and it is the expansion of this discourse (experiment) that gives to the art object its identity as a work; and so the conscious introduction of uncertainty in some area, making the work an experiment begun with the ambiguous art object, becomes fruitful.

The ambiguities in the code that any stepping outside of traditional practice engenders are akin to the deciphering of Joyce, Stein, or Cage. Tradition does not supply one with the necessary tools to make sense of the object with which one is confronted. To make sense of the thing, then, is to formulate a strategy for reading those elements (as signs) that are present. Often these may be traditional signs in non-traditional contexts, or they may be the signs of some other system of signification, or they may be newly invented. I am particularly interested in the first two of these possibilities as they allow attention to be directed toward the judgments available within the tradition(s) from which the signs are taken. Such uses of signs require the generation of new meanings because of their unusual circumstances. The act of interpretation becomes self-consciously a task of interpretation, the role of the receiver becomes the role of a partaker in the constitution of the work (as dialogue). The claim of the art object to any absolute meaning is given up. Rather, it becomes an object of intellectual engagement conducted through the studied manipulation of the signs contained therein.

In the case of experimental musical notation, we have an art object (the score) resulting in one of an infinite set of possible (sonic) realizations, "realization" being understood as a new art object arising through actions taken on the basis of an interpretation of a preceding art object that has been constructed for the purpose of giving rise to such realizations. The composer may receive the information of any realization and analyze (interpret) it in light of the symbols contained in the original score. The resulting information may then lead to a re-evaluation of the composer's own beliefs regarding the information presented in his or her score, which may in turn instigate the creation of a subsequent art object. Such dialogue makes the distinction between practitioner and theorist untenable, and the composer finds herself or himself moving into the fields of the visual arts and experimental literature in the pursuit

of her or his ideas. The subject matter suggested by these explorations, furthermore, is wholly philosophical: What is the nature of experience? How does the mind impose order on its perceptual environment? What is the nature of the (art) object? Where we begin with the composer working to break free of some aspect of musical tradition (or, specifically, musical notation), we end with the composer breaking down the traditional boundaries between areas of thought, freeing art from the bonds of mimesis (Plato), emotional catharsis (Aristotle), and even beauty (Kant), allowing artistic experiment to be a player in intellectual inquiry equally with language (which, too, is held by many philosophers to have no concrete meaning).

Jennifer Walshe; *Whives: Trio*. Used by permission of Jennifer Walshe, © 2007.

Jennifer Walshe; *Ingredient Projects for Demulcent Cake*. For voice. Used by permission of Jennifer Walshe, © 2004.

THIS IS WHY PEOPLE O.D. ON PILLS /AND JUMP FROM THE GOLDEN GATE BRIDGE

This piece is performed by 1-10 performers performing on any instruments (including voice). Each performer prepares and practices their own individual "path" according to the directions given below. The piece consists of the performance of this/these "path(s)."
If the piece is performed by a soloist, it should be a minimum duration of 5 minutes long, and is called "THIS IS WHY PEOPLE O.D. ON PILLS."
If the piece is performed by a group, the group should agree on a performance duration (minimum 10 minutes). Each member of the group's path should be a minimum duration of 5 minutes long, and a performer can begin/end their path anywhere within the chosen performance duration. A performance by a group is called "/AND JUMP FROM THE GOLDEN GATE BRIDGE."

Directions:
1. Learn to skateboard, however primitively. Re-learn your body's weight, muscles, bones, geometry, abilities, flash-points afresh. Meditate on pressure, torque, weight, movement, air, light, space, lines. Focus minutely on surface, micro-surface, bumps, cracks, debris, concrete, asphalt, granite, marble, plastic, wood; gradients, slopes, verticals, the architectural qualities of what you skate on, the "wallness of wall." See, smell, hear, feel, how your body relates to the board and through it to space. Try to learn or at least attempt a few tricks. Even if you cannot do the tricks, analyse and understand them in your head and body, the basic concepts, movements, weightings, shifts and throw involved in ollies, grinds, kickflips, aerials, backslides, boardslides, rock'n'rolls, varials (or other tricks, and combinations of any of them). Feel time compress and expand as you move in and out of these tricks, launch, rise, catch stillness, fall; spin, slide, pivot, leap.
2. Augment this experience by watching skaters, visiting skateparks, viewing skateboard photos, videos, looking at skating magazines, books, films, websites. Try to understand and absorb what you see with your body, internalizing these ways of achieving speed, height, weightlessness, skating the paths virtually with full attention.
3. Examine and meditate on optimum skating environments, either real or imagined, taking in the macro- and micro-structure of these environments. Go for a walk and imagine being able to skate everything you see – streets, roads, walls, trees, curbs, planters, slopes, gardens, bins, lamp-posts, footpaths, bushes, cars, signs, window-sills, ramps, shopping trolleys, pools, slides, bollards, roofs, benches, cows, hand-rails, fences, edges, lips, steps, drains, ditches, rims, gutters. Contemplate the ability of skate-boarding to articulate space, find new paths through architecture, fresh uses for it, notice and exploit visible/invisible relationships.
4. Compose an imaginary path you would like to skate. This path should push and force you to limits, be rich, beautiful, complicated and stylish, and incorporate some tricks. The path is limited only by your imagination. Internalise this path, skate and inhabit it in terms of body, space and time. Feel space moving around you as you articulate your lines, intersecting, crossing, glancing, spinning away, grabbing at movements and air, smells and sounds.
5. Choose a pitch on your instrument. Skate your imagined path on this pitch. (You may choose to skate the path in slow-motion.) Every micro-detail of the pitch (tuning, timbre, dynamic, envelope, consistency, colour, texture, weight, feel, pressure, clarity, strength) should correspond absolutely to the experience of skating the path in your head. Pay attention to every minute detail, the micro-cartography of the path you are skating, the tiny shifts in muscle, weight, speed, direction. Carve through air in long, sweeping paths with the sound you produce. Reveal and inhabit new spaces, smooth new lines.

MILKER
Corp. 2004

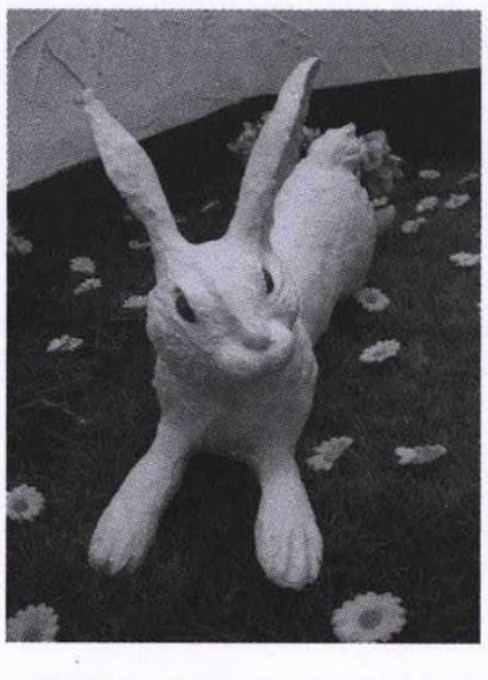
Pictures from upper left, clockwise: "skateboarding" by David Chief; "untitled" by nugunslinger; "skatepark" by Flor Hartigan; "IMG_2150 by rednuht. All used under Creative Commons Attribution Licence 2.0.

Title taken from "Weightless Again" from *Through the Trees* (1998) by The Handsome Family.

Jennifer Walshe; *THIS IS WHY PEOPLE O.D. ON PILLS*. For 1-10 performers on any instruments, including voice. Used by permission of Jennifer Walshe, © 2004.

JENNIFER WALSHE

AND if...



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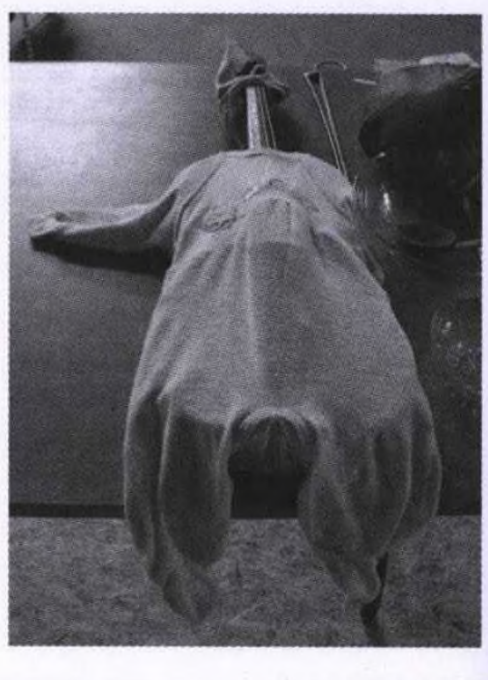

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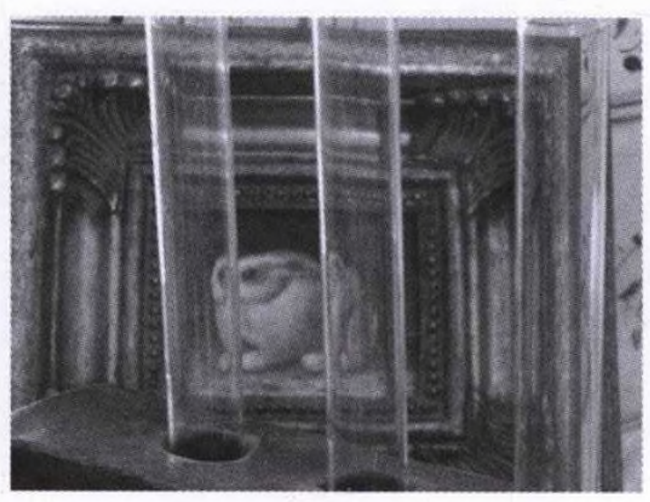

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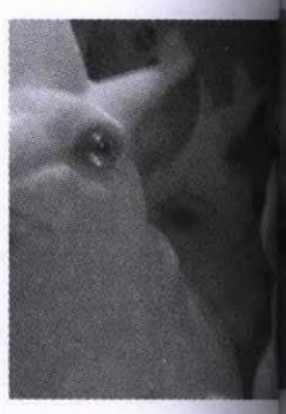

A

Jennifer Walshe; *Tentative for Bed of Soft*. Used by permission of Jennifer Walshe, © 2005.

JENNIFER WALSHE

...THEN

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/

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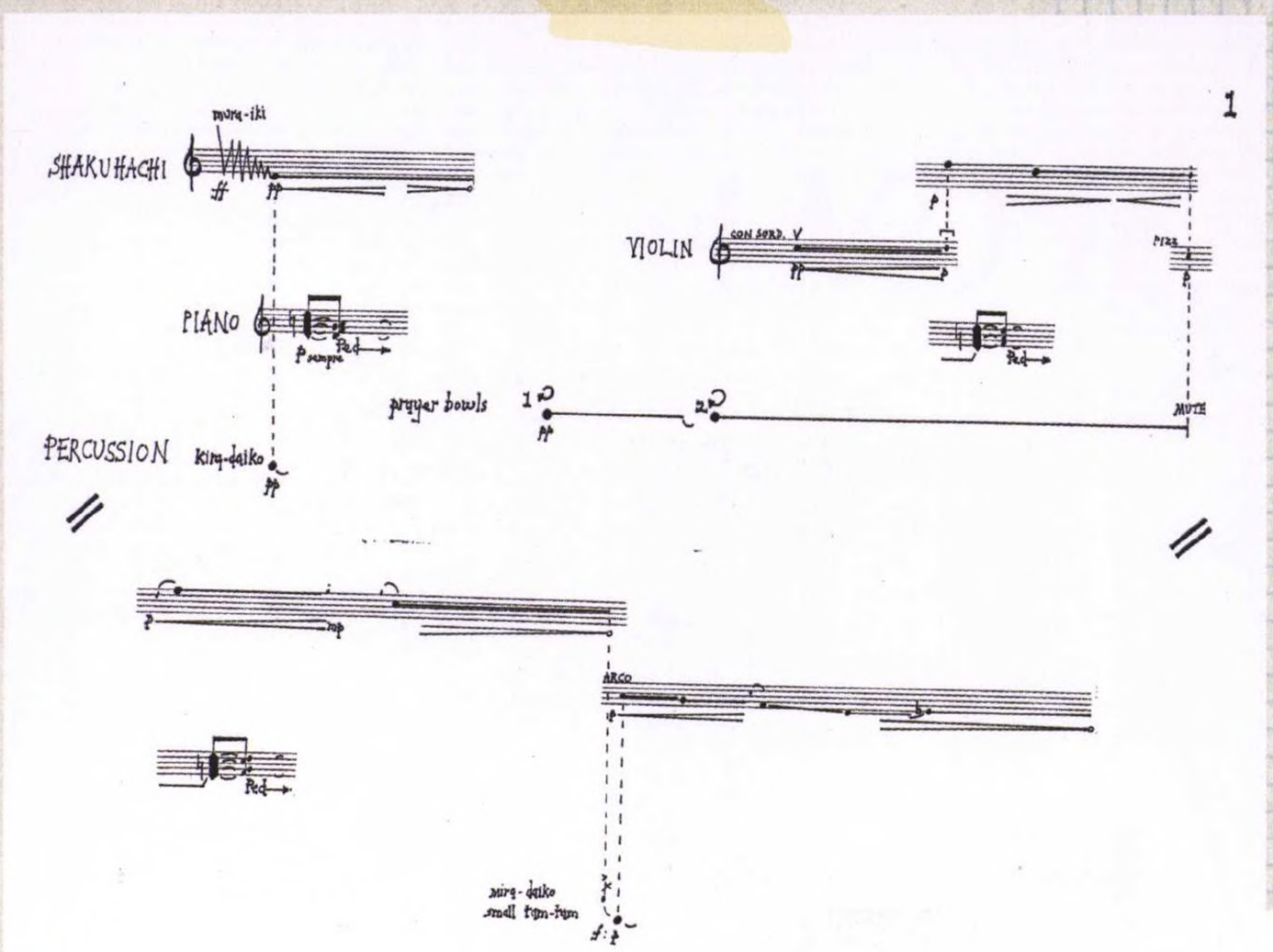
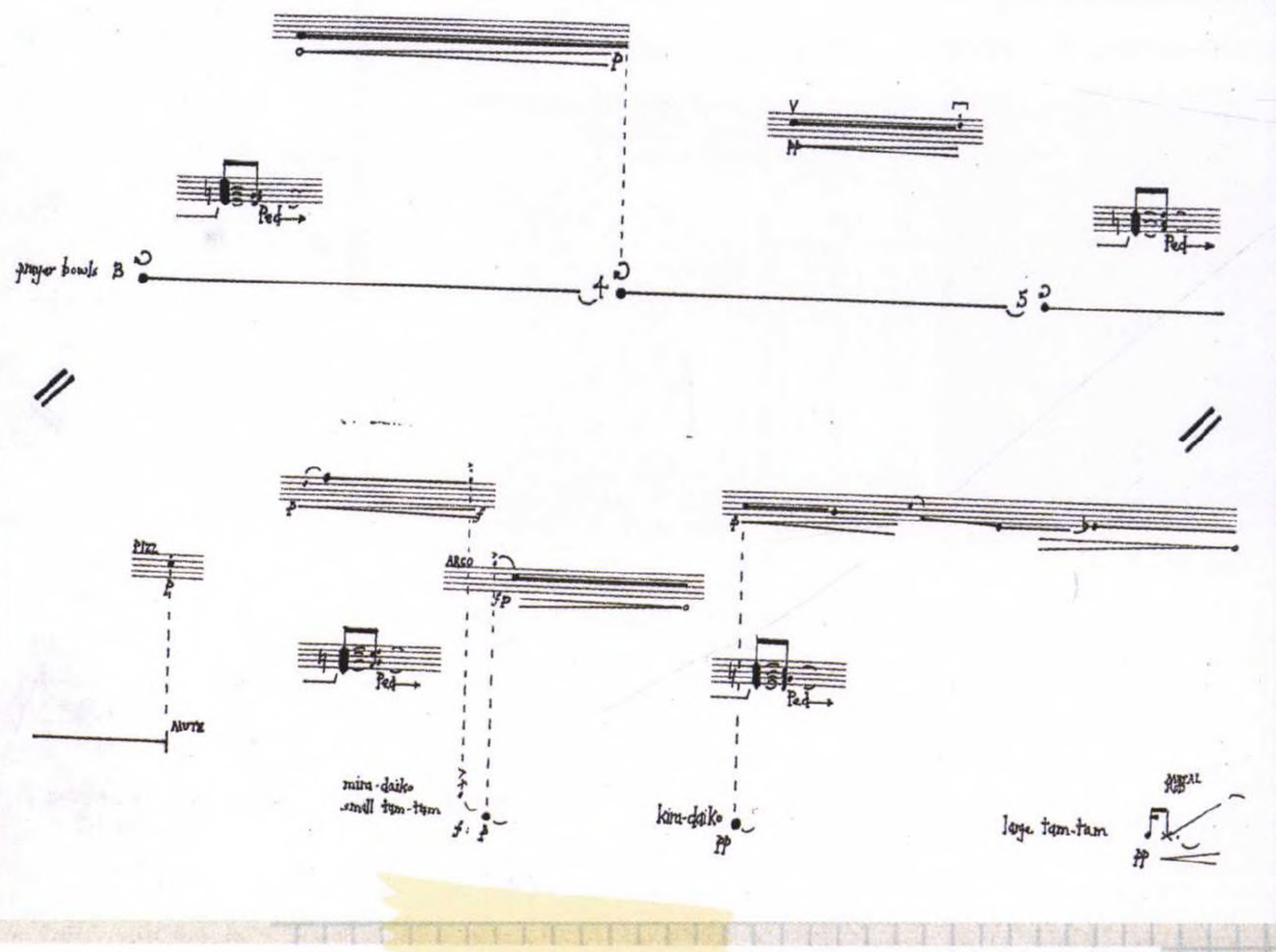
CLIVE WILKINSON

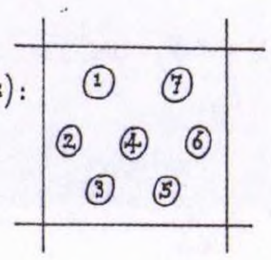


Clive Wilkinson; *Ocean Sea*. For shakuhachi, piano, violin, and percussion.

Used by permission of Clive Wilkinson, © 2001.



JAPANESE PERCUSSION : kira-daiko
mira-daiko
small tam-tam
large tam-tam
bell-tree
kin (prayer bowls):

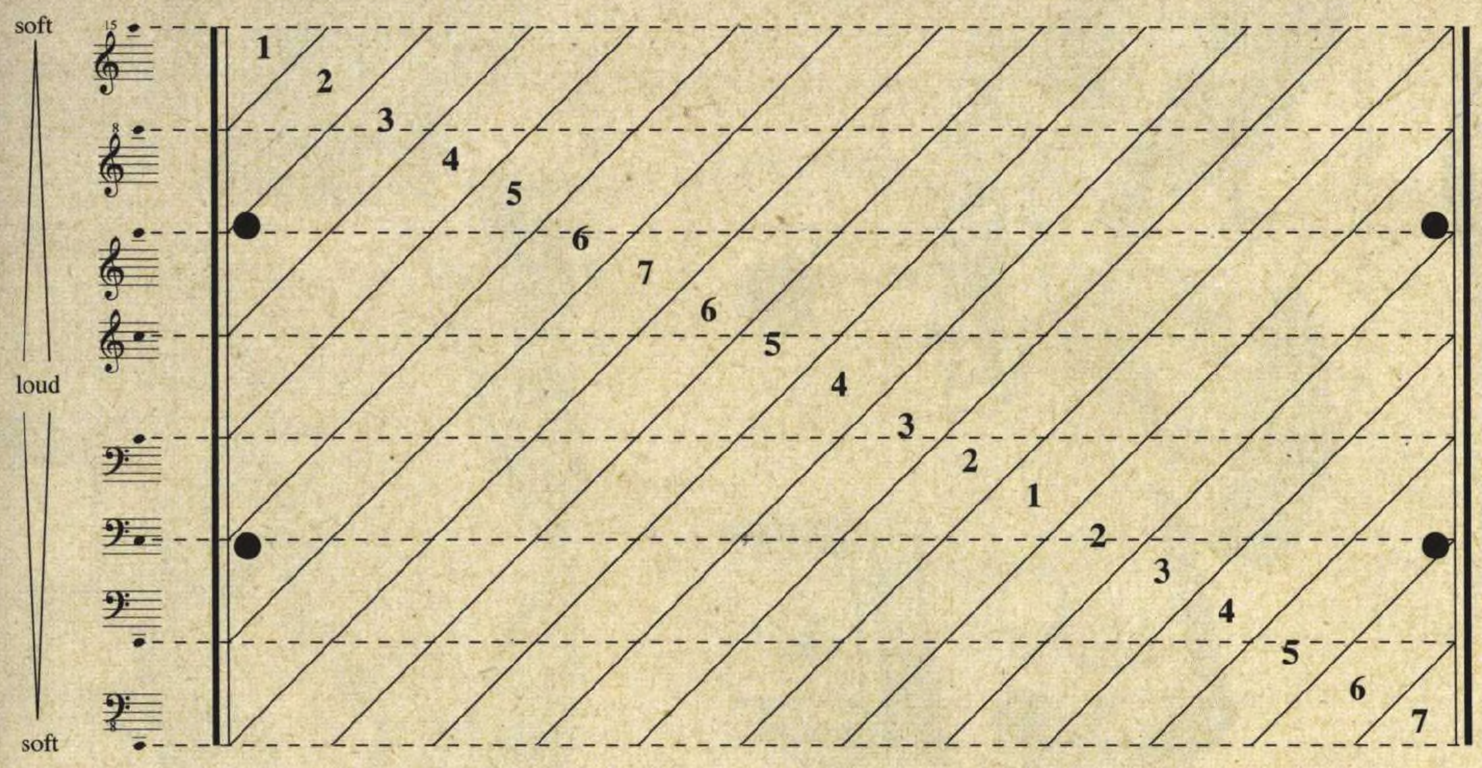


PIANO : dorian cluster, release all notes except those shown as the sound swells

DURATION : c. 4 minutes

4 Ascents for James Tenney

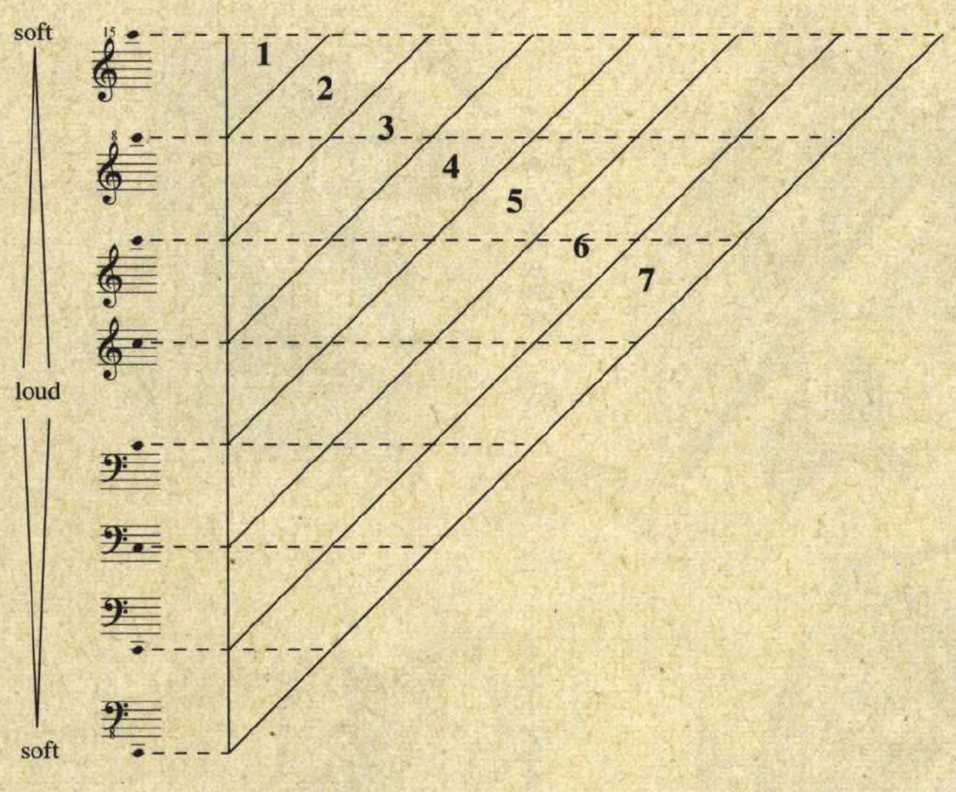
MICHAEL WINTER

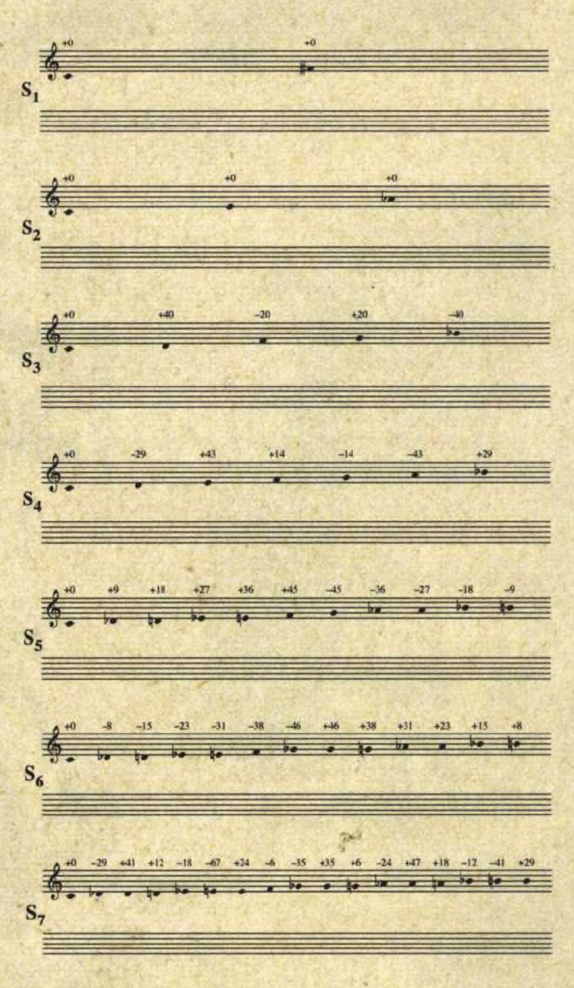


Rise II - IV

page 2

- mbw (2007)





*page 3

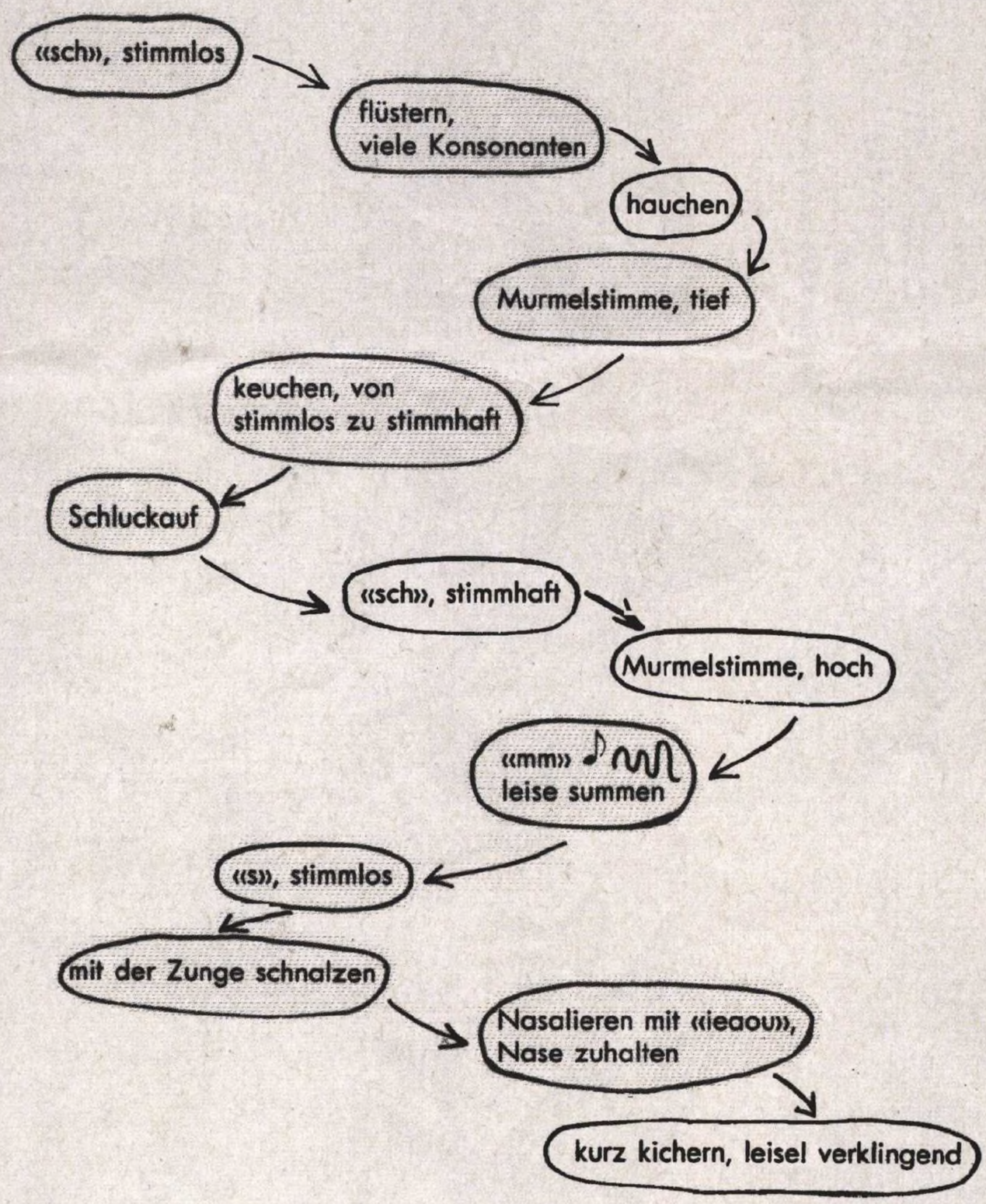
*Example of pitch sets for *Rise III* from *4 Ascents for James Tenney -mbw (2007)*

Michael Winter; *4 Ascents for James Tenney*. For variable instrumentation. Used by permission of Michael Winter, © 2007.

Rise II-IV: As in *Rise I*, the ascending black lines indicate suggested glissandi, which, unlike *Rise I*, are linear pitch glissandi. Any instruments that can perform parts of these glissandi can play them starting and stopping at any point so long as they enter and exit imperceptibly. In between any two given glissandi, performers can play tones of definite pitch from the pitch set corresponding to the number written between the black lines. For example, if the number 3 is written, then tones with pitches from the set S3 may be played. Though these sets, which are infinitely variable, may be defined according to the mathematical instructions in the appendix, the notes written on the first and last page are provided examples that satisfy the mathematical instructions. The tones with definite pitches should last approximately the same length even though they may start and end at any point within the rising black lines. Performers should also enter and exit these tones imperceptibly. The conglomerate timbre of a group of instruments playing a certain pitch set should be distinct from the timbre of the group of instruments playing an adjacent set.

Peak dynamics of any sound are determined based on the verticality of a tone's pitch. It is not necessary to play the entire pitch range suggested by the score. An ensemble may choose to play within any range of three or more octaves and can transpose this range by any amount. If the ensemble does not play the entire range presented in the score, then the dynamics should be scaled so that tones played near the center of the range are loud and get softer as they deviate from the center till; by the outermost parts of the range, tones are primarily soft.

In general, except for the rising effect, the piece should feel relatively static. Tones should be uniformly distributed in time and across the pitch space. Also, the middle section of the piece may be repeated any number of times.



Eile oder Weile:

The rules of the game:
All players start at the same time. They are allowed to remain at a sound stop for as long as they want to before moving on to the next. The numbers indicate the order. (You can decide to have a maximum time.) The players are encouraged to produce sounds as interesting as possible. They stop individually after finishing the last sound stop. The piece is over when the last participant is finished.

Best result:
A continuous and ever changing soundscape.

With the mouth only:
1. *sh*—unvoiced
2. whispering (many consonants)
3. exhale
4. murmuring voice, low
5. panting, first unvoiced, then voiced
6. hiccup
7. *zh*—voiced
8. murmuring voice, high
9. *mm* (quietly humming)
10. *s*—unvoiced
11. clucking tongue
12. nasalize (hold your nose): *ieaou*
13. brief tittering (quietly!), fading out

In addition to the written rules of the game I told the participants to create a very rich voice of their own and at the same time to keep an eye/ear on the polyphony. I encouraged them to try to use the given sound resources to communicate musically with other participants.

Even though the characteristics of the individual realizations were varied, not a single one appeared pale or unimaginative. Every participant's realization of the instructions had its very own interesting and exciting path from sound to sound and was accompanied by a rich and interactively inspired play of ideas. The actual time was measured with a stopwatch, and made the participants consider the phenomenon of perceived time.

After these thoughts about a musical experience of time I gave a short analysis of the piece *Eile oder weile* in order to demonstrate to the participating teachers what criteria are useful when composing with such unusual sound material. In this way I also intended to answer possible questions curious students (hopefully) might have in future classes.

How did I proceed when I composed this piece of music? First I wrote down a list of

sounds that can be produced vocally. All of these sounds had to have met one specific characteristic: every sound allows for a variety of interpretations. Then I tried to put the material in an artistically meaningful order.

I arranged them into three groups. Each group has a fricative as a starting point (point of departure) (*sh*—unvoiced, *zh*—voiced, *s*-unvoiced) and develops from there in different directions.

The first group is comprised of stops 1-6. In this group the exhalation sound should become prevalent. The hiccup which ends this sequence should be a logical consequence of steps 1-5. (In step three the exhalation becomes stronger, becomes murmur and finally panting, which should move from unvoiced to voiced. The sequence ends with the hiccup.) The gradual transition from unvoiced to voiced can be seen across the entire piece. Additionally, I tried to put the stops in an order that allows for smooth transitions. Analogous to the aesthetic principles of Classical-Romantic modulation, I intended to make it possible to move easily and almost unaware from one sound stop to the next.

The second group, which contains stops 7-9, should be, as a result of the movement from unvoiced to voiced sounds, in the first group, dominated by the voiced. The sounds move from fricatives to a "voice" sound to a "singing" sound. Because spoken language and singing are used as aesthetic stylistic devices, the participants should neither really speak nor actually sing. The idea is to produce sounds which only remind one of the real sounds and in doing so establish a distance that makes it possible to put into question and objectify.

The third group and the last four stops represent a kind of "musique concrete" where everyday sound gestures are removed from their original context and relocated in an artistic context. Thus they lose their familiar usage and are stylized. Their function and meaning is turned around and they are set in surreal contrast against reality.

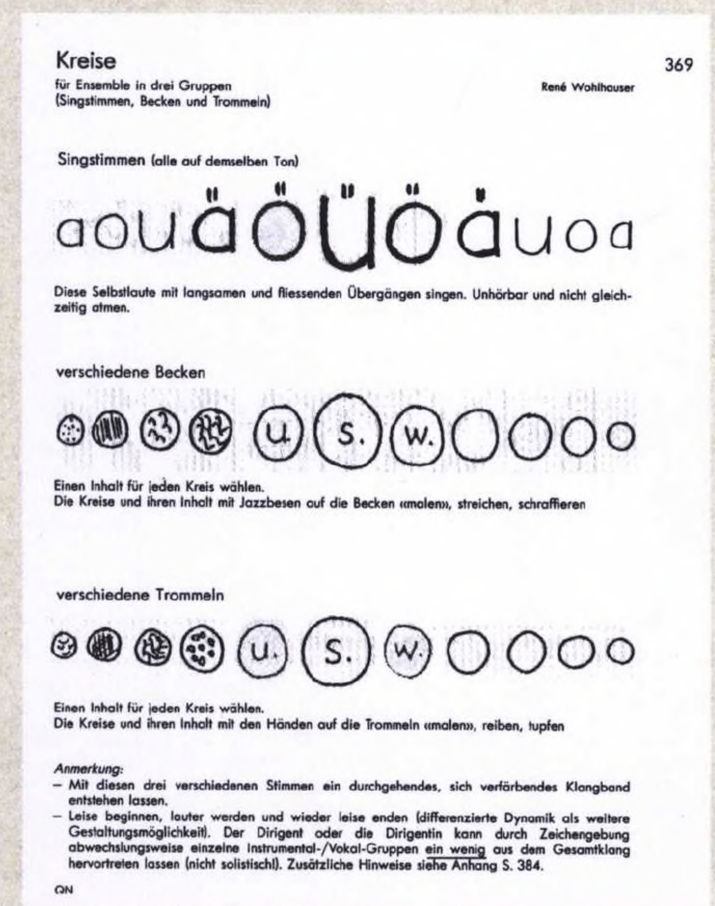
After these analytical thoughts I talked about additional information I give in the appendix about how to play my three *Spielstücke*.

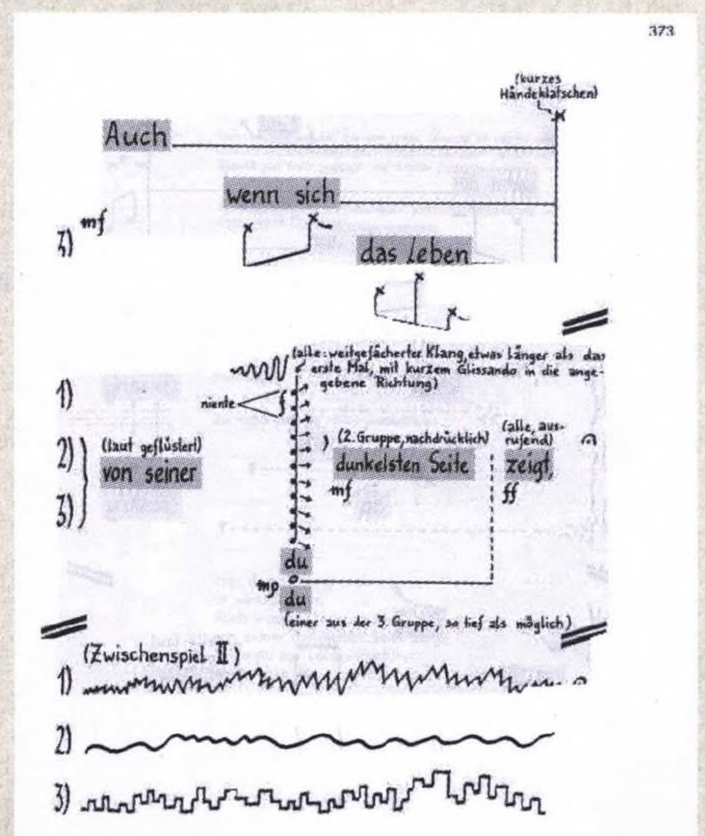
Using the example *sh* unvoiced, I demonstrated that every tone should have an extensive repertoire of different ways to express it: high—low—light—dark—front of mouth/near teeth—back in the throat—loud—quiet—rising—falling—(regular—irregular)—big changes in timbre—constant timbre—...

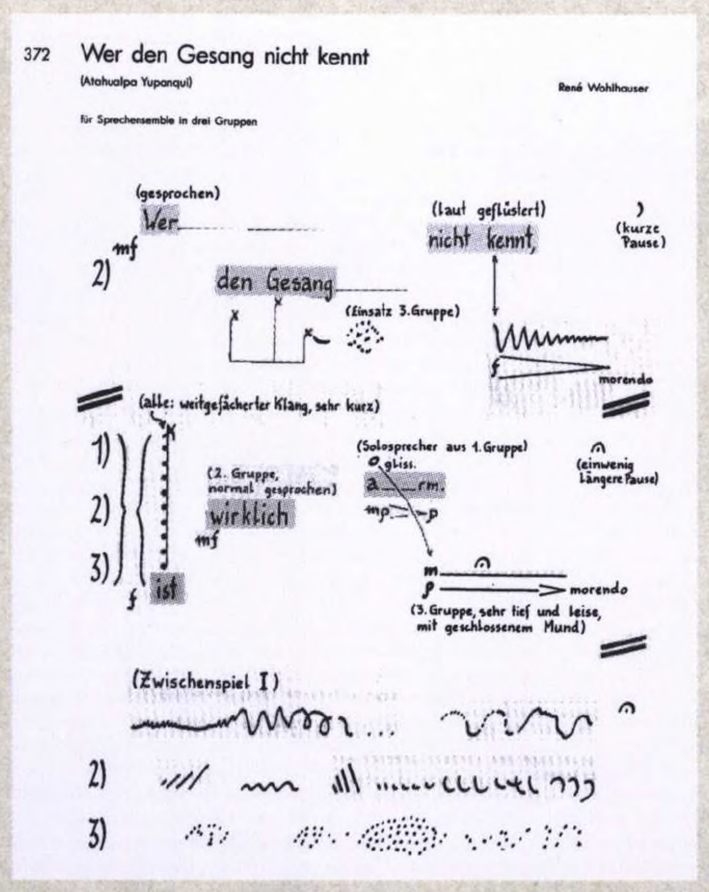
The same applies for the way participants deal individually with the transitions from one sound to the other: overlapping—blurred borders—abrupt change (for example: every one moves to step 8 when given a sign)—...

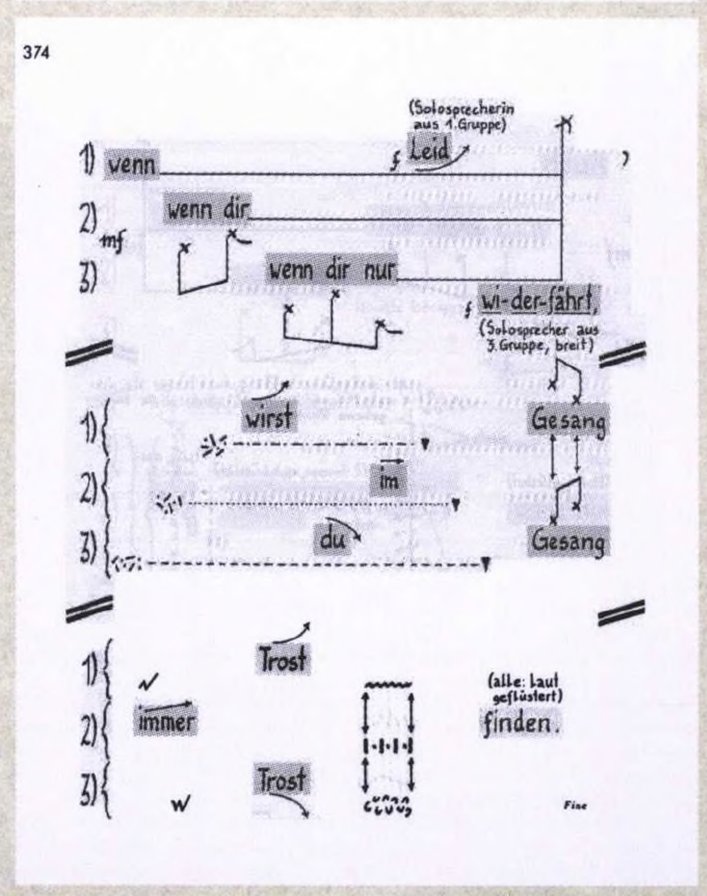
The polyphonic character of the structure of *Eile oder weile* can be further accented by a loop rotation of the sound stops. This would result in moments of recalling and could make the polyphony even more comprehensible (1-2, 1-2-3, 2-3-4, and so forth; the recurring sounds take on thematic character (despite changes in timbre) and further structure the polyphonic arrangement).

To sum up, I can say that the piece *Eile oder weile* can be realized with very little effort (no preparation or tools needed). On the other hand it is still possible to work with it intensively and to explore different sounds.

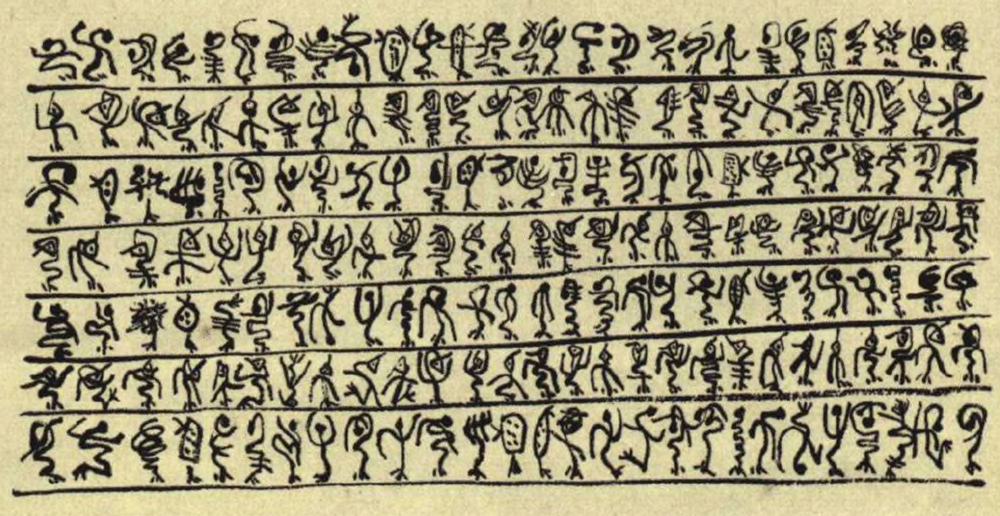


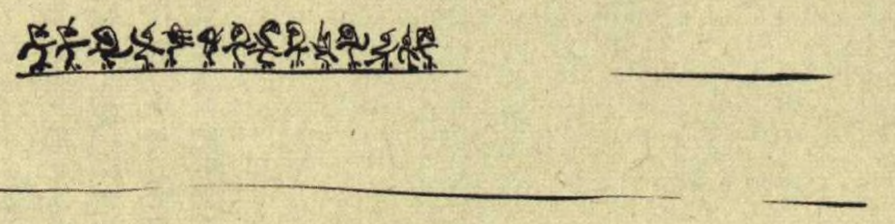


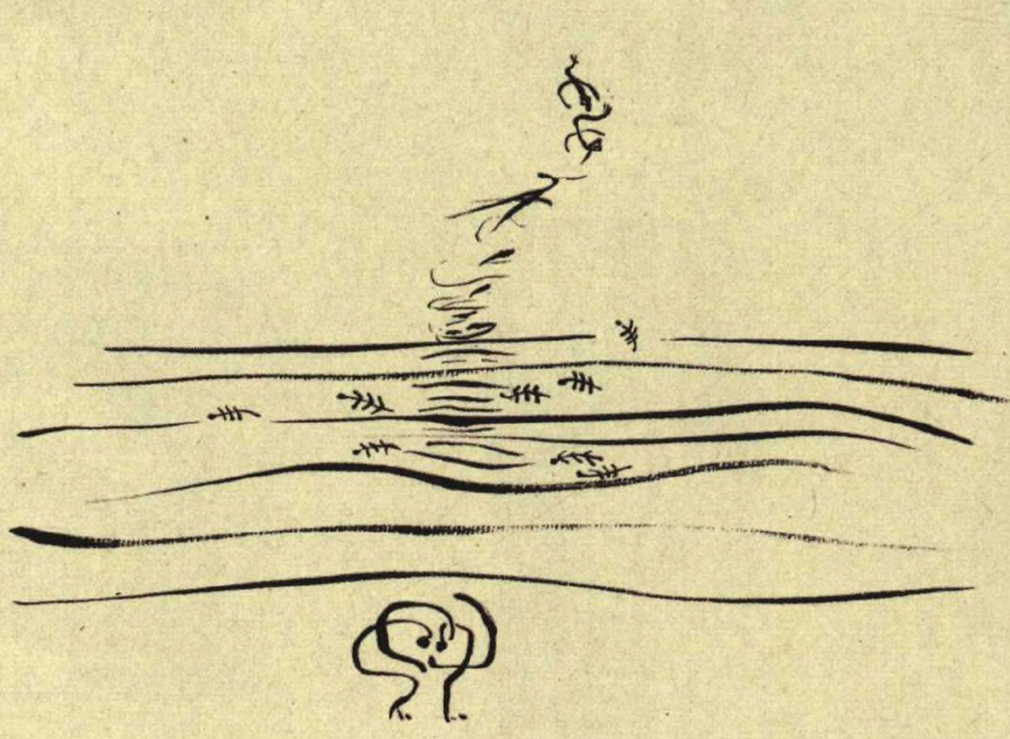




René Wohlhauser; *Eile oder weile* (*Metamorphosis*). For voices. Used by permission of René Wohlhauser, © 1984.



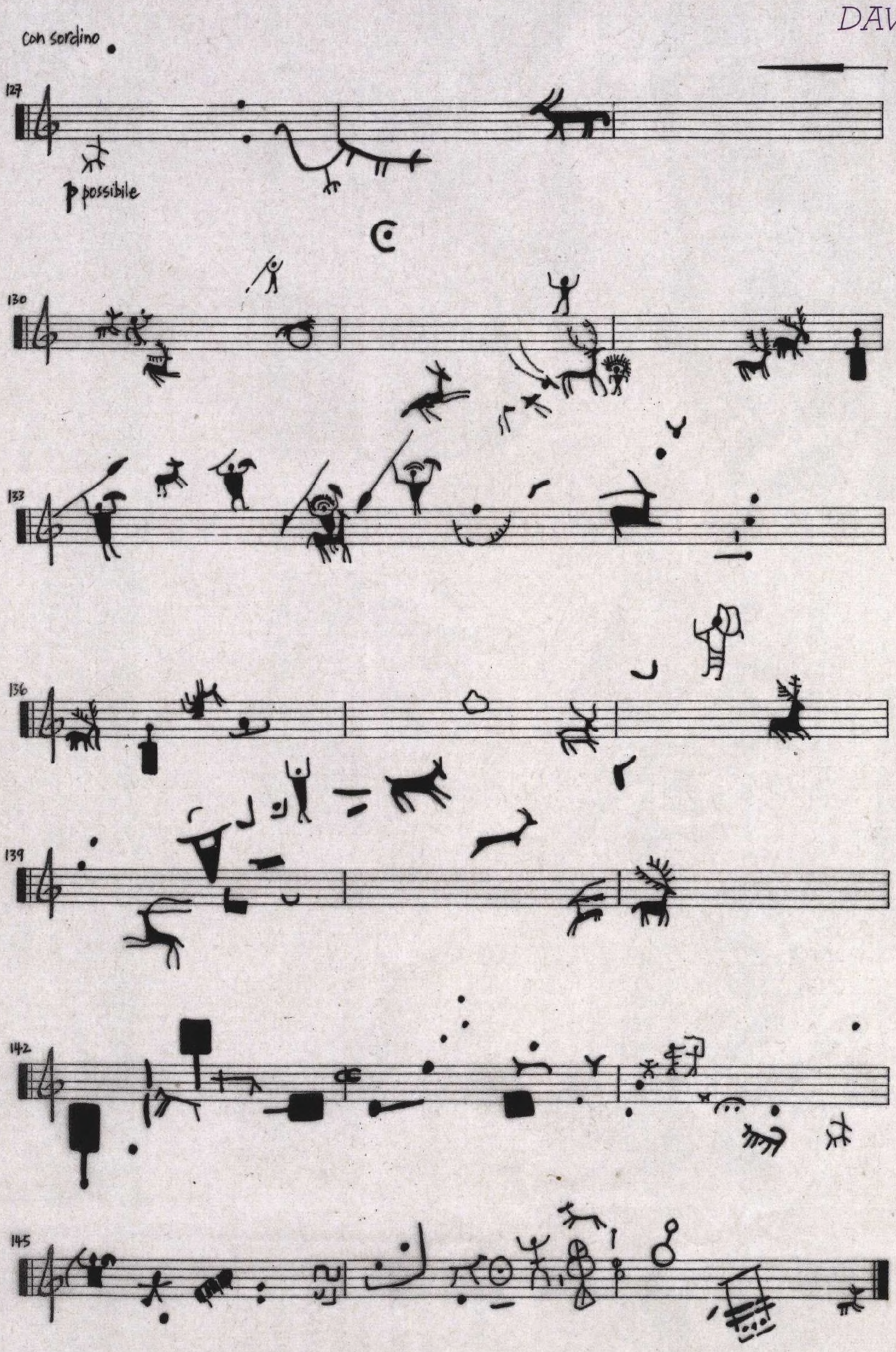




Ge-Suk Yeo; *Bird and Human*. For small ensemble of a singer, flute, and percussion.

Used by permission of Ge-Suk Yeo, © 2000-2007.

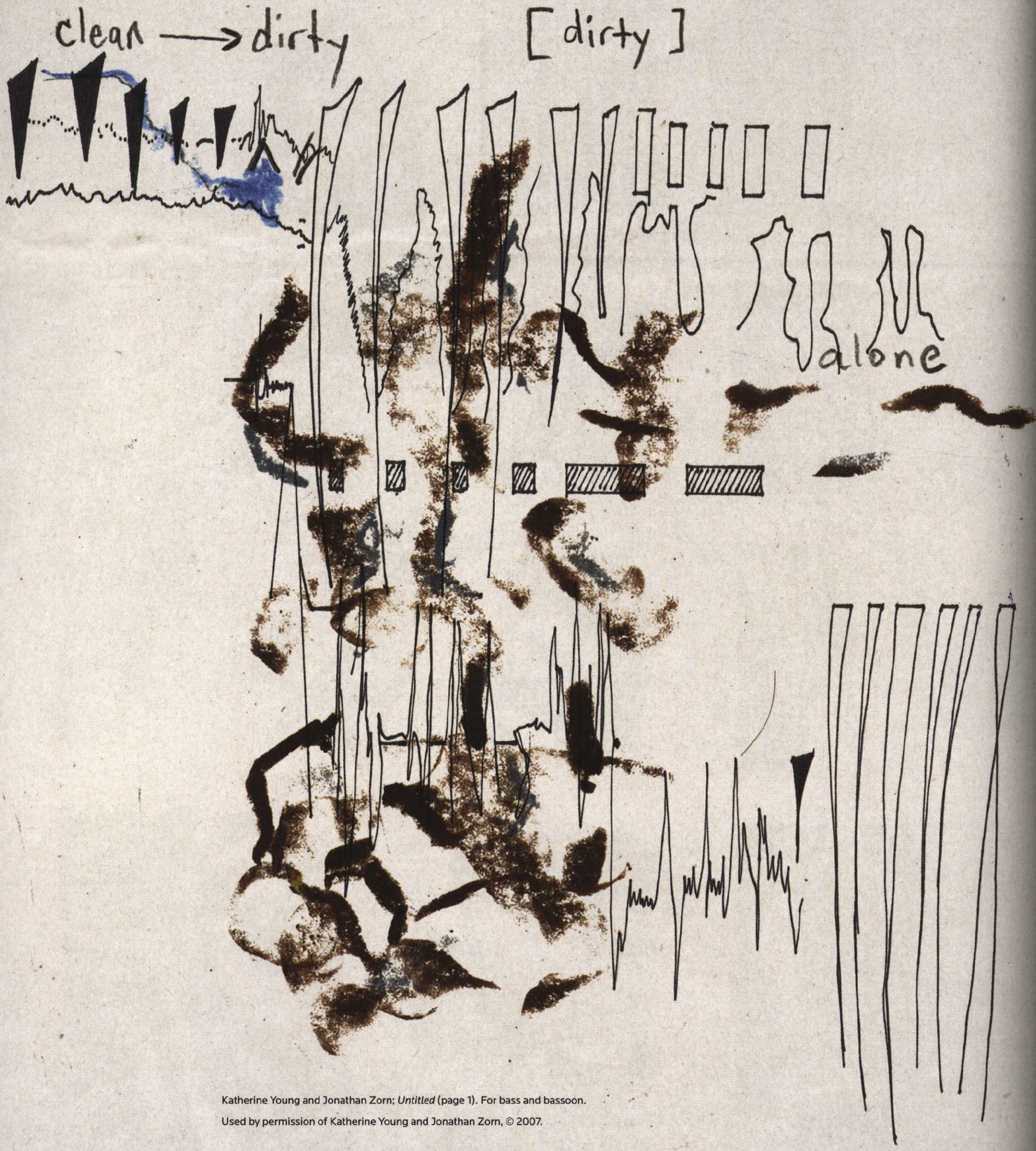
Bird and Human is part of the "Sounding Pictures" series in which I express ideas for sound and performance. For this purpose I work with sketches, a kind of "graphical notation" (original size: 21.0 cm x 29.7 cm, painted with Asian brush and ink, digitalized, and printed).



David Young; *Val Camonica: animali*. For solo violin. Used by permission of David Young, © 2002.

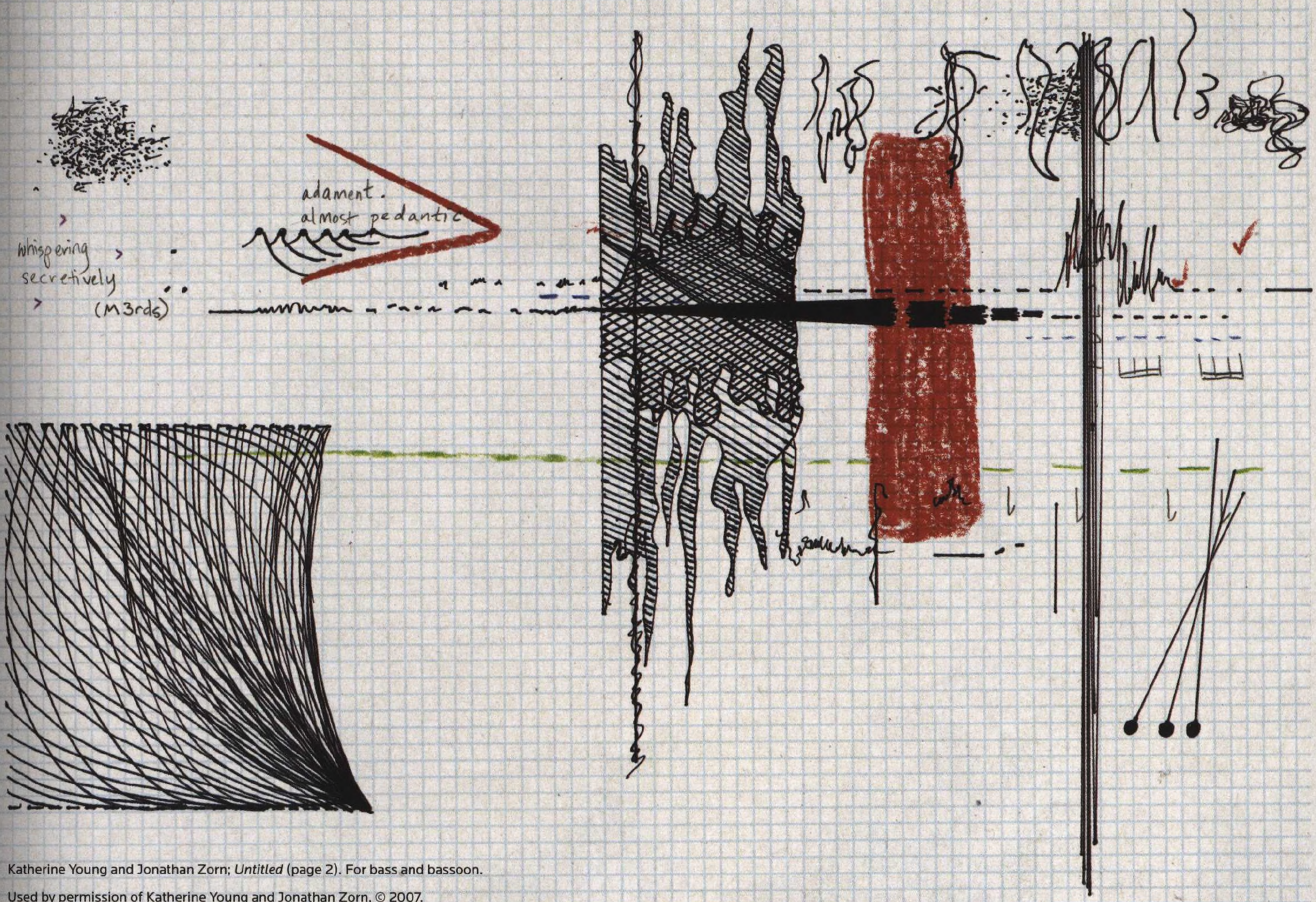
Val Camonica: animali was written for Yasutaka Hemmi.

Quartertones are used throughout, indicated by a sharp with only one vertical line for a quarter-tone sharp, and three vertical lines for three-quarter-tones sharp. Play grace notes as fast as possible, anticipating the following beat. Vibrato is to be used sparingly. Pont refers to bowing on or near the bridge, allowing harmonics to ring out. Molto pont should produce a more distorted tone with less pitch. Tasto refers to bowing on or near the fingerboard, producing a more muted tone. Occasionally, and entirely on page seven, graphic notation appears, inspired by the Bronze Age rock carvings in northern Italy's Camonica Valley, as transcribed by archaeologist Emmanuel Anati. The graphics should be played according to their relative and approximate position within the bars. While by its very nature this notation has many freedoms, every attempt should be made to realize the graphics' contours and shapes as carefully as possible.



Katherine Young and Jonathan Zorn; *Untitled* (page 1). For bass and bassoon.

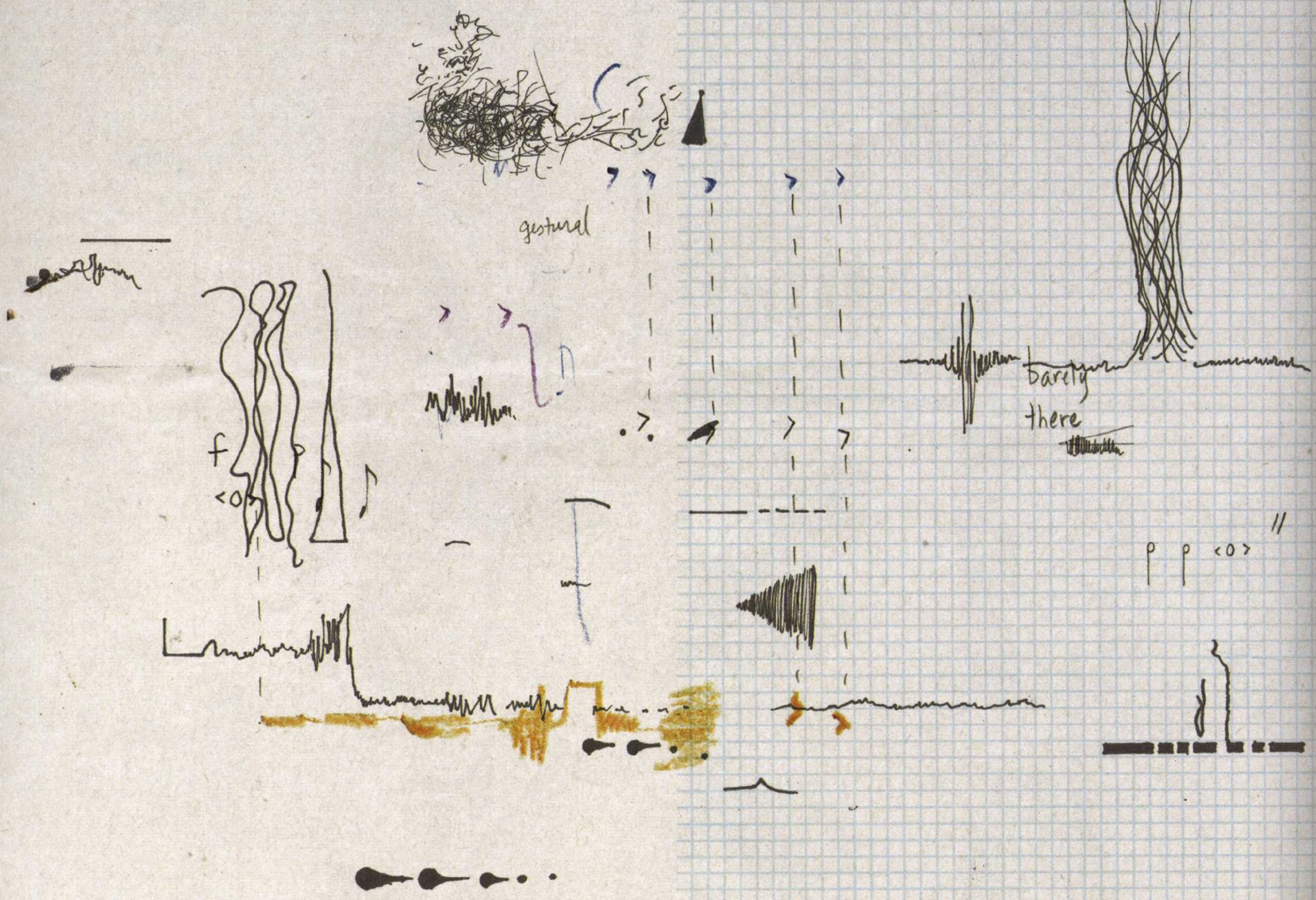
Used by permission of Katherine Young and Jonathan Zorn, © 2007.



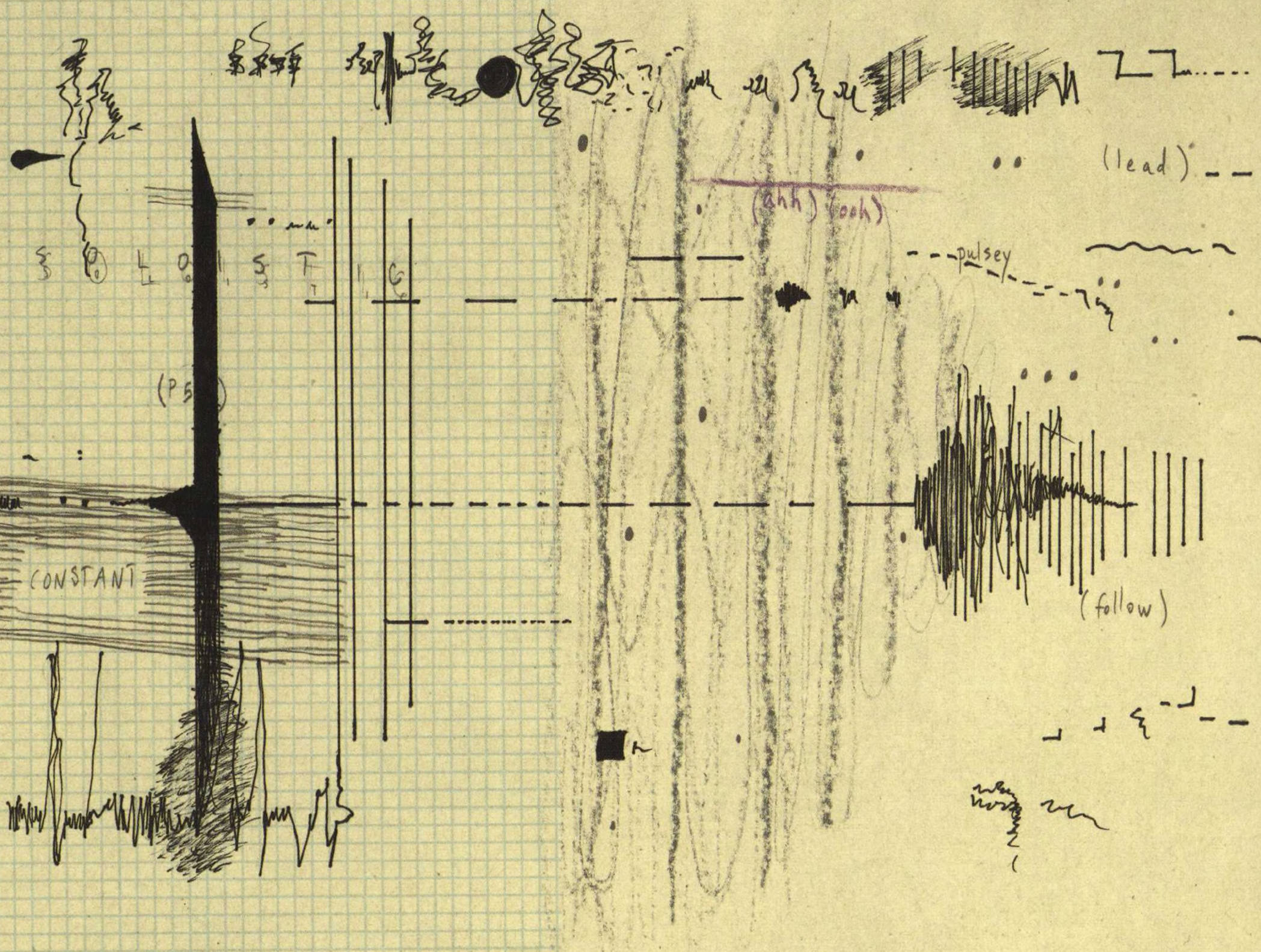
Katherine Young and Jonathan Zorn; *Untitled* (page 2). For bass and bassoon.

Used by permission of Katherine Young and Jonathan Zorn, © 2007.

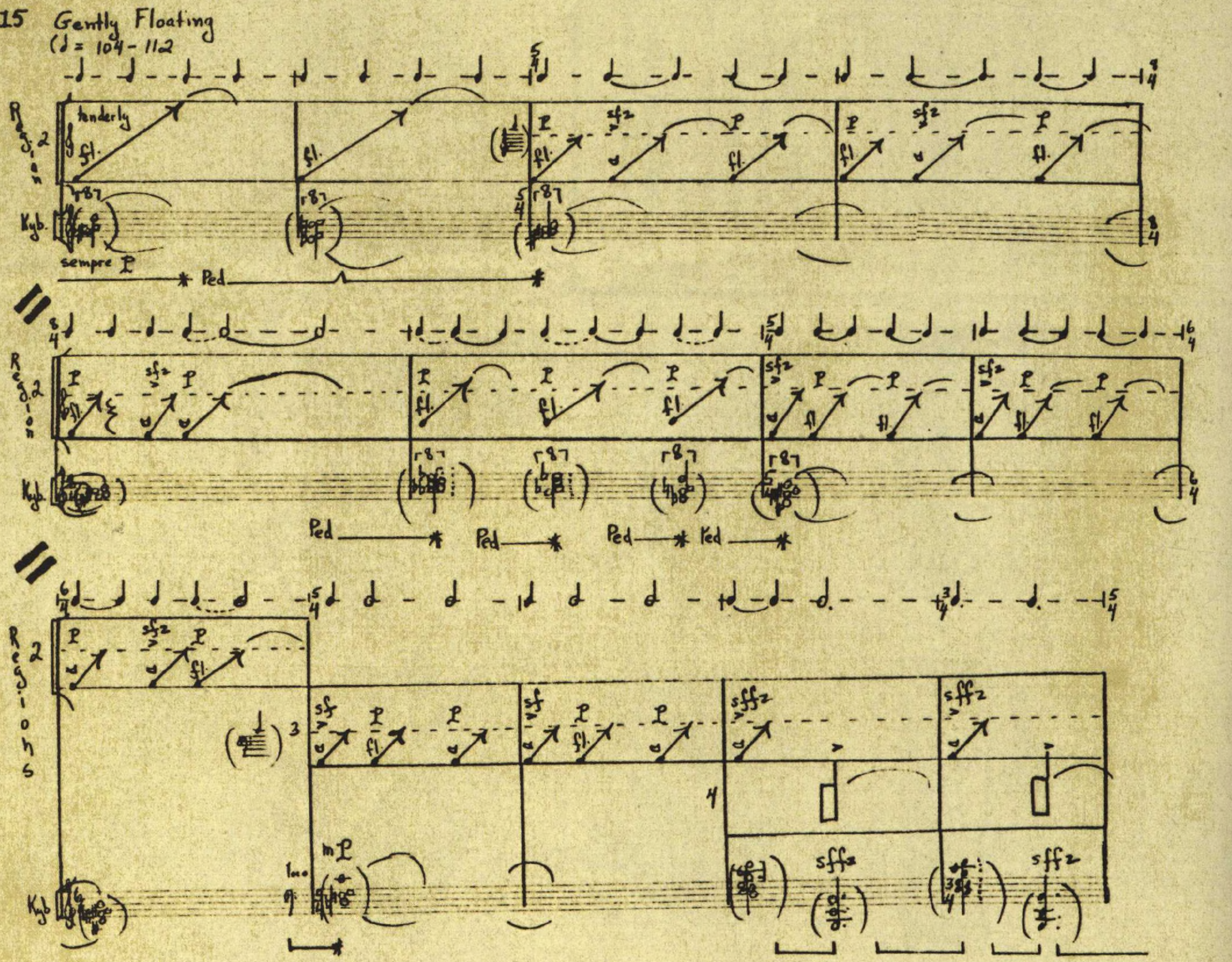
KATHERINE YOUNG AND JONATHAN ZORN



Katherine Young and Jonathan Zorn; *Untitled* (page 3). For bass and bassoon. Used by permission of Katherine Young and Jonathan Zorn, © 2007.



Katherine Young and Jonathan Zorn; *Untitled* (page 4). For bass and bassoon. Used by permission of Katherine Young and Jonathan Zorn, © 2007.



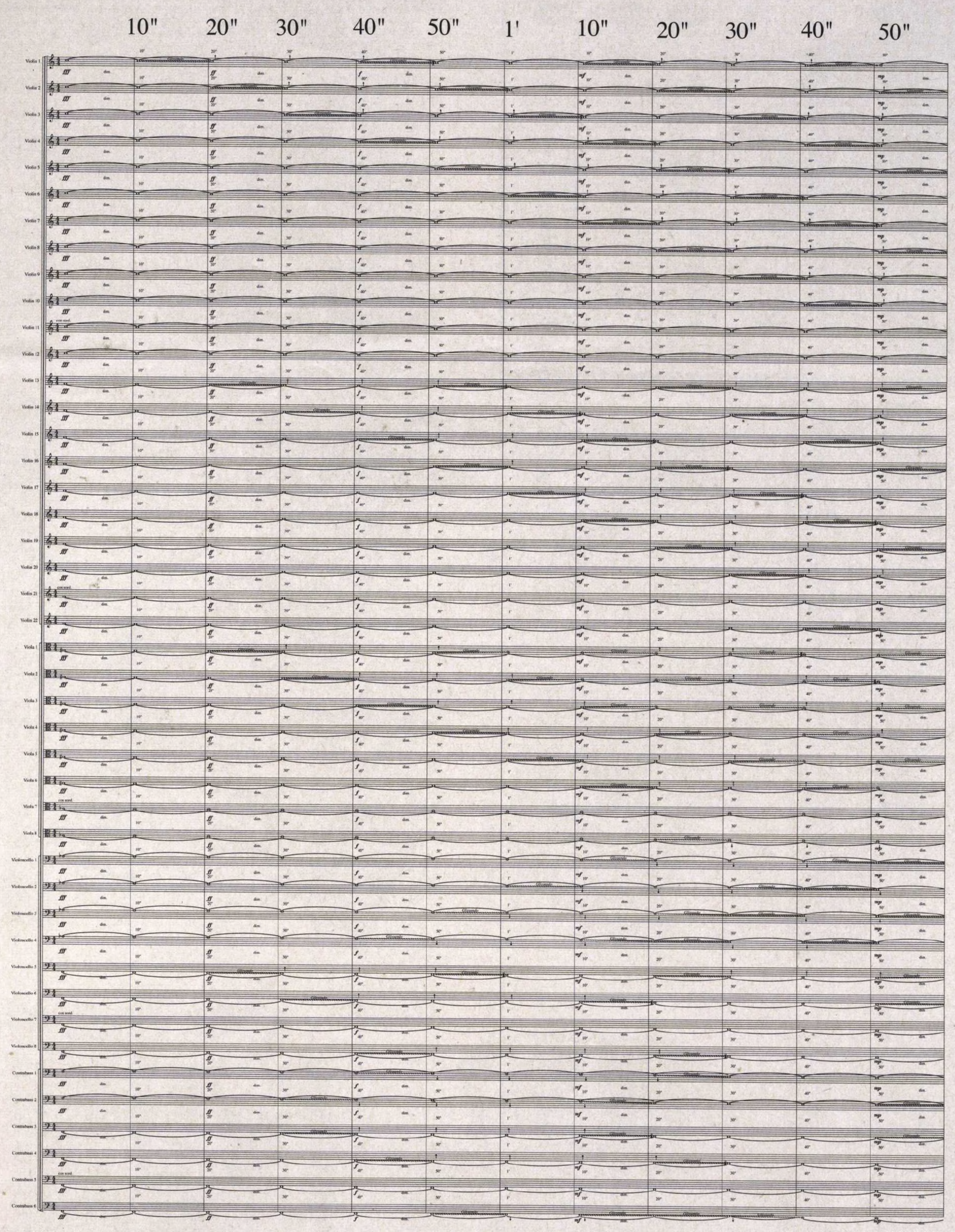
Judith Lang Zaimont; *STONE*. For piano solo, keyboard, and strings. Used by permission of Judith Lang Zaimont, © 1981.

STONE incorporates extensive passages for the piano's interior (strings), as well as for playing on the keyboard. The score has many novel aspects, including a notation I devised for the great staff: separated into various regions, and including symbols for when the player should stand and should sit.

FIGURE 1

Edson Zampronha; *EVOLON*. For flute, B^{b} clarinet, violoncello, double bass, and two percussionists. Used by permission of Edson Zampronha, © 1999.

PETER ZOMBOLA

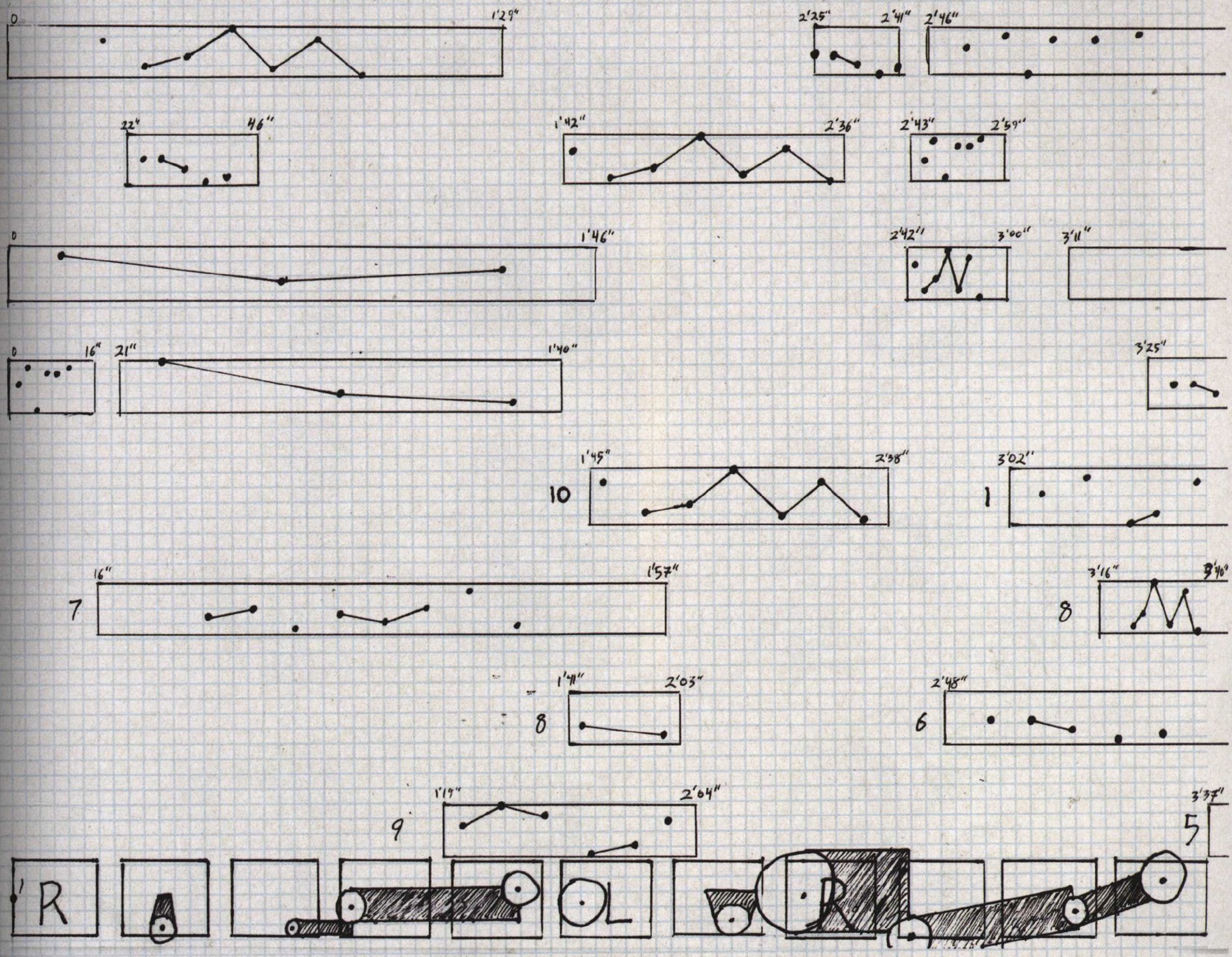


Peter Zombola; *Inalterabilis I/a*. For 22 violins, 8 violas, 8 violoncellos, and 6 contrabass.

Used by permission of Peter Zombola.

Inalterabilis I/a was written for 44 string instruments: 22 violins, 8 violas, 8 violoncellos, 6 contrabass; it's 6 minutes and 10 seconds. The main chord is an F-minor; after the 10th second this chord falls apart step by step...

JONATHAN ZORN

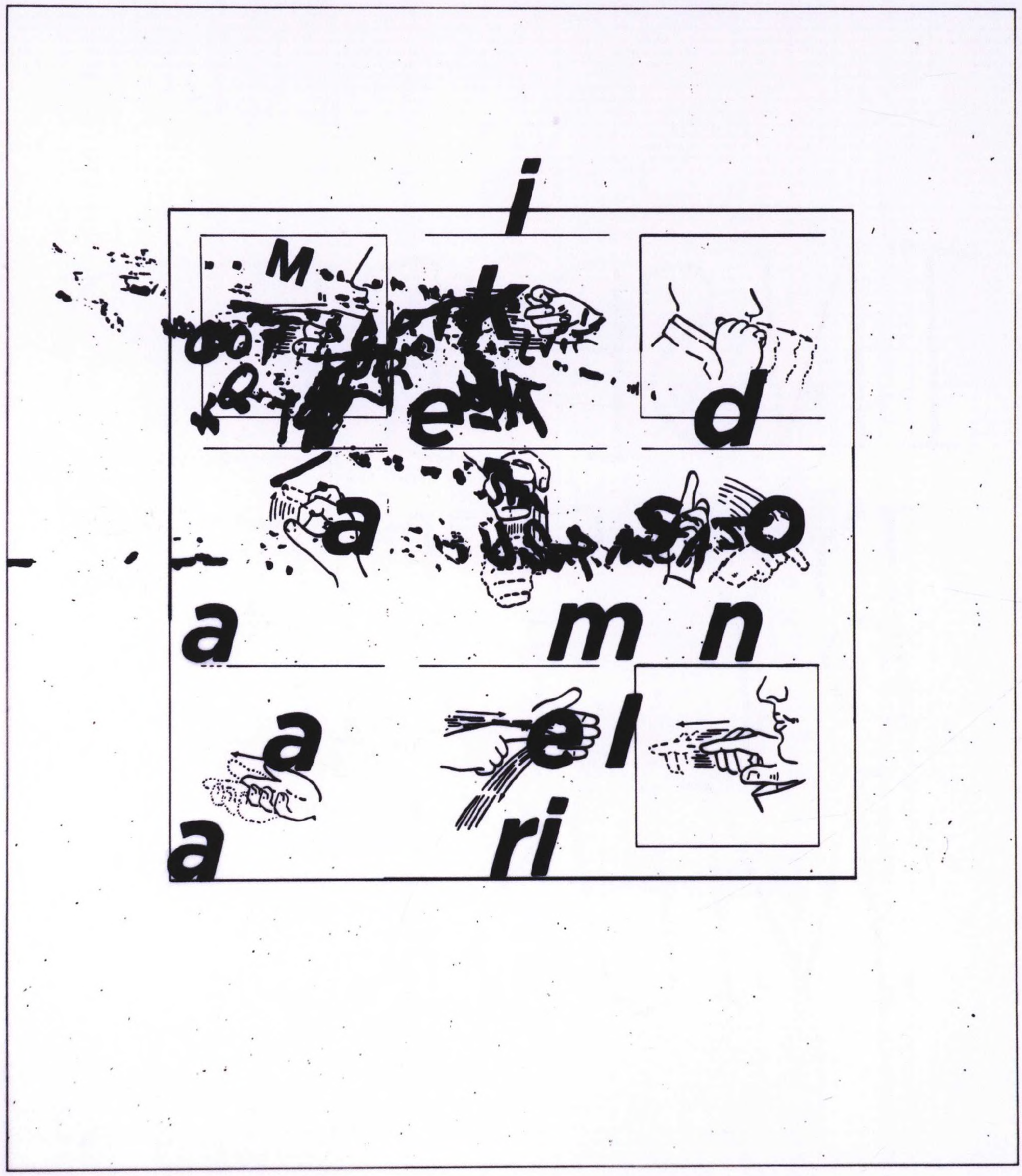


Jonathan Zorn; *14'41"*. For solo performer using 8 sound sources, 1 gestural controller, and 16 potentiometers. Used by permission of Jonathan Zorn, © 2007.

14'41" requires a laptop, mixing bowl, bubble wrap, sheet metal, feedback with rice on vibrating metal.

14'41" is an electro-acoustic composition for solo performer using 8 sound sources, one gestural controller (reading x,y,z coordinates), and 16 potentiometers. In the piece the four electronic sound sources interact with the four acoustic sound sources, creating a tripartite blending of acoustic, electro-acoustic, and purely electronic sounds. The score indicates durations, and modulation/gestural control of each of the 8 voices, often creating situations in which the number of actions indicated outnumber the hands and feet of the performer.

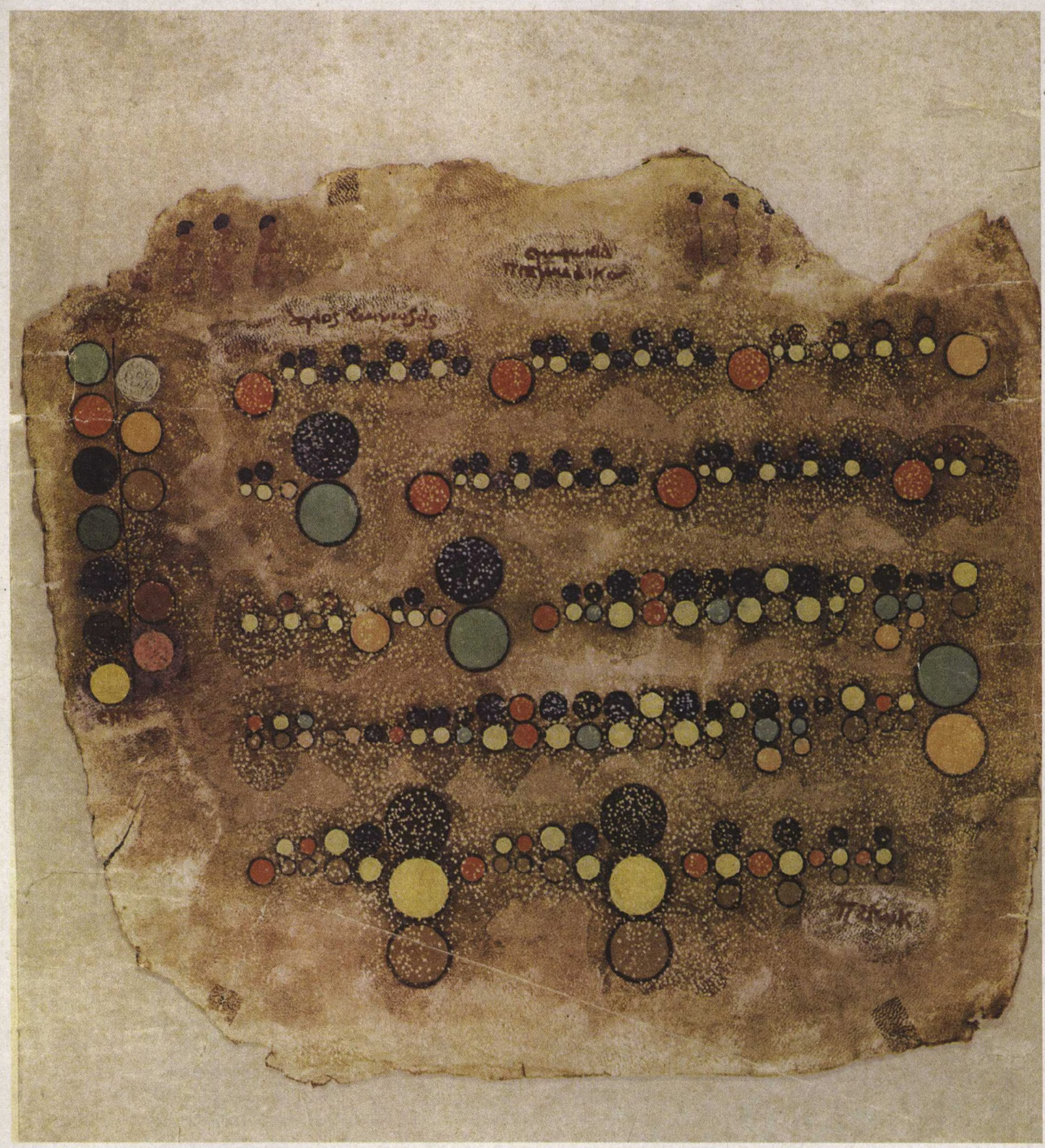
INSPIRED BY THE MUSIC



Richard Carlyon; *missaid #2*. Used by permission of Richard Carlyon, © 2004.

Richard Carlyon; *missaid #3*. Used by permission of Richard Carlyon, © 2004.

missaid #2 and **missaid #3** are part of a series of drawings concerned with visual expression related to language, sound, and movement. The works were constructed from a vocabulary developed from images found in print, including diagrams of sign language systems, various alphabets, comic book bubbles, sections of handwritten letters, and musical scores. Using a chance system, the collected fragments were transferred to clear acetate, manipulated, and processed through a Xerox machine. The resulting image was then handdrawn with pen and ink on vellum. The appearance of spontaneity and immediacy belie the rigorous and complex process with which these often-playful works were made.



This is believed to be an ancient illustrated musical score, part of a set of six parchments from Egypt that date from the 5th to 7th centuries C.E.

The parchments appear to depict musical notation in which the colors of the circles indicate pitch and the sizes indicate duration.

Philip Neuman and Gayle Neuman

This is the first of a set of six parchments from Egypt containing colored circles that date from the 5th to 7th centuries C.E. They were owned previously by H. Aram Gulezyan and were sold at auction in New York in 1952. A number of writers have commented on them, notably Hans Hickmann in his article "Le problème de la notation musicale dans l'Égypte ancienne" from his Musicologie Pharaonique, published in *Collection d'études musicologique*, vol. 34, 1956. A color reproduction was printed with a short article in *Vogue* magazine on September 1, 1952.

The parchments appear to depict musical notation in which the colors of the circles indicate pitch and the sizes indicate duration. In the upper left corner of Parchment #1, twelve differently colored circles are arranged in two vertical lines, with seven on the left and five on the right. This configuration is labeled "key" above and "foundation" below in Coptic. Next are five horizontal lines of circles of varying colors and sizes, above which are written "symphonia pneumadikos" (spiritual harmony) and "hagios hymnodos" (holy hymnsinger). Above the opening circle of the first horizontal line "beginning" is written in Coptic and in the lower right corner at the end of the fifth line "end" is written in the same language. There is a large circle labeled "time" at the top of Parchment #5 (not shown) containing four smaller circles that may indicate relative note lengths.

It was suggested by E. Werner and has been often repeated that this document represents Ptolemy's *Harmony of the Spheres* in musical terms, the twelve colored circles representing the signs of the zodiac. This belief, along with the view of it being a purely musical manuscript, awaits further proof.

It is tempting to assign a chromatic scale to the succession of colors in the "key," given the diagram's resemblance to the modern keyboard. It may be impossible to know what kind of scale might have been intended, but a scale providing the necessary semitones for all the diatonic modes within an octave is not completely out of the question since diatonic modal systems were known in Ancient Egypt, Greece, and Mesopotamia (see M. L. West's article "The Babylonian Musical Notation and the Hurrian Melodic Texts" in *Music and Letters*, vol. 75).

In addition to single circles, stacks of two and three circles are found in the five horizontal lines. They might indicate a rhythmic link of some kind or a form of harmonic notation, examples of which have been found in several ancient Greek and Babylonian musical documents.

The Neumans perform and record music from ancient sources (*Music of the Ancient Greeks* and *Music of the Ancient Sumerians, Egyptians and Greeks* on the Pandourion label), build replicas of period instruments, and teach music history at Marylhurst University.

For more information see page 063.

Live Transmission 1:
Movement of the Hands by Gene Carl, Performing with megaphone his work *Gray Matter* / Kentla International Drawing Space / Red Hook, Brooklyn, New York. November 6, 1998. Morgan O'Hara

Live Transmission 3:
Movement of the Hands of the Downtown Ensemble performing *Circle* by Philip Corner Greenwich Music House / New York City / May 23, 1995.

Live Transmission 2:
Movement of the Hands Dennis Russell Davies conducting the American Composer's Orchestra in Lou Harrison's *Symphony in G* Finale: Vigoroso, Poco Presto / New York City. December 7, 1992 / O'Hara.

LIVE TRANSMISSION 2: movement of the hands of DENNIS RUSSELL DAVIES conducting the AMERICAN COMPOSERS' ORCHESTRA in LOU HARRISON'S "Symphony in G" finale: vigoroso, poco presto / new york city. dec. 7, 1992 / ohara

ARTIST BIOS

Victor Adan →*012* was born in Mexico City in 1973. His youthful interest in computers and passion for music inspired him to combine composition, sound, and computer programming in his artistic endeavors from the very beginning of his career as a composer in the late 1980s. Upon completing his undergraduate musical studies at the Universidad Nacional Autónoma de México, Adan decided to focus on the scientifically innovative side of his musical interests, and as a result, in 2005 he earned an MS from MIT Adan is currently pursuing a DMA in Composition at Columbia University in New York City.

Beth Anderson →*014* is a composer of new romantic music, text-sound works, and music theater events. Anderson's feature recordings include *Albany* (QUILT MUSIC, 2004), *New World* (SWALES & ANGELS, 2004), *Pogus* (PEACHY KEEN-O, 2003); her work can also be found on several compilations. Anderson's publishers include Joshua Corp./EMI, Recital Music in England, and Antes/Bella Musica in Germany.

Kerry John Andrews →*015* MA is a visiting lecturer in Art and Design at the University of Hertfordshire, UK. He is a practicing fine artist and composer and has exhibited and performed his works continuously since 1983 in Britain, Europe, and the US. Andrews is a director of Persistent Objects Ltd. and is a co-founder and designer of the Digital Art Museum (DAM). In 1996 he founded the Forum London Composers Group. As part of the Forum initiatives he founded the All Ears Contemporary Music Festival in London in 2004.

Steve Antosca →*016* has a Master's degree in Computer Music Composition from the Peabody Conservatory of Johns Hopkins University. He is director and composer member of the Contemporary Music Forum, ensemble in residence at the Corcoran Gallery of Art, Washington, DC. He was a fellow at VCCA in 1999 and 2007. His compositions have been performed at the Kennedy Center, Smithsonian, National Gallery of Art, Dance Place, Corcoran, George Mason, University of Virginia and University of Maryland.

Cecilia Arditto →*017* has studied Music at the Conservatorio Julián Aguirre, Centro de Estudios Avanzados en Música Contemporánea and Conservatory of Amsterdam (cum laude) under Wim Henderickx. Arditto has received several prizes and residencies, including First Composition Prize CCRR-CEAMC 1996, "Buenos Aires No Duerme" Prize 1998, Concurso Radio Clásica, Concurso de Composición CEAMC-Arditti String Quartet, Beca Antorchas for two consecutive years, Premio Fondo Nacional de las Artes, and a Camargo Residency for artists in France. Her music has been performed internationally. She was co-founder of L.V. in Buenos Aires (1996-2001), an association for young composers dedicated to promote New Music.

Robert Ashley →*018*, a distinguished figure in American contemporary music, holds an international reputation for his work in new forms of opera and multi-disciplinary projects. His recorded works are acknowledged classics of language in a musical setting. He pioneered opera-for-television. Ashley's operatic works are distinctly original in style, and distinctly American in their subject matter and in their use of American language.

Kevin Austin →*019* is a teacher and composer living in Montreal, Quebec, Canada, where he has been active in electro-acoustics since 1969. At Concordia University's Faculty of Fine Arts, where he founded the ea studios in 1970, he has taught electro-acoustics, theory, ear training, composition, history, and more. His compositions range from traditional instrumentation to open scores, directed improvisations to tape and slides. Since 2002, Austin's work has focused on mixed (live and multi-channel) electro-acoustic pieces, mostly involving traditional Chinese instruments.

Trevor Baca →*020* lives and works in Austin, Texas. His interests as a composer include sorcery, divination and magic; lost and secret texts; broken and dismembered systems; and the effects, action and beauty of light. Baca's major works include BRIGHTEN (1996); VEIN (1996); ZEIT (1998); two verses of POÈME RÉCURSIF (1993 / 2003 / 2005); ĐÁRY (2004-2006); SEKKA (2006-2007); and LIDERCFENY (2007).

He studied art, music, literature, and languages at the University of Texas; composition and string techniques with Stefano Scodanibbio in Macerata, Italy; and composition with Julio Estrada in Mexico City.

Dennis Báthory-Kitsz →*021* has made work for sound sculptures, soloists, electronics, stage shows, orchestras, dancers, interactive multimedia, installations, and performance events, having written more than 750 compositions. He encouraged the chamber opera rebirth with *Plasm over ocean* (1977) at the World Trade Center; the solo interactive performance piece *Echo* (1985) used both handmade and acoustic instruments; the museum installation In Bocca al Lupo (1991) and outdoor installation Traveler's Rest (1992) were collaborations with sculptor Fernanda D'Agostino for quasi-intelligent systems; and retrospective concerts were presented in Europe beginning in 2003. His recorded compositions include *Detritus of Mating* (Sistrum), *zéyu, quânh & sweeh* (Frog Peak), *iskajtbrz* (UnLimit), *The Warbler's Garden* (Capstone), *Snare:Wilding* (illegal art) and *Icecut* (Perschbacher). Báthory-Kitsz co-hosted the award-winning radio program Kalvos & Damian's New Music Bazaar for ten years, co-founded the NonPop International Network, has been project director for numerous art and music festivals, and created the We Are All Mozart project to encourage composers' public work.

Stephen Beck's →*026* ongoing investigations in electronic art blend video, light, music, sculpture, engineering, and composition in evolving permutations and cinematic visual probes. His work has been shown in The American Century Centennial and other exhibitions at The Whitney Museum, shown as part of the video collection of the Museum of Modern Art, New York, and has also been exhibited in Japan, Italy, Germany, Caracas, Zagreb, Mexico, New York, and San Francisco in public museums, galleries, theaters, and private collections. He is currently a Visiting Fellow, Technology Artist in Residence, Distinguished Mackay Lecturer, and Executive in Residence, Center for Entrepreneurship and Technology in the College of Engineering, University of California, Berkeley.

Irene Becker →*031* is a Danish pianist, composer, and teacher. She received a Masters degree in Ornette Coleman, University of Copenhagen, and has studied world music at Creative Music Studio Woodstock, New York, at the Rhythmic Music Conservatory in Copenhagen. Since 1981, Becker has been a member of New Jungle Orchestra, and since 1978 the Quartet Thermænius, which now performs as Dørge-Becker-Carlsen. Becker has performed with John Tchicai, Marilyn Mazur, and Johnny Dyani, along with collaborations with numerous dancers and poets. Becker has performed in Gambia, Ghana, Bali, Siberia, China, among other exotic locales, giving her the opportunity to do extensive field studies, not to mention the vast inspiration she has derived from the respective music traditions. She has also composed for big band, woodwind-quintet, and choir.

Cathy Berberian →*032* (1928-1983) was an American composer and performer. A much-respected artist, mezzo-soprano Berberian won her reputation as an interpreter of difficult contemporary scores, but left an exemplary recorded performance in an opera by Monteverdi as a centerpiece of her rarefied art. Cross-discipline and cross-cultural training aided Berberian in the formation of her own broad tastes. Identified as a musical and technically secure interpreter of vocally treacherous works of the day in the 1950s, she was invited to Rome to perform on a program of music by John Cage. Fame overtook her quickly, and she became the preferred interpreter of works written specifically for her by the likes of Sylvano Bussotti, Hans Werner Henze, and Igor Stravinsky. In addition to her performing skills, Berberian was a composer of some note. Her *Stripsody*, written in 1966, reveals both humor and the ability to exploit her own virtuosity as a performer.

David Berezan →*033* is Senior Lecturer and Director of the Electro-acoustic Music Studios and MANTIS at the University of Manchester, UK. A Canadian-born composer, he completed degrees at the University of Calgary, and then became the student of Jonty Harrison in the PhD program in electro-acoustic music composition at the University of Birmingham. A frequent winner of competitions, Berezan's work has been awarded in the Bourges Competition in France, Russolo Competition in Italy, Radio Magyar Competition in Hungary, and many more around the world. Berezan's music is performed regularly throughout the UK, Europe, Asia, and North and South America. Recent acousmatic works include *Flux* (2007), *Ting* (2006), *Styal* (2004), *Cyclo* (2003) and *Baoding* (2002).

Carl Bergstrøm-Nielsen →*134* was born in Copenhagen, Denmark, in 1951, He is an improvising musician (French horn, small instruments, voice) and composer. His composer-performer groups include Group for Alternative Music (1971-1977), Group for Intuitive Music (1975-) and more. Co-founder of Denmark's Intuitive Music Conference 1995 and founder of Intuitive Records 1999. He has also directed improvisation workshops at conservatories and many other places internationally. His compositions have been performed in 21 countries and published by The Society for the Publication of Danish Music.

Philip Blackburn →*036* was born in Cambridge, England in 1962, and studied there as a Choral Scholar at Clare College. He earned his PhD in Composition from the University of Iowa where he studied with Ken-

neth Gaburo, and began work on publishing the Harry Partch archives, which took 15 years to complete. Blackburn's book, *Enclosure Three*, won the ASCAP Deems Taylor Award. He has been the Senior Program Director for the American Composers Forum since 1991, and continues to compose, build sound-sculptures, perform, and write. He runs the innova record label and produces two weekly iTunes podcasts: Alive and Composing, the Wonderful World of Innova, and the NEA-funded Measure For Measure: New Music, New Thoughts. He received the 2003 Bush Artist Fellowship.

Benjamin Boretz →*038* has taught in a number of music departments in the US and England; at Bard College, he founded the experimental music-learning program Music Program Zero. Until 2000, he was co-founding Editor of *Perspectives of New Music* and founding Editor of *The Open Space Magazine*. He was music critic for *The Nation* from 1962-70. Boretz's book *Being About Music* is an anthology of texts written between 1960 and 2003, as well as several CDs of solo piano music. CDs, DVDs, and printbooks of his work are issued by Open Space Publications.

Sam Britton →*039* studied architecture at the Architectural Association from 1996 to 1999 where he received his RIBA Part 1 certification with distinction. He began writing electronic music in 1996, being almost entirely self-taught. Since 1997 he has recorded and released music for a number of independent electronic music labels in the UK and US (Output Recordings, Temporary Residence, Domino, and The Leaf Label). Britton continues to perform as "Icarus" (with Ollie Brown) all over Europe. In 2004 he applied to study a masters course in electronic music and composition at IRCAM in Paris, and was chosen as one of the 10 internationally selected students. His composition *Junkspace* was highly commended and premiered during the 2006 artistic season at IRCAM.

Earle Brown →*040* (1926-2002) was born in Lunenberg, Massachusetts. He studied mathematics and engineering at Northwestern University, and attended the Schillinger House School of Music for techniques of composition and orchestration. A major force in contemporary music since the early 1950s, Brown's work with new notations, scoring methods, and performance attitudes led to his development of graphic, improvisational, and "open-form" scores such as *December 1952, Twenty-Five Pages* (1953), as well as the later orchestral scores *Available Forms I* and *II* (1961-62). Brown died in his home in Rye, New York, on July 2, 2002.

Herbert Brün →*042* (1918-2000) was born in Berlin, Germany. He left Germany in 1936 for Palestine, where he studied piano and composition at the Jerusalem Conservatory. He worked as composer and conductor of music for the theater, gave lectures and seminars emphasizing the function of music in society, and did a series of broadcasts on contemporary music. After a lecture tour of the US in 1962, Brün was invited by Lejaren Hiller to join the faculty of the University of Illinois where he continued his work in the electronic studio and began research on composition with computers. This resulted in pieces for tape and instruments, tape alone, and graphics to be interpreted and performed (of which *mutatis mutandis* is an example). Brün founded the School for Designing Society in 1993 and taught there until his death.

Ellen Burr →*043* is a flutist who has spent her career exploring new directions in music; Burr holds a Bachelor of Music degree in Flute Performance from Wichita State University. She has written and played for film, theater, and dance, having had over forty of her compositions performed in the US and Europe. *Duos*, a CD of Burr's own compositions and improvisations with various musicians, was released in 2006.

John Cage →*044* (1912-1992) was born in Los Angeles, California. Cage studied with Richard Buhlig, Henry Cowell, Adolph Weiss, and Arnold Schoenberg, each one of whom sparked his endless creativity. In 1938 Cage composed his first prepared piano piece, *Bacchanale*, for a dance by Syvilla Fort. In 1951, he organized a group of musicians and engineers to make the first music on magnetic tape. In 1952, at Black Mountain College, he presented a theatrical event considered by many to have been the first Happening. In 1958, Jasper Johns, Robert Rauschenberg, and Emile de Antonio organized a 25-year retrospective concert of his music at Town Hall in New York. Cage was rightfully recognized for his many contributions to the music world several times during his life. In 1949 Cage received a Guggenheim Fellowship and an Award from the National Academy of Arts and Letters for having extended the boundaries of music through his work with percussion orchestra and his invention of the prepared piano. He was elected to the American Academy of Arts and Sciences in 1978, and to the American Academy of Arts and Letters in 1988. In 1982 the French Legion d'Honneur made Cage a Commandeur de l'Ordre des Arts et des Lettres. One of the most influential innovators of the past 100 years, Cage experimented with many forms of notation. His graphic works include *Not Wanting to Say Anything About Marcel* with Calvin Sumsion (1969), *Mushroom Book* with Lois Long and Alexander Smith (1974); several series of etchings and monoprints made at the Crown Point Press, San Francisco, between 1978 and 1990; 52 paintings, the New River Watercolors, executed by Cage at the Miles C. Horton Center at the Virginia Polytechnic Institute and State University. Cage died in New York City on August 12th, 1992.

Allison Cameron →*045* is a composer of mostly chamber works that have been performed throughout Europe and North America; she is also active as an experimental performer. Her works have been performed at numerous festivals, including Bang on a Can (New York), Emerging Voices (San Diego), Evenings of New Music (Bratislava), the Festival Super-MicMac (Montréal), the Newfoundland Sound Symposium, New Music across America, and the Rumori Dagen (Amsterdam) as well as several in Toronto. Numerous ensembles have commissioned and/or performed her works. Cameron co-founded the Drystone Orchestra in 1989 and founded the Arcana Ensemble in 1992, both dedicated to the performance of experimental music in Toronto. From 2000-2005, she was the artistic director of Arraymusic where she created the Scratch! festival for experimental music. Cameron is also a member of the Association of Improvising Musicians of Toronto (AIMT)

Richard Carlyon →*288* (1930-2006) was artist and Professor Emeritus of Virginia Commonwealth University, He had a prolific and multifaceted career in art and in teaching, working within a variety of disciplines: painting, dance, multimedia performance, sculpture, video. Carlyon's 2005 video, *Flight Song* was an homage to John Cage whose work and thinking—activities with non-intended sound and chance, determined structures particularly—were an important influence on his own development as an artist, as was Cage's open, fluid approach to art and life. Carlyon studied painting and dance at Richmond Professional Institute (now Virginia Commonwealth University) earning a BFA in Fine Arts in 1953. After being drafted into the army and later moving to New York, he returned to RPI for an MFA in 1963 and became a member of the faculty. An influential and highly regarded teacher, he was awarded the Distinguished Teaching of Art Award from the College Art Association in 1993 and Virginia Commonwealth University's highest honor, the Presidential Medallion in 2005. Carlyon remained a highly productive artist until his death, working simultaneously in painting, drawing, and video. In these later works—developed through chance systems—his concerns with the visual aspects of language, sound and movement were beautifully realized.

Joe Catalano →*046* (1952-1998) was born in Elmira, New York. He received a BA in Music at the University of Buffalo, and received his Masters Degree in Musicology at Washington University in St. Louis, Missouri. As a composer and performer, Catalano was primarily concerned with drawing the listener's attention to long- time structures, forms occurring in the natural world, and the archaeological record. He wrote music for the concert hall, theater, film, and gallery spaces, using various instruments including keyboard, electronic drones and harmonics, piano and harpsichord, harmonic singing, the didjeridoo, and an instrument he invented, The Spirit Stick, as well as many others. He was also a member of the Didjeridoo Ensemble, and the Strawberry Creek String Band, where he played guitar and didjeridoo.

Raven Chacon →*048* originally from Chinle, Arizona's Navajo reservation. He is one of the few American Indian composers working in the world today. Chacon has recorded many works for classical and electronic instruments and ensembles and has had many performances and exhibits of his work across the US, as well as Europe, Canada, and New Zealand. Chacon has performed with the west coast noise trio KILT, in the Albuquerque ensemble Cobra//group as well as numerous ensembles in the Los Angeles experimental scene. Chacon is also a member of the First Nations Composers Initiative, a collective of composers and musicians working to progress the education and works of Native composers. The full-length disc, *Overheard Songs*, is available on Innova Recordings.

Chris Chalfant →*049* was born in Akron, Ohio. She is a composer, director, pianist, vocalist, artist, author, and poet. Noted for her unique style as a creative artist, Chalfant is a lyrical, rhythmically compelling, and powerful, innovative force in the world of jazz, new, and improvised music. Her prolific output of composition and improvisation (over 400 works) draws largely from the traditional music of Africa, Hungary, and India, as well as from American folk music, jazz, and classical music. She draws inspiration from nature, poetry, and dance with a strong sense of counterpoint and polyrhythm, resulting in interesting phrasing, tonal structures and rhythmic layers. Her keen sense of moment-to-moment movement in her composition and improvisation is supported by her training in Buddhism and Aikido, where "living under the blade" results in an unshakable fearlessness, confidence, and a path of truth.

Jef Chippewa →*050* is a Canadian composer who is particularly interested in questions of cultural awareness and identity, questioning and exploring the composer's responsibility in inheriting or appropriating

cultural heritage. His compositions have been performed in the Darmstadt Ferienkurse, FUTURA, and the ISCM World New Music Days, and can be heard on *Cache 2000*, a CD compilation of the top-placing works in a competition organized by the Canadian Electro-acoustic Community. In 1999, chippewa founded shirling & neueweise, a company specializing in the promotion of New Music notation. Since 2006, with assistance from colleagues João Miguel Pais and Alberto Bernal, shirling & neueweise is being transformed into a New Music publishing house. Since 2005, chippewa has acted as the Administrative co-Director of the Canadian Electro-acoustic Community, Canada's national association for electro-acoustic music.

Kyong Mee Choi →*051* is a composer, organist, painter, and visual artist. mainly working for chamber, electro-acoustic, interactive, and multimedia music. She was born in Korea. Her compositions have also incorporated algorithmic compositional devices, geometric charts, visual art, and analogues of musical elements with non-musical concepts. She has also been active as a painter, which has led her to experiment with integrating sound and image into a single artwork. As a researcher she worked in the CAVE (Cave Automatic Virtual Environment) as part of the Virtual Music Project. Her dissertation topic is the study of spatial relationships in painting and electro-acoustic music. She has had many works recognized in numerous places. She recently received the Robert Helps Prize for her Gestural Trajectory, which was premiered in Tampa and New York City in February 2007. Her guitar and electronic piece, *It only needs to be seen*, was premiered at SEAMUS in March 2007 and published in a SEAMUS CD series as well as her ensemble piece, *KANDINSKY*, published in SCI CD series in Spring 2007. She is currently a professor at the Music Conservatory of Roosevelt University in Chicago, Illinois.

Henrik Colding-Jørgensen →*054* composer, organist, and pedagogue, was born in Riisskov, Denmark. He received his degree as an organist from the Royal Danish Academy of Music in 1966 and as an authorized music teacher in 1967. During the early 1960s, he studied composition with Vagn Holmboe, complimenting this with later independent study on instrumentation, electro-acoustics, and computer programming. From 1967-1970 Colding-Jørgensen taught theory, ear training, and organ at the Copenhagen Music School and from 1969-1975 classes on music theory at The Carl Neilsen Academy of Music, Odense. In 1975 he was appointed organist and choir leader at Hundige and Kildebronde Churches south of Copenhagen, where he remains responsible for this large parish's musical requirements. His oeuvre includes a number of orchestral works, vocal and instrumental chamber music, choral music, and works for amateur musicians. Henrik Colding-Jørgensen received a bursary form the Danish State Art Foundation for the years 1969-1972. He won composition prizes in 1969 (4 preludes), 1970 (Albert), 1973 (Magnus) and Concours Internationale Opera et Ballet de Geneve 1985 (Nuup Kangerlua). Colding-Jørgensen was a member of the Danish Composer's Association managing committee from 1981 until 1991.

Nick Collins →*056* is a lecturer at the University of Sussex, working toward a PhD in Cambridge under the supervision of Ian Cross in Music and Alan Blackwell in Computer Science. The final title of the dissertation is "Towards Autonomous Agents for Live Computer Music: Realtime Machine Listening and Interactive Music Systems." Collins's interests include auditory modeling and the psychology of music, its application in automated analysis including event detection and beat tracking, aspects of interaction in live computer music, sound synthesis, and algorithmic composition. He performs a certain amount, perhaps on piano, mostly with electronics, preferably not in his own country.

David Cope →*057* was born in San Francisco in 1941. He completed degrees in composition at Arizona State University and the University of Southern California. His more than seventy published compositions include commissions by the Vermont, Pittsburgh, Indianapolis, Cabrillo Festival, and Santa Cruz Symphony Orchestras. His *New Directions in Music* now appears in its seventh edition, and his *New Music Composition*, *New Music Notation*, and *Techniques of the Contemporary Composer* continue to be used as standard reference tools. His books *Computers and Musical Style* (1991), *Experiments in Musical Intelligence* (1996), *The Algorithmic Composer* (2000), by A-R Editions, as well as *Virtual Music* (2001) and *Computer Models of Musical Creativity* (2005) published by MIT Press, describe his work with the computer program, *Experiments in Musical Intelligence*. Works made with *Experiments in Musical Intelligence* can also be found on Centaur Records Bach by Design, Classical Music Composed by Computer, Virtual Mozart, and Virtual Bach. The MW2 Ensemble of Poland recorded his Towers for chamber ensemble on Vienna Modern Masters.

Philip Corner →*058* was born in 1933 in New York City. Corner is a composer of interdisciplinary works that have been performed throughout the world; he is also active as a performer, a visual artist, and a writer. He is married to the dancer Phoebe Neville, with whom he has often collaborated, and has lived in Italy since 1992. Corner studied with Mark Brunswick and Fritz Jahoda at the City College of New York, as well as Henry Cowell and Otto Luening at Columbia University. He also studied analysis with Olivier Messiaen at the Conservatoire National Supérieur de Musique de Paris (where he earned a deuxième prix) and studied piano privately with Dorothy Taubman in New York. He was drafted into the US Army in 1959 and shipped to South Korea, where he studied calligraphy with Ki-Sung Kim. Greatly inspired by this experience, Phillip has used the Korean name Gwan Pok Contemplating Waterfall on occasion. As a performer of new music, Corner has been active as a pianist, trombonist, and vocalist, and he has also played Alphorn and various natural objects, including resonant metals. Corner co-founded the Tone Roads Chamber Ensemble in 1963 with Malcolm Goldstein and James Tenney. He co-founded, with Julie Winter, the music-ritual ensemble Sounds out of Silent Spaces in 1972, and with Barbara Benary and Daniel Goode, the Gamelan Son of Lion in 1976 and often played with both, as well as with the Experimental Intermedia Foundation in New York.

Brent Michael Davids, →*059* is a Native American film composer whose Mohican name is Blue Butterfly; he is a young composer who moves between the worlds of Western Classical Music and Native American Song. Davids holds Bachelors and Masters degrees in Music Composition from Northern Illinois University and Arizona State University respectively, trained at Robert Redford's Sundance Institute, and apprenticed with film composer Stephen Warbeck. Davids's film scores include: *The 1920 Classic Myth: Last of the Mohicans*, *World of American Indian Dance*, *The Business of Fancy Dancing*, *The Silent Enemy* and *Bright Circle*. Davids is a member of the Stockbridge Band of the Mohican Nation. Davids is also known for his Quartz Crystal Flute.

Tina Davidson →*060* is an American composer who creates music that stands out for its emotional depth and lyrical dignity. She was born in Stockholm, Sweden, and grew up in Oneonta, New York, and now lives in central Pennsylvania. Over the course of her twenty-five-year career, Davidson has been commissioned and performed by well-known ensembles such as National Symphony Orchestra, The Philadelphia Orchestra, American Composers Orchestra, and Kronos Quartet. Davidson's talents have been recognized through the receipt of a number of grants and fellowships, including the prestigious Pew Fellowship. Her music is available on Albany Records, CRI, Mikrokosmik, and Opus One.

Mario Diaz de Leon and **Jay King** →*061* were both born in the American Midwest. When de Leon and King first began to collaborate in 2000, a better creative partnership could not have been found. Their initial gallery shows and sound installations in Minnesota were very successful and their career brought them to the MFA program at the Milton Avery Graduate School of the Arts at Bard College. Since then, de Leon and King have had nine joint exhibits of their work in locations such as Julliard and PS1 in Queens. Their complementary skill sets have led to some fascinating innovations, as well as a residency at the Brooklyn Fireproof. They currently both live in Brooklyn, New York.

Robert Denham →*062* holds a DMA in composition from the University of Cincinnati College of Conservatory Music. His other degrees are from UCLA (MA Composition) and Biola University (BM, Trumpet Performance). Denham managed the annual new music festival MusicX for four years, and currently teaches Theory and Composition at West Texas A&M University. Denham's music includes works of every genre and has been performed across the United States and Europe and he has won numerous competitions, including the Hvar International Composition Competition (Croatia), the CCM Philharmonia Composition Competition, the Gluck Brass Quintet Composition Contest, and was the 1998 recipient of the coveted Stanley Wilson Composer's Award (UCLA).

Halim El-Dabh →*063* is internationally regarded as Egypt's foremost living composer of classical music, and one of the major composers of the 20th century. His numerous musical and dramatic works have been performed throughout Africa, Asia, Europe, and the Americas. Among his compositions are eleven operas, four symphonies, numerous ballets, concertos, and orchestral pieces, works for band and chorus, film

scores, incidental music for plays, chamber and electronic works, music for jazz and rock band, works for young performers, and pieces for various combinations of African, Asian, and Western instruments. El-Dabh has served on the faculty of Kent State University's School of Music since 1969, and has also taught at Haile Selassie I University in Ethiopia (1962-1964) and Howard University in Washington, DC (1966-1969). He is one of only eight Kent State University faculty members to hold the title of University Professor, Kent State's highest faculty distinction, and is a recipient of the Distinguished Teaching Award (1988). El-Dabh's music is published by C.F. Peters, and his works have been recorded by the Columbia Masterworks, Folkways, Egyptian Ministry of Culture and National Guidance, Auricular, Pointless Music, Luna Bisonte, Zentrum für Kunst und Medientechnologie Karlsruhe, NCG, Without Fear, Tedium House (Bananafish), Association for Consciousness Exploration, and Reference labels.

Robert Erickson →*066* (1917 -1997) was born in Marquette, Michigan, where, as a youth he played violin, piano and flute. Drawn to composition in his teens, he found his principal teacher in Ernst Krenek, whom he met in Chicago in 1938. He followed Krenek to Hamline University in St. Paul, and worked with him until 1947, when he received his Masters degree. Erickson taught at St. Catherine College (St. Paul), the San Francisco Conservatory, and the University of California at San Diego. Among his credits are a Guggenheim Fellowship (1966), election as a Fellow of the Institute for Creative Arts of the University of California (1968), and a commission from the National Endowment for the Arts for a work for violin and orchestra (1976). He was one of the first American composers to explore the resources of the twelve-tone system, and by 1943 his music had evolved to a less systematic type of atonal writing rooted in the rigors of imitative contrapuntal procedures. Through writing his book, *The Structure of Music: A Listener's Guide to Melody and Counterpoint*, he found himself purged of the contrapuntal obsession, making his music more intuitive, where craft, thought, and intuition are so merged that it is all one thing.

Pozzi Escot →*067* was chosen as one of the four outstanding women composers of the 20th century in 1975 when her *Fifth Symphony Sands*...was premiered by the New York Philharmonic. A graduate of the Juilliard School and the Hamburg Musikhochschule, she is recognized as a principal exponent of the relationship between music and mathematics, and author of numerous articles developing/discussing this subject and other theoretical/interdisciplinary issues. Co-author of the acclaimed Sonic Design books, she recently completed *The Poetics of Simple Mathematics in Music*. She is Editor-in-Chief of the journal *SONUS* (1980-), which was reviewed as the best music journal in the US, and President (1993-) of the International Society of Hildegard von Bingen Studies. On October 22, 2006, both Harvard University Lamont Library and the Massachusetts House of Representatives honored her. Her compositions have received recent performances at the Cologne Cathedral celebrating its 900th anniversary, Carnegie Hall, and innumerable other locations. She is currently a Woodrow Wilson Visiting Fellow and Professor of Graduate Theoretical Studies/Composition at the New England Conservatory.

Julio Estrada →*069* was born in Mexico City in 1943. Estrada is a composer, scientific theoretician, historian, pedagogue, and interpreter of unparalleled skill, having studied with the greatest composers of many nations. His PhD in Musicology was completed at Strasbourg University. In 1974 he became Researcher in Music at the Instituto de Estéticas, where he was appointed as the Chair of a project on Mexican Music History and as the head of MúSIIC, Música, Sistema Interactivo de Investigación y Composición, a musical system that he himself designed. He is the first music scholar to be honored as member of the Science Academy of Mexico and by the Mexican Education Ministry as National Researcher. He has been a visiting professor at Stanford, California, San Diego, and New Mexico, Musikwissenschaft Institut, Rostock, and at Darmstadt.

F

Rajmil Fischman →*070* was born in Lima, Peru, 1956, and attended musical studies at the National Conservatory of Lima, at the Rubin Academy - Tel Aviv University and at York University where he obtained a DPhil in 1991. He also obtained a BSc in Electrical Engineering from the Israel Institute of Technology (Technion), in 1980. While at York, he joined the Composers' Desktop Project, becoming a director in 1988. The same year, he was appointed lecturer at Keele University, UK, where he established the MA/MSc courses in Digital Music Technology and a purpose built Computer Music Laboratory. He was artistic director and principal conductor of the Keele Philharmonic Society (1990-1995), director of music (1998-2000). Currently, he is professor of Composition at Keele University. His main activities focus on instrumental and electroacoustic music composition, electroacoustic music theory, and music software development. His compositions have received international performances and been broadcast worldwide.

Robert Fleisher →*071* is a professor of music theory and composition at Northern Illinois University, DeKalb. He attended the High School of Music and Art in New York City and earned the baccalaureate degree with honors at the University of Colorado at Boulder. He earned the Master of Music and Doctor of Musical Arts degrees in composition at the University of Illinois, Urbana-Champaign. A devoted researcher as well, his book, *Twenty Israeli Composers: Voices of a Culture*, is published by the Wayne State University Press. His other writings have appeared in a variety of national and international journals. His music has been performed in Canada, France, Germany, Spain, and throughout the US; recordings appear on Centaur and Capstone labels.

Christopher Fox →*078* is a composer and was born in York, England, in 1955. He studied composition at Liverpool, Southampton, and York Universities and was awarded the degree of DPhil in composition from York University in 1984. In 1981 he won the composition prize of the Performing Right Society of Great Britain; since then he has established a reputation as one of the most unique composers of his generation. Between 1984 and 1994 he was a member of the composition staff of the Darmstadt New Music Summer School. In 1987 he lived in West Berlin as a guest of the DAAD Berlin Artists Programme. From 1994 to 2006 he taught in the Music Department at the University of Huddersfield; since 2006 he has been Research Professor in Music at Brunel University. Fox's work has been performed and broadcast worldwide and has featured in many of the leading new music festivals, from the Amsterdam PROMS to the BBC Promenade Concerts and from St. Petersburg to Sidney.

Bruce Friedman →*079* has been performing in a variety of musical settings in the Southern California area, since high school. While at Humboldt State University, he divided his interests between trumpet and "experimental music, where he earned his Bachelors Degree in Music. He then went on to receive a Teaching Credential in Instrumental Music from CSU, Los Angeles. Based in the Southern California area, he has performed in a broad spectrum of musical styles. These include free improv, jazz, symphonic, musical theater, brass ensemble, and pop groups. His own improvised projects have included the O.P.T.I.O.N.S. ensemble and the trio Junk Science.

G

Guillermo Galindo →*081* a.k.a. gal*in_dog, is a post-Mexican composer. Galindo's work spans a wide spectrum of artistic expression from symphonic composition to the domains of musical computer interaction, electro-acoustic music, opera, film music, performance, instrument building, and multimedia installation and soundscape design. His music has been performed at major festivals throughout the US, Latin America, Europe, and Asia. From 1992 to 2004, Galindo wrote music for the San Francisco-based dance performance group, Unbound Spirit Dance Company. Galindo holds a B.A. in Film Scoring Composition from Berklee College of Music in Boston, Massachusetts, and a Master in the Arts degree in Music Composition from Mills College in Oakland, California. Galindo teaches composition, sound design, music cultural history, and music theory at the California College of Arts and at the College of San Mateo.

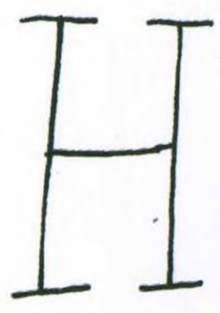
Malcom Goldstein →*082* has been active in the presentation of New Music and dance in New York City since the early 1960s, as a co-founder of the Tone Roads Ensemble and as participant in the Judson Dance Theater, the New York Festival of the Avant Garde and the Experimental Intermedia Foundation. He has toured through North America and Europe, presenting solo violin concerts and appearing with various New Music and dance ensembles. His work has been performed at festivals all over the world. Recordings of his work are found on numerous CDs. Goldstein has received grants from the NEA, Massachusetts Council on the Arts and the Canada Council for the Arts. Goldstein has also written extensively on improvisation, as in his book, Sounding the Full Circle.

Daniel Goode →*084* is a composer of stage, orchestral, chamber, vocal, electroacoustic, and multimedia works that have been performed throughout the world; he is also active as a clarinettist and writer. Goode initially studied philosophy at Oberlin College, where he graduated with a BA in 1957, and later

studied composition at Columbia University, where he earned his MA in 1962. A recipient of numerous honors, some of his most recent include two grants from Arts International (1996, 2001) and the ArtsLink Fellowship (1996). He also received the Meet the Composer Choreographer's Commission (1998, for Re:Sound, his collaboration with Jody Oberfelder) and the New York Foundation for the Arts Fellowship for Music Composition (2004). He was a performer in the music-ritual ensemble Sounds out of Silent Spaces from 1972-1979. He has been a composer and performer with the Gamelan Son of Lion since 1976, which he co-founded with Barbara Benary and Philip Corner. He also co-founded with William Hellermann the DownTown Ensemble in 1983, of which he remains the co-director. Goode has written numerous articles on music, as well as the books *From Notebooks* (1984, Frog Peak) and *One Page Pieces* (second edition, 1999, Frog Peak). In addition, he edited the collection *Frog Peak Rock Music Book* (1995, Frog Peak). He taught at Rutgers University from 1971-98 and served as director of its electronic music studio, which he founded.

Guillermo Gregorio →*087* was born in Buenos Aires, Argentina, in 1941. He became an American citizen in 2003. Along with his Chicago-based trio and other ensembles, Gregorio has performed his own compositions in Europe and the US. In January 2001, he founded the Madi Ensemble of Chicago, which performs original and historical scores that draw from the conceptual foundation of the 20th-century Argentinean avant-garde. Gregorio has been Radio Curator of Armonia, a Musicians Residency Program created by the Chicago Symphony Orchestra. His composition *Otra Musica 4* was nominated for special notice by the 2006 IAMIC Annual List selection panel (American Music Center/The International Association of Grantmakers). He has a degree in architecture, and taught architecture and industrial design at the University of Buenos Aires and the University of La Plata, Argentina. Currently, he teaches Art Appreciation and 20th Century Art at Purdue University in North Carolina.

Barry Guy →*088* is an innovative double bass player and composer whose creative diversity in the fields of jazz improvisation, solo recitals, chamber, and orchestral performance is the outcome both of an unusually varied training and a zest for experimentation. Guy's compositions arise from personal liaisons with musicians and ensembles. His commissions arrive from chamber orchestras, groups, and soloists interested in contemporary musical performance with a special commitment to communicate with the audience. Guy is founder and Artistic Director of the London Jazz Composers Orchestra. The Barry Guy New Orchestra (BGNO), formed in 2000, features in festivals as a project ensemble, and Barry Guy as a director/composer is often invited to work with large ensembles or to give lectures and workshops on his graphic scores. BGNO's first album *Inscape-Tableaux* won the 2001 Choc de l'Année award in France.



Barbara Heller →*091* was born in 1936 in Ludwigshafen/Rhine. She studied music in Mannheim and in Munich. From 1958 to 1962 she worked at the Staatliche Hoch schule fur Musik und Theater, Mannheim, as pianist, piano teacher, and composer. After postgraduate studies in composition in Mannheim (Hans Vogt), Munich (Harald Genzmer) and Siena (M. Lavagmino/film-music) she moved to Darmstadt, where she today lives and works as a freelance composer. She was one of the founders of the Internationaler Arbeitskreis Frau und Musik in 1978 and she remained an active leading member until 1981. From 1986 until 1993 she was a board member of the Institut fur Neue Musik und Musikerziehung Darmstadt. Her compositions include works for piano, chamber music and occasional film music. Since 1988 she has been developing ways of working together with women and men in the visual arts. Improvisation and experimentation have become essential aspects of her music, along with a concept of communication.

Brian Heller →*091* was born in 1976, was raised, and now lives, in the Minneapolis/St. Paul area of Minnesota. He is a graduate of the Perpich Center for Arts Education, and the Hartt School at the University of Hartford, where he received a Hartt Performing Arts Scholarship and majored in composition and music production/technology. In the fall of 2005, he was a commissioned composer for Philip Glass's MATA Festival in New York. His pieces, both for traditional instruments and electronics, have been featured in the Sonic Circuit's Festival and broadcast in the US, Canada, and the Czech Republic. He has received grants from the Jerome Foundation, Meet the Composer, American Composer's Forum, and Minnesota State Arts Board. He has been awarded prizes from The Hartt School, The New School and the Composer's Symposium at the Oregon Bach Festival.

William Hellermann →*092* was born in 1939 in Milwaukee, Wisconsin. Hellerman holds a HIT TUNEBS degree from the University of Wisconsin and the MA and DMA degrees from Columbia University. His compositions have received frequent performances around the world. There are several commercial recordings of Mr. Hellermann's music currently available under many labels. In addition to his work as a composer, Hellerman is active as a classical guitarist, specializing in the performance of New Music. He has premiered numerous works for the guitar, many employing new instrumental techniques that he himself has developed. He has made solo recital appearances all across Europe. Hellerman is also well known for his work in music sculpture and has exhibited frequently in the New York City area. Currently, he is President of The SoundArt Foundation and Editor of *The Calendar for New Music*.

Mara Helmuth →*102* is a composer of music that often involves the computer in performance and composition. Her works have been performed internationally. She is on the faculty of the University of Cincinnati College-Conservatory for Music and director of the Center for Computer Music. She holds a DMA from Columbia University. Her electroacoustic music includes *Mellipse* (1989-1995), *Abandoned Lake in Maine* (1997) and *bugs and ice: A Question of Focus* (2002). Her writings have appeared in the monographs *Audible Traces* and *Analytical Methods of Electroacoustic Music*, and in the *Journal of New Music Research* and *Perspectives of New Music*. Recent work includes *Where is my Voice*, for ensemble and fixed format audio, the *Staircase of Light* interactive installation in Beijing at the Sino-Nordic Performance Arts Space, an Internet 2 application for improvisation—*Soundmesh*, and updates to *StochGran*. She was Vice President for Conferences, Newsletter Editor and member of the Board of Directors of the International Computer Music Association between 1997 and 2006.

Sven Hermann →*104* was born in 1974, studied accordion with Alois Mueller, Teodoro Anzellotti, Mie Miki and composition with Nicolaus A. Huber. Since 2000, Hermann has been a member of Interzone Perceptible. Hermann combines his love for composition, interpretation, improvisation, and graphic notation in his Silent Film Concerts, where he invites his audience to take a trip through Interzone Perceptible's cabinet of horror at the Eulenspiegel film theater in Essen, Germany.

Christoph Herndler →*105* was born in 1964, and currently lives in Gaspoltshofen, Austria. He studied the organ and composition with Roman Haubenstock-Ramati and electro-acoustic music at the Vienna University of Music. Herndler has also honed the nuances of his understanding of electro-acoustic music for several years in the United States, at the well-known CCRMA at Stanford University, the University of California at San Diego, and at the Claremont Colleges in Los Angeles. In 1997 he founded the new music chamber ensemble EIS. Among his many works are notable graphic and multimedia scores, notational-objects, sound installations, and video work.

Alan Hilario →*106* was born in 1967 in Manila, the Philippines, and now lives in Germany. Hilario studied composition at the University of the Philippines, and also studied composition with Mathias Spahlinger and electronic music with Mesias Maiguashca at the Musikhochschule Freiburg/Breisgau while on a scholarship from the Deutscher Akademischer Austauschdienst. He also participated in the Voix Nouvelle, Session de Composition de la Fondation Royaumont in 1996, the Nachwuchsforum of ISCM in Frankfurt/Main in 1998 and the Stage d'Automne at IRCAM in 2000. He has collaborated with many film and theatre directors and was active as a violinist in the Philippine Philharmonic Orchestra from 1988-1992. His many honors and grants include the Kompositionspreis of the city of Stuttgart (1997), the Heinrich-Strobel-Stiftung Scholarship in Composition (1999, 2002), and the Kunststiftung Baden-Württemberg Scholarship (2003). His music has been performed at various festivals, including the Wittener Tage für Neue Musik and the Donaueschinger Musiktage.

Peter Hölscher →*108* was born in 1958 and lives and works in Düsseldorf, Germany. Hölscher came to composing from a visual arts background. After studying graphic design with a focus on illustration and photography, he started working as designer and sculptor. The natural progression of his artistic development led to the creation of sound sculptures, his primary mode of expression since 2000. Various musicians and composers, such as Manfred Niehaus, Dietmar Bonnen, and Andreas Schilling, for each of whom Hölscher has written special compositions, have played his sculptures. Hölscher also takes photographs of the sounds produced by the sculptures.

Robin Hoffmann →*107* began his musical education with his studies in guitar with Thomas Bittermann and Michael Teuchert in Frankfurt. He then studied composition in Essen. Hoffmann is currently freelancing as a composer and guitarist in Frankfurt, where he also works as a lecturer at the Hochschule für Musik und Darstellende Kunst Frankfurt. He is the founder and chairman of the Frankfurt Society for New Music. The winner of many awards, he has received the Kranichstein Composition Award, the 50th Stuttgart Award for Composition, the Deutsche Studienpreis of the Körber Foundation and the competition "Junge Kultur" of the Altstadtherbst Düsseldorf.

Tsai-yun Huang →*109* Was born in Taipei, Taiwan, in 1979. Huang received her BA in music at the Taipei National University of the Arts in Taiwan. Huang has won numerous awards and honors, including the New Sound of Kuan-do Award (2002), the International Contemporary Ensemble 21st Century Young Composers Project (2006), the 21st Century Piano Commission Competition Award (2006), Student Orchestra Commission Competition Award at UIUC (2007), University of Illinois Experimental Music Studio Commission, and finalist of ASCAP young composers competition in 2007. Her composition, *Blazing Dawn*, was selected for performance in the marathon concert of 2006 Summer Institute for Contemporary Performance Practice at the New England Conservatory of Music. Huang has participated in the Bang on a Can All-Stars reading session at the Tryon Festival Theatre (KCPA), and with the Kronos String Quartet at the Krannert Center for the Performing Arts. In addition to being a composer, Huang also performs on piano, pipa, and liuqin.

Christoph Illing →*111* was born 1969. An artist and composer of electronic, electro-acoustic and abstract music, he is based in Berlin, Germany. After beginning in 1992 as DJ and sound artist with publications in electronic music, studies in philosophy and informatics, sound studies at the University of the Arts in Berlin resulted in his plunge into the combination of sound and philosophical and psychological concepts.

Lynn Job →*113* delights international audiences with her eclectic romanticism, passionate mysticism, and flare for allegorical soundscapes. The American composter draws from Western Judeo-Christian Messianic traditions as well as the sounds of nature, and folk music of widely divergent cultures. Many of her music manuscripts bundle with original poetry that imposes imagery to the work, intended to be shared with the audience. Job has over 100 serious concert works in various stages of development with over half published to date. Most works use extended traditional Western notation but she is skilled in every notation style, old and new.

David Evan Jones →*114* is a composer of instrumental, vocal, and electronic music, and a theorist on the topic of relationships between phonetics and music. He studied and served as Technical Coordinator at the Center for Music Experiment at the University of California San Diego. During the 1980-1981 school year, he was Composer-in-Residence at the University of York, England. He has subsequently taught at Dartmouth College and now at the University of California, Santa Cruz. Jones's works have been recognized by grants from the NEA, the California Arts Council, and the New Hampshire Arts Council.

John Kannenberg →*115* was born in 1969. Kannenberg creates quietly reflective works in both image and sound that blur the boundaries between intention and accident. Incorporating techniques derived from free improvisation, musical composition, field drawing, minimalism, cubism, and abstract expressionism, his works deal with a variety of themes, including primal natural forces, spirituality and mindful contemplation, melancholy and nostalgia, abstracted narratives, and the confluence of sonic and visual art. Kannenberg's work has been presented in the US, Europe, South America, and Australia, including appearances at the FILE 2007 conference in Rio De Janeiro, the 2006 Soundwalk festival in Long Beach, the 2005 John Cage Musicircus at the Museum of Contemporary Art Chicago, the 2005 so.cal.sonic festival in Long Beach, and several broadcast appearances on Resonance 104.4 FM in London. He has released recordings on the Crouton, Topscore, Grain of Sound, Retinascan, Earlabs, Cohort and Why Not LTD labels. Since April 2002, Kannenberg has served as the creator, designer, and curator of Stasisfield.com, an experimental music label and interdisciplinary digital art space.

Suk-Jun Kim →117 is a composer with a varied educational background from which he has drawn much inspiration. Kim studied theology at Yonsei University, South Korea, and recording engineering at the Ontario Institute of Audio and Recording Technology. He earned a master's degree in Music Technology at Northwestern University, Evanston, Illinois, a diploma at CCMIX, Paris, and he is currently a doctoral fellow at the University of Florida. Kim has received prizes and mentions in Métamorphoses, the Biennial Acousmatic Composition Competition in Belgium, the ASCAP/SEAMUS Student Commission Competition, the International Competition of Electroacoustic Music and Sonic in Bourges, France, MUSICA VIVA, Lisbon, Portugal, and MUSICA NOVA, Prague, Czech. Kim's music has been performed worldwide and can be heard on ICMC, IMEB, and SEAMUS, M&R labels.

Panayiotis Kokoras →*118* was born in Greece in 1974. In 2003 he completed his PhD at the University of York in England. He teaches Electro-acoustic Composition at the Aristotle University of Thessaloniki, and is President of the Hellenic Electro-acoustic Music Composers Association. Kokoras's array of achievements includes commissions from the IRCAM (Paris), FROMM (Harvard University), MATA (New York) and more than 27 distinctions and prizes at international competitions, including the Pierre Schaeffer Award 2005 (Italy), Musica Viva 2005 and 2002 (Portugal), Gaudeamus 2004 and 2003 (The Netherlands), Bourges Residence Prix 2004 (France), Insulae Electronicae 2003 (Italy), Jurgenson Competition 2003 (Russia), Seoul international competition 2003 (Korea). His works are regularly performed at international festivals and concert series throughout Europe, Asia, and the US. His music appears in 14 CD compilations by Miso Musica, SAN / CEC, Independent Opposition Records, ICMC2004, LOSS, Host Artists Group, Musica Nova, and others.

Slavek Kwi →*119* is a sound-artist, composer, and researcher. Kwi was born in the former Czechoslovakia, lived 14 years in Belgium, and, since October 2000, has been based in Ireland. Kwi is interested in both "free music" research as part of social investigations, and employing "space-time," and any objects it contains as instrument in equal measure. The nature of his works oscillates between purely sound-based and multidisciplinary projects. From the early 1990s, Kwi has operated under the name "Artificial Memory Trace." Kwi also facilitates experimental sound-workshops with autistic children, and children with learning disabilities. His workshop technique places emphasis on extensive listening and the stimulation of creativity through observation and the support of natural tendencies.

Joan La Barbara →*122* explores the human voice as a multi-faceted instrument expanding traditional boundaries, creating works for multiple voices, and developing a unique vocabulary of experimental and extended vocal techniques: multiphonics, circular singing, ululation and glottal clicks, have become her "signature sounds," garnering awards in the US and Europe. She is also a frequently commissioned composer of chamber ensembles, Music Theater, orchestra, interactive technology, radio works, dance, and more. Educated at Syracuse and New York Universities, and Tanglewood/Berkshire Music Center, she learned her compositional tools as an apprentice with numerous composers. In the early part of her career, La Barbara performed and recorded with minimalists Steve Reich and Philip Glass, as well as numerous jazz artists. A talented vocal interpreter, La Barbara has premiered landmark compositions written for her by noted American composers, including the title role in Robert Ashley's opera *Now Eleanor's Idea*, and Philip Glass and Robert Wilson's *Einstein on the Beach*. La Barbara has many important recordings, notably *John Cage at Summerstage with Joan La Barbara, Leonard Stein and William Winant*, Cage's final concert performance. La Barbara has served on music faculties in the US and abroad, and was guest lecturer at Princeton University in 2006, as well as maintaining a private studio in New York City. Among her many appointments, she served as Vice President of the American Music Center in New York.

John Lane →*125* is a creative composer and true advocate of unique percussion music. He studied percussion performance and composition at the Cincinnati College-Conservatory of Music (DMA) and holds degrees from the University of North Texas (MM) and

Stephen F. Austin State University (BM). Lane is currently Assistant Professor of Percussion at Sam Houston State University. Prior to his appointment at Sam Houston, he served as Interim Professor of Percussion at the University of Wyoming in Laramie. As a performer and composer, Lane has been featured at the Cincinnati Contemporary Arts Center, the MUSIC 06 and MUSIC 07 festivals at the Cincinnati College-Conservatory of Music, the Van Cliburn Foundation's concert series, the Percussive Arts Society International Conventions (2002, 2003, 2004), and at the Hokuto International Music Festival in Japan. Lane has recorded for the Klavier and GIA record labels. In addition, Lane gives educational clinics and solo percussion recitals across the US.

Mark Langford →*126* studied piano at Wellington Polytechnic in New Zealand before switching to a composition degree at Victoria University. He continued his study of digital and analog music at the Institute for Sonology in Utrecht, the Netherlands. Langford has received commissions from Otago University, the New Zealand Symphony Orchestra, and the Queen Elizabeth II Arts Council. His works have been performed in New Zealand, Japan, Germany, Tawain, the US, and the Netherlands. He recently completed a diploma in Astronomy and is the organist at the Christian Science Church in Wellington.

Hope Lee →*128* was born in Taiwan in 1953 and began studying piano at age five. She moved to Canada in 1967, and studied piano and theory at the Royal Conservatory of Music. She studied at McGill University, as well as at the Staatliche Hockschule fur Musik in Frieberg, West Germany. In 1980 she married the composer David Eagle. Lee's participation in music festivals around the world was particularly important in shaping her musical development. Starting in 1989, Lee completed nine works in a projected 11-piece cycle, *Voices In Time*, with each inspired by a particular time in Chinese history but having contemporary relevance. Lee has undertaken several important projects in collaboration with David Eagle.

Cheryl E. Leonard →*129* is a composer, performer, improviser, and instrument builder with degrees from Mills College and Hampshire College in music composition. Raw materials for her works can come from just about anywhere and result in pieces that embrace the spectrum of musical possibilities: improvised to composed, acoustic to electronic, diaphanous to bombastic, notes to noise. Leonard has also spent many years performing and improvising with various experimental ensembles and noise bands, touring Japan, Canada, and US in the process. She is currently a member of Big City Orchestra. Her many collaborations with artists from other disciplines include: three projects with the interdisciplinary ensemble RK Corral, the creation of an interactive sculpture with Swedish sculptor Anna Hallin, and numerous works for dance and video. Leonard has also designed sounds for the Monterey Bay Aquarium's "Ocean's Edge" exhibit.

Charlotte Lindvang →*130* is a composer with healing goals. Lindvang was educated as a music therapist at Aalborg University in Denmark. Not only is Lindvang a qualified music therapist, but she also has eight years of experience working in this field alongside psychiatric patients. She has worked at Aalborg University as both a teacher and as an examiner. Currently, Charlotte is a PhD student at the Department of Music and Music Therapy at Aalborg.

Anestis Logothetis →*131* (1921-1994) was born in Pyrghos to Greek parents. Logothetis began his studies of music at the University of Music and Performing Arts, and participated regularly in the Internationale Ferienkurse fur Neue Musik in Darmstadt. It was not until 1957, however, that he began experimenting in electronic music at the Westdeutsche Rundfunk in Koln. In 1959, after completing more than fifty works in standard notation, Logothetis created *Struktur/Textur/Spiegel/Spiel*, a work that opens up the dialogue between composer and interpreting performers; this was his first graphic score. Logothetis continued to work within this new score-making paradigm for the remainder of his creative life, producing beautifully laid out scores which combine an almost fanatical attention to detail—especially with respect to timbral manipulation—with a variable approach to player autonomy. If the role of the composer is to provide a template then, in the works of Logothetis, it is the responsibility of the interpreting performers to remember the audience and find a realization of that template which merits the listeners' attention.

Bent Lorentzen →*132* was born in 1935. He studied musicology at the University in Aarhus and at the Royal Danish Academy of Music in Copenhagen. He taught at the Academy of Music in Aarhus for some years after his graduation. Lorentzen occupies a special position in modern Danish composition music. In the 1960s, electronic music inspired his creativity to take new paths, and, since then, innumerable other composition techniques have exerted an influence on his work. Lorentzen has composed in nearly every genre. His orchestral music includes concertos for oboe (1980), cello (1984), piano (1984), saxophone (1986), trumpet (1991), and violin (2001); his chamber music comprises solo works for organ, piano, trumpet, saxophone, clarinet, guitar, violin, cello, and double-bass, as well as string quartets and works with mixed ensembles (2-12 instruments). His choral music consists of a wealth of works in a special theatrical style. Lorentzen has made a great impact as a music dramatist with fourteen operas so far, many of which have been staged abroad.

Martín Sebastian Loyato →*134* was born in Buenos Aires, Argentina. A multi-talented artist, he is a trumpeter, improviser, composer, conductor, visual artist, and poet. His early studies in music were at the Conservatory Superior of Music in Buenos Aires. He has participated in festivals around the world, and performed in a tour of Astor Piazzolla's music across North and South America. He has shared the stage with such notable artists as Arturo Sandoval, Poncho Sanchez, Yusef Lateef, Peabo Bryson, and Wadada Leo Smith. Loyato has worked with many orchestras, such as the Orquesta Académica de la Filarmónica de Buenos Aires, West Hollywood Symphony, and has conducted under Pierre Boulez for the Ojai Music Festival. Loyato has been commissioned to write a children's musical, *En el Fondo del Mar*, to benefit poor children in Buenos Aires, among other numerous private commissions from Europe, Oceania, and America. He has received many awards for his compositions. Loyato is currently residing in New York and is working on his PhD in composition (and a Masters in Spanish Literature). In 2006, before his poetry book *Helechos del Alma* was published in Argentina, he was appointed Poetry Ambassador by the International Society of Poets in the US.

M

Michael Maierhof →*138* was born in Hamburg, Germany. He is a self-taught composer of primarily chamber, vocal, and multimedia works that have been performed throughout Europe, the US and Asia. Maierhof studied mathematics and music in Kassel and art history and philosophy in Hamburg, but did not begin composing until 1988. His main interest as a composer is developing new sounds and new playing techniques while using traditional orchestral instruments. Maierhof has earned different awards, including an award from the Cité Internationale des Arts in Paris. His works have been selected by the Deutsche Gesellschaft für Neue Musik three times from 1998 to 2000. His music has been heard at the Darmstaedter Ferienkurse in 1998 and 2000. He was an invited lecturer on his music at Trinity College in Dublin, the Stuttgarter Musikhochschule, California Art Institute in Los Angeles, the Mozarteum in Salzburg, and the Conservatory of Music in Beijing, China.

Tyler Mains →*140* is from a small town just along the Ohio River called Maysville, Kentucky. Born on November 17, 1990, Mains began his musical studies with the violin at age 7 and the piano at age 14. He started venturing away from playing the music of others to composing music early on in his studies. Mains felt that he could never project the sounds he desired through conventional notations, so he started to compose using new and innovative forms that better expressed his musical intentions. He discovered that sound itself could actually be read through alternative forms, and that music did not need to be read off staves.

Keeril Makan →*141* has received commissions from ensembles such as the Kronos Quartet, the Bang on a Can All-Stars, the Paul Dresher Electroacoustic Band, the Left Coast Chamber Ensemble, and the Del Sol String Quartet, and performances by the New York New Music Ensemble, California EAR Unit, Le Nouvel Ensemble Moderne, Continuum, and Ensemble Nomad. Makan has participated in the Gaudeamus Festival in Amsterdam, the Aspen Music Festival, Le Domaine Forget in Quebec, the MATA Festival in New York, and Voix Nouvelles in Royaumont, France. Carnegie Hall commissioned him to write a work for the John Harbison/Dawn Upshaw Workshop for Composers and Singers. He has received prizes from the American Academy of Arts and Letters and ASCAP, and commissions from the Gerbode and Hewlett Foundations of San Francisco and the Fromm Music Foundation at Harvard. He has received two Meet the Composer/Commissioning Music USA awards. Makan received a BM in composition and a BA in religion from Oberlin, and a PhD in music from the University of California at Berkeley. He is Assistant Professor of Music at the Massachusetts Institute of Technology.

Dan Marmorstein →*142* was born in 1954 in Jersey City, New Jersey; he is currently based in Copenhagen, Denmark. Marmorstein's list of accomplishments truly runs the gamut. In 1980, Marmorstein

not only composed the music for, but also choreographed the dances, and performed in the title role as Apollonius of Tyana, authored by Charles Olsen. A true innovator in the field of notation, graphic scores, and improvisation; both conceived and created the composer's organization called "Score," which was organized with the specific aim of being a forum for the discussion and the performance of "scored" (partitur-notated) music. Marmorstein's works are multisensory explorations.

Dimitris Maronidis →*144* was born in Thessaloniki, Greece, in 1980. He studied counterpoint, orchestration and composition at the State Conservatory of Thessaloniki. During 2000-2001, he was introduced to the techniques of algorithmic synthesis and sound synthesis. His composition *Polychromia III* for ensemble was awarded at the annual Competition for Young Greek Composers at the Athens Megaron Concert Hall in 2005. His orchestral piece *Ignis Fatuus* was awarded the second prize at the first Paneuropean Composition Competition "Kostas Nikitas" at Thessaloniki in March 2007. In 2006 Maronidis moved to the UK to complete a PhD in music composition at York University. He is also enrolled in a PhD course in Music Composition at the Aristotle University of Thessaloniki. His dissertation concerns the history and the techniques of spectral music, and new ways of organizing sound color.

Tony Martin →*145* has pioneered groundbreaking visual works for New Music since the 1960s, especially in his historic association with the San Francisco Tape Music Center. These combined projector works and recent video compositions have been performed on both coasts. In California these works have been shown at the San Francisco Museum of Art, Mills College CCM, and LACMA, and in New York at Merkin Hall, The Whitney Museum, and Eyebeam. Martin's innovative viewer participation and installation works consistently include the viewer as a direct and necessary part of the art object, and their psychological quest and visual poetry has earned them places in the permanent collections of The Butler Institute of American Art, The Everson Museum, and the Indiana University of Art Museum.

Kate Maxwell →*147* was born in 1979 and is, as far as she is aware, still alive. Although her first degree specialized in composition, after falling in fascinated love with the Chanson de Roland she decided to pursue postgraduate study in words and music in medieval France. She studied the Livre de Fauvel for her MPhil and she is currently completing a PhD at the University of Glasgow on the mise en page of the principal manuscripts containing the works of the 14th-century poet-composer Guillaume de Machaut. She has not let this stop her composing, however, and indeed many of her compositions reflect her other work through their focus on speech rhythm and the combinations of spoken voice and instruments, words, and music. *Performing Notation, Notation Performing* draws on the similarities Maxwell has observed between the underlying concepts behind medieval and contemporary music presentation in order to explore, and display the history of notation.

Cilla McQueen →*148* lives in Bluff, at the southern tip of New Zealand's South Island. A poet and artist, she has published ten collections and a CD of her poetry. Her awards include the New Zealand Book Award for Poetry for 1983, 1989, and 1991; the Robert Burns Fellowship at Otago University for 1985 and 1986; a Fulbright Visiting Writer's Fellowship in 1985; an award from the Inaugural Australia-New Zealand Writers' Exchange Fellowship in 1987; the Goethe Institute Scholarship in Berlin, 1988; and the New Zealand Queen Elizabeth Arts Council Scholarship Letters in 1992. Her compositions are, naturally, poetic in nature.

Rajesh Mehta →*150* was born in Calcutta, India, in 1964, grew up in the US from 1970 and studied at MIT where he graduated in the History of Ideas and Electrical Engineering in 1986. After a four-year career as a teacher/lecturer of Mathematics and the Sciences as well as an acoustical engineer working on the design of silencers, Mehta embarked on a career in music. He spent a year at the Mills College Contemporary Music Center in 1989 and has been active as a professional musician in Europe since 1991. Mehta is currently based in Berlin, Germany. He co-founded the New Music Record Label True Muze Records, Hamburg in 1998 with Vlatko Kucan and the late Peter Niklas Wilson. Metha has redefined the architecture of the trumpet through his self-designed "Hybrid Trumpet," which connects various trumpets and sound transforming devices together by plastic tubing. He has created his own graphical notational/composition system which uses a Design-Construction approach toward the musical composition. Metha was an artist-in-resident in Cork, Ireland in 2004 and launched the "cORKAstra"—an ensemble of adventurous musicians based in Cork. He has toured and performed internationally with his own groups.

Ann Millikan →*151* received her MFA in Composition from the California Institute of the Arts in 1998. She received her BA in Music–Jazz Concentration (jazz piano, voice, and composition) from San Jose State University in 1986. Millikan has studied West African percussion from Senegal and Ghana, and she has also studied many years of classical voice. She composes concert music for orchestra, chamber ensembles, and choir, as well as interdisciplinary projects involving theatre and dance. Millikan's debut album, *The Music of Ann Millikan Featuring the California EAR Unit* is available on Innova Recordings.

Rene Mogensen →*152* is a composer whose output includes chamber music, orchestral, interactive electro-acoustic works, jazz, choral, improvisation, and other music, using various notational systems. These have been performed by numerous groups in the US, Europe, and elsewhere, and are recorded on a number of labels. Mogensen's advanced musical degrees include an MeM from the Royal Academy of Music, Denmark, an MA from New York University, and a BA from the University of Rochester. Mogensen deliberately searches out new frameworks that can challenge his creative output as a composer and musician, and oftentimes that framework is traditional notation. In notated music, it seems logical and empirically evident that changing the notational framework for a particular idea opens up new possibilities for the music. Therefore, Mogensen sees and uses graphical notation not as a rejection of other forms or tools, but as a resource that is part of the great palette available.

Stephen Montague →*154* is an Anglo-American composer born in 1943 in Syracuse, New York, and educated at Florida State University, and Ohio State University. Montague has lived in Europe since 1972, first as a Fulbright Scholar in Warsaw, and, since 1974, in London, where he works as a freelance composer. His works have been performed worldwide by leading orchestras, ensembles, and soloists, including the London Symphony Orchestra, Royal Philharmonic, BBC Symphony Orchestra, The National Symphony Orchestra in Washington, DC, and The Royal Ballet. Montague was Artistic Advisor for the BBC Symphony Orchestra's John Cage UnCaged Composer Weekend and Artistic Director of the Musicircus at the Barbican Centre, London in 2004. He has been Artistic Director and Chairman of the Society for the Promotion of New Music, a founder, Chairman and Concert Director of Sonic Arts Network, and the 1995-1997 Associate Composer with the Orchestra of St. Johns, London. Montague's CD, *Southern Lament*, won The International Piano Awards' Best New Piano Music Recording for 2006.

Robert Morris →*156* is an American composer and music theorist. Born in Cheltenham, England, in 1943, Morris received his musical education at the Eastman School of Music and the University of Michigan. Morris presently teaches as Professor of Composition at the Eastman School of Music. He has written music for a wide diversity of musical forms and media, having composed over 160 works including computer and improvisational music. Much of his output is influenced by non-Western music and uses structural principles from Arabic, Indian, Indonesian, Japanese, and early Western music. He has written three books and over 50 articles and reviews, which have appeared in the *Journal of Music Theory*, In *Theory Only*, *Music Theory Spectrum*, and more. His most recent book, *Advanced Class Notes for Atonal Theory*, is available from Frog Peak Music. Morris is presently Co-editor of Perspectives of New Music, and Contributing Editor of The Open Space Magazine.

Gordon Mumma →*157* was born on March 30, 1935, in Framingham, Massachusetts. He lived in Ann Arbor, Michigan, from 1953 to 1966, where he was co-founder of the Cooperative Studio for Electronic Music, and the now-historic ONCE Festivals of Contemporary Music. From 1966 to 1974 he was, with John Cage and David Tudor, one of the composer-musicians with the Merce Cunningham Dance Company, for which he composed four commissioned works. Beginning in 1966 he performed with the Sonic Arts Union. Mumma was among the first composers to employ electronic circuitry of his own design in music compositions and live performances. A prolific composer and performer, his work includes both electronic music and composition for acoustical instruments—particularly for piano and small ensembles. Following teaching engagements at various institutions elsewhere, he became a Canadian resident in British Columbia.

N

Gaël Navard →*158* was born in 1982 in Biot in the South of France. He studied composition and musicology at the Conservatory and the University of Nice. Navard specialized in electro-acoustic composition at the Centre International de Recherche Musicale of Nice and at the Center for New Music and

Audio Technologies of the University of California in Berkeley thanks to a scholarship awarded by the FACE Foundation of the French American Cultural Exchange. He has also obtained scholarships from the Ministère de la Culture in France and the Paul Sacher Foundation in Basel, Switzerland, to fund the pursuit of a PhD in composition with a thesis in musical games, supervised by Pascal Decroupet at the University of Nice Sophia-Antipolis, and to support his research at the New York's Columbia University. Navard has composed more than twenty instrumental and electro-acoustic compositions, played in various festivals mainly in France.

Phill Niblock →*160* is an intermedia artist using music, film, photography, video, and computers. He was born in Indiana in 1933. Since the mid-1960s, he has been making music and inter-media performances that have been shown at numerous venues around the world including The Museum of Modern Art, The Wadsworth Atheneum, the Kitchen, the Paris Autumn Festival, Palais des Beaux Arts, Brussels, Institute of Contemporary Art, London; Akademie der Kunste, Berlin; ZKM; Carpenter Center for the Visual Arts at Harvard, and the World Music Institute at Merkin Hall. Since 1985, he has been the director of the Experimental Intermedia Foundation in New York, where he has been an artist/member since 1968. He is the producer of Music and Intermedia presentations at EI since 1973 (about 1,000 performances) and the curator of EI's XI Records label. In 1993 he was part of the formation of an Experimental Intermedia organization in Gent, Belgium. Niblock's music is available on the XI, Moikai, Mode and Touch labels. A DVD of films and music is available on the Extreme label.

Gary Noland →*162* was born in 1957 in Seattle, Washington, and raised in Berkeley, California. As an adolescent, Noland lived for a time in Salzburg and in Garmish-Partenkirchen, where he absorbed many musical influences. He earned a BA in music from UC Berkeley in 1979, continued studies at the Boston Conservatory, and transferred to Harvard where he worked as a teaching fellow and added to his academic credits an MA and a PhD in 1989. Noland's compositions have been performed and broadcast throughout the United States, as well as in Europe, Australia, and Japan, and are regularly featured on the "Seventh Species" composers concert series in Oregon, which he founded in San Francisco in 1990. Noland has taught music at Harvard and at the University of Oregon and currently teaches piano, theory, and composition as an independent instructor in Portland, Oregon.

Makoto Nomura →*166* was born in Japan in 1968. His far-ranging musical works include pieces for Javanese gamelan, Western orchestra, rock band, Japanese traditional instruments, children's choir, chamber music, electronics, toys, everyday objects, and more. In 1991, he won first prize in the New Artists' Audition 91 from Sony Music Entertainment, and released a CD from Epic/Sony Records in 1992. Since 1995 he has been a freelance composer/improviser. In 1996 he formed the melodica orchestra "P-blot," and started to explore the interesting world of contemporary and experimental melodica music. In 1999, Nomura invented a new way of collaborative composition "Shogi Composition," where participants from various backgrounds can compose music together. With Hugh Nankivell he created "Whaletone Opera," an improvised community opera-making project. He has collaborated with various visual artists, dancers, poets, and animals.

Morgan O'Hara →*292* enjoyed a childhood and early adolescence in an international community in post-war Japan, establishing a close relationships between east and west, creation and destruction, life and art. Live attention, contact between eye and subject and between pencil and paper are essential to her work. She lives and works in New York and Corneliano Bertario, Italy. O'Hara's work has been seen the world over.

Eoin O'Keeffe →*169* was born in 1979 in Clonmel, Ireland. Here, he developed a huge musical interest as a member of a local symphonic wind band, in which he played clarinet and trumpet, and later spent several years as conductor. He received a BA in Music in Waterford. As a conductor of the university chamber choir, he also had the opportunity to write and conduct several choral pieces. After moving to the UK and spending several years working in education as a secondary school music teacher, O'Keeffe returned to his studies at the Guildhall School of Music and Drama, London, studying for an MA.The idea of traditional Irish music being an aural tradition is a strong characteristic of some of his works.

Pauline Oliveros →*170* was born in 1932. For the past five decades, this internationally acclaimed composer, performer, humanitarian, and pioneer in American music. She has explored sound and forged new ground for herself and others. Through improvisation, electronic music, teaching, ritual, and meditation she has created a body of work with such breadth of vision that it profoundly affects those who experience it. Oliveros was born and raised in Houston, Texas, to a musical family. In 1985 she started the Deep Listening Institute, Ltd., a non-profit arts organization. Currently, she serves as president of the Deep Listening Institute, Ltd., as Distinguished Research Professor of Music at Rensselaer Polytechnic Institute in Troy, New York, and as the Darius Milhaud Composer-in-Residence at Mills College in Oakland, California.

Vagn E. Olsson →*171* was born in Denmark in 1954. Olsson works in several different musical fields, including punk, popular, and compositional music. Since the 1990s, Olsson has been writing primarily new compositional music, the sources of which have been the second modernistic wave, appropriation, syncopation, and shamelessness. He has been writing for chamber ensembles and soloists, as well as short orchestral works, choir music, and incidental music for films. Vagn has been working with electronic music in the duo Dog God along with Peter Ole Joergensen. In 2000, Olsson formed the hybrid, prog-rock ensemble El Hombre Invisible. The ensemble members consist of both classical and punk, beat-music, and jazz musicians. In connection with the aforementioned activities, Olsson has been arranging concerts, symposiums and cultural events in almost every facet of art.

Paul Paccione →*172* was born in 1952 in New York City. He is Professor of Music Theory and Composition at Western Illinois University. Paccione's music is noted for its distinctive orchestration, contrapuntal refinement, and metaphoric complexity. An artist and scholar, Paccione's writings on various aspects of modern music concern themselves with the interplay of cultural conditions on compositional thought. Drawing inspiration from many of the other innovators of notation, he has also written articles on composers Morton Feldman, Eric Richards, and Kenneth Gaburo. His writings on music have been published in *Perspectives of New Music*, ex tempore, *College Music Symposium*, the *Journal of Music Theory Pedagogy* and *American Music*.

Marianthi Papalexandri-Alexandri →*173* was born in Greece in 1974. He is a composer who places performer and listener into an evocative private sound world by permanently questioning the function of gestures and sounds. Her music has been performed and broadcasted widely in Europe, the US, and South America by some of the world's contemporary music specialists, such as SurPlus, The Volharding Orchestra, The London Improvisers Orchestra, and dissonArt. She studied composition at Goldsmiths College University of London. She is currently a fellow PhD student in composition at the University of California, San Diego. She is a permanent member of the Greek Composers Union, a finalist of the International Award for New Music in Darmstadt for 2008, and a recipient of the Dan David Prize in the field of Contemporary Music. As an improviser she has performed throughout Europe, the US, and Mexico. Currently, she lives and works in Amsterdam.

Brice Pauset →*174* was born in Besançon, France, in 1965. He studied piano, violin, and the harpsichord before beginning his exploration of writing and composition. An award-winner from the Fondation Marcel Bleustein-Blanchet pour la Vocation in 1994, as well as an intern at IRCAM from 1994 to 1996, he has since devoted his career to the composition and performance of his own works, as well as works from the classical repertory, on the harpsichord and piano. He regularly collaborates with IRCAM, the Festival d'Automne in Paris, the Ensemble Accroche-Note, in Belgiumen with the Ars Musica Festival, in Vienna with the Klangforum, and in Germany with Radio SWR et WDR, the Berlin Biennial, and the Ensemble Recherche.

Tommaso Perego →*175* was born in 1975 in Milan, Italy. He obtained degrees in Double Bass, Composition, and Electronic Music in Milan at the Conservatorio G.Verdi. Perego's pieces have been performed worldwide, including performances at Plymouth Expo in the United Kingdom in 2007; SICMF, Spark Festival, Minnesota USA 2007; the Signal&Noise Festival in Vancouver, Canada, in 2007; the Conservatorio G.Verdi, in Milan; ICMC 2006 in Tulane, Louisiana; the LiveliXem Competition 2006, Rome, Italy; the Accademia Internazionale della Musica, Milan; the Havana Spring Festival 2006; the Basel Electronik Music Fes-

tival in Switzerland; and the Druskininkai Youth Music Festival, Vilnius, Lithuania.

Joe Pignato →*176* composes music for improvising ensembles. His scores blend traditional notation and graphic symbols with the intent of eliciting idiosyncratic interpretations of his work. Ensembles in New York, New Jersey, Texas, Washington, and Indiana have performed his music. He has lectured on music composition, notation, improvisation, and the music industry at New York University, Ramapo College, NW Vista College, Earlham College, the Crane School of Music, and the Eastman School of Music. He has spoken at the SXSW Music Festival, the CMJ New Music Festival, the International Association of Jazz Educators Convention, the Gavin Convention, and the Jazz Times Convention. Pignato is assistant professor of music at the State University of New York, Oneonta. He is a doctoral candidate and Tanglewood Scholar designee in the College of Fine Arts, School of Music at Boston University and holds an MA from New York University's Gallatin School and a BA from the University of Massachusetts, Amherst.

Jonathan Pitkin →*177* was born in 1978 and brought up in Edinburgh, Scotland. He studied at Christ Church, Oxford, and at the Royal Academy of Music. His compositions, which include orchestral, chamber, brass, and choral work, have been performed and commissioned internationally as well as throughout the UK. His compositions have appeared at the Spitalfields and Huddersfield Contemporary Music Festivals, as well as the Philharmonia Orchestra's "Music of Today" series at the Royal Festival Hall. Performers of Pitkin's work have included the BBC Scottish Symphony Orchestra and the BBC Singers. His work has been broadcast on BBC Radio 3. Two of his choral works have been included in the "New Horizons" series, which is published by Oxford University Press. Currently he teaches musicianship and composition at the Royal College of Music Junior Department.

Sam Pluta →*178* is a New York City-based composer of electronic, acoustic, and mixed media works. His music has been played in concerts by leading instrumental ensembles and players, including Prism Quartet, the Alsar Quartet, Ha-Yang Kim, and Teresa McCollough, and shown in art galleries throughout the world. Pluta is a member of three bands: Glissando Bin Laden, His MusicHadiin, exclusiveOr. His most recent release is *Either This or That, but Certainly Not Both*, an independently released exlusiveOr album. Pluta is pursuing his DMA at Columbia University in New York. In the summer, he teaches at The Walden School, a music program for young composers.

Larry Polansky →*179* is a composer, theorist, performer, software designer, teacher, writer, editor, and publisher. He is the Strauss Professor of Music at Dartmouth College, teaches in the graduate program in electro-acoustic music, and is co-director of the Bregman Electro-Acoustic Music Studio. For ten years he worked at the Mills College Center for Contemporary Music Center as staff and faculty. He is one of the three co-authors (with Phil Burk and David Rosenboom) of the widely used computer music language HMSL. His music has been recorded, performed, reviewed and written about widely, and his articles and writings have appeared in numerous publications, on diverse topics including computer music, music theory, and American music. He is the co-founder and co-director of Frog Peak Music (A Composers' Collective), the founding guest editor of the *Leonardo Music Journal*, and on the board of directors of Perspectives of New Music and several other journals and institutions. His solo CDs are on Artifact, Pogus, Cold Blue, and New World Records. His book on Ruth Crawford (*The Music of American Folk Song*) is published by Rochester University Press. His current ensembles include the Downtown Ensemble in NYC and Trio (with Kui Dong and Christian Wolff).

Alwynne Pritchard →*180* was born in Glasgow, Scotland, in 1968, and, as a teenager, began having composition lessons with her father, Gwyn Pritchard. She then studied at the Royal Academy of Music, where she was awarded many prizes for her work. In 1997 she was awarded a research scholarship by the University of Bristol, and in 2003 received a PhD in composition. Leading players and ensembles throughout Europe and in America have performed Pritchard's music. Her works have been recorded for CD and are regularly broadcast on BBC Radios 3 and 4, and around the world. In 2005, her masterwork *Decoy* was awarded a special prize given by the Foundation Ton Bruynèl, STEIM and the Foundation GAUDEAMUS. In 2005 Pritchard formed the Bergen/London-based improvisation quintet FAT BATTERY, and a year later, the trio Myrtle, with computer programmer Thorolf Thuestad and flautist Rowland Sutherland. Both groups regularly perform improvised and semi-composed electro-acoustic music throughout Europe.

Anthony Ptak →*181* was born in 1970 in Brooklyn, New York, and is an artist and composer. He performed at the First International Theremin Festival in 1997, and has been a guest artist at the Experimental Music Studios at the University of Illinois at Urbana-Champaign 2000-2007. He was appointed visiting researcher at UIUC in 2001, and taught sound for new media artists in the School of Art and Design until 2007. He has given presentations, designed site-specific compositions, and performances on theremin, invented instruments, and electro-acoustics at SEAMUS, School of the Art Institute, St. Louis Art Museum, Millennium Film Workshop, LaGranja, The Kitchen, IMEB Bourges, and Institute for Advances Study in Princeton, New Jersey. Ptak is a founding member of the New York Theremin Society. He currently resides in New York City.

Takayuki Rai →*182* was born in Tokyo in 1954. He worked at the Institute of Sonology as a guest composer from 1982 until 1990. His works have been selected at numerous international competitions, including the Gaudeamus Competition of Composition, the ISCM World Music Days, and the International Computer Music Conference. He has also won the premier prizes at the 13th and 17th International Electroacoustic Music Competition Bourges in France, the Irino Composition Prize in Japan, and the First Prize at the NEWCOMP International Computer Music Competition in the US. In 1991, he received the ICMA (International Computer Music Association) Commission Award. After having taught at the Sonology Department, Kunitachi College of Music in Tokyo for 15 years, he is currently teaching computer music and composition at the Lancaster University in the UK.

Randy Raine-Reusch →*183* is an improvisationally based composer and performer specializing in New and Experimental Music for world instruments. An innovator interested in extending the boundaries of music, he has created distinct new performance styles on a number of world instruments from his collection of 700. Raine-Reusch has spent over thirty years exploring the relationship of music to psychology, philosophy, and spiritual or religious practices. He studied at the Creative Music Studio in the 1970s, before going overseas to study with master musicians in Australia and throughout Asia. His unique voice has led him to perform and/or record with the Tianjin Symphony Orchestra, Aerosmith, Yes, The Cranberries, Pauline Oliveros, Stuart Dempster, Barry Guy, and the Hereditary Grand Master of Seikyodo Ichigenkin. As a solo artist, with his world beat ensemble ASZA, or with Chinese zheng virtuoso Mei Han, Raine-Reusch has performed at two WOMAD festivals, three World Expos, and on numerous international tours. Raine-Reusch is a contributing editor for *Musicworks Magazine* and has recently written *Play the World: 101 World Instrument Primer* for Mel Bay Publications.

Jon Raskin →*184* is a founding member of the Rova Saxophone Quartet, formed in 1978. Some highlights from his membership with Rova include a commission by Other Minds IV for The Hear and Now; a composition for Saxophone Quartet, Erhu, Pipa, Kayagum, Koto, Tabla Tarong and Pat Waing; organizing the 30-year Anniversary Concert of John Coltrane's Ascension and the subsequent recording, *Electric Ascension*; performing the music of Miles Davis with Yo Miles!; composing a collaborative work for SF Taiko Dojo/Rova; working with Howard Martin on the installation work *Occupancy*; The Glass Head collaboration with the Butoh Dance company Ink Boat. Besides presenting works by the group and the individual members Rova has commissioned music for saxophone quartet that includes work by Terry Riley, Muhal Richard Abrams, Alvin Curran, Fred Frith and Satako Fujii. Rova has over 40 recordings spanning 29 years.

Henrik Ehland Rasmussen →*186* was born in 1961 in Denmark. A composer with a varied history, many of his life's experiences have formed the source of inspiration for his compositions: his various experiments with sound, and concert activities, his capacity as a piano teacher, his practicing of music therapy, and his experiences as a pianist in various contexts, such as his collaboration with the jazz pianist Niels Balle, and as a member of another intuitive group that was founded at the Convention for Danish Intuitive Music. As well as his life experiences, Rasmussen's interest in the musician's creative moment, as well as interactions between musicians in the here and now, also inspire the formation of his compositions.

Herman Rechberger →*188* is an exceptional figure in Finnish music. He was born in Austria and studied graphic art and classical guitar in his native Linz, in Zürich, and Brussels, before moving to Finland in 1970 and studying composition, guitar, electronic music, the recorder, and oboe at the Sibelius Academy. Since then he has made a name for himself both as a composer and as a performing artist. In his versatility Rechberger could almost be called a contemporary Renaissance man. It is not, therefore, surprising that Renaissance music and culture have been major sources of inspiration. He is equally at home in every era, and often combines elements of different periods in his works. Aleatoric and performing liberties are characteristic of his works and may appear in a variety of guises, such as mobile technique, improvisation, open form, and the use of graphic notation, which Rechberger calls the pictographic concept. The freedom of choice may also extend to the

instruments, as in *Voyage* (1982), scored for soloists on folk or other instruments.

Will Redman →*189* is a composer, improviser, and educator. He received his first drum set as a Christmas gift from his parents and spent his teenage years playing in various punk and hard rock bands in Baltimore, Maryland. From 2002 to 2006 Redman was a Dean's Fellow in the PhD program at the University at Buffalo, completing his doctoral dissertation *Book*, a collection of over 100 graphic compositions intended to inspire radical interpretation, which premiered by the Open Music Ensemble at Hallwalls Contemporary Art Center in Buffalo. Redman is a current and founding member of the Open Music Foundation and its resident ensemble, the Open Music Ensemble. Redman is also the initiator and facilitator of OpenLab, a monthly free improvisation workshop sponsored by Soundlab and the Open Music Foundation. He currently lives in Silver Spring, Maryland, with his wife Joanna.

Wendy Reid →*191* was born in Los Angeles, California, in 1952. She received degrees from Mills College, the University of Southern California, School of Performing Arts, and attended Stanford University, Center for Computer Research in Music and Acoustics. She is the recipient of numerous commissions, awards, and grants including Meet The Composer (in California and New York), an ASMC grant, and the Paul Merritt Henry Prize. Her works have been performed and broadcast throughout the US, Europe, and Asia by the Abel-Steinberg-Winant Trio, the San Francisco Contemporary Music Players, the Kronos Quartet, the New Music Works Ensemble, the San Francisco String Quartet, the Tree Ensemble, and others. Reid is producer of the New Music series, "New Music with Birds, Frogs and Other Creatures," uniquely sponsored by the Natural Sciences Department of the Oakland Museum and the San Francisco Art Institute. She currently teaches at Mills College and Holy Names College.

Steve Roden →*192* is a visual and sound artist from Los Angeles, California. His work includes painting, drawing, sculpture, film/video, sound installation, and performance. Roden received an MFA from Art Center College of Design in Pasadena (1989), and a BFA from Otis Parsons in Los Angeles (1986). Grants include Nimoy Artist in Residency, COLA, California Arts Council Grant, and Subito Grant from the American Composer's Forum. Roden has been exhibiting and performing his visuals and soundworks since the mid 1980s, and has had numerous solo and group exhibitions internationally, including museums, galleries and arts spaces. Roden has also released many CDs of audio works on labels worldwide.

Dirk (,) Rodney →*196* (1940-unknown) was a legendary English pre-minimalist, electronic music composer and guitarist, and Fah Win Gum cotzér ("disciple"). This Liverpudlian's works are just beginning to emerge (some reconstructed from manuscripts by South Carolina composer/scholar Tyler Kingdom).

Keren Rosenbaum →*198* is a multi-faceted composer, video artist, and interdisciplinary creator and performer. Rosenbaum was born in Israel, a talented composer and flautist from a very young age. She studied at Tel Aviv University. She continued developing her distinctive style at the Royal Conservatory, The Hague, where she studied composition and electronic music. After directing and producing New Voices, the first interdisciplinary festival in Israel, she founded the body that would become the main vehicle for her musical and artistic vision—the Reflex Ensemble, a unique collective of classical musicians (including players from the Israeli Philharmonic and the Tel Aviv Opera), jazz musicians and actors, as well as lighting, sound, photography, and video artists from Israel and Europe.

David Rosenboom →*200* is a composer, performer, conductor, interdisciplinary artist, author, and educator, known as a pioneer in American experimental music. Since the 1960s, he has explored ideas in his work about the spontaneous evolution of musical forms, languages for improvisation, new techniques in scoring for ensembles, cross-cultural collaborations, performance art, computer music systems, interactive multimedia, compositional algorithms, and extended musical interface with the human nervous system. Rosenboom has been Dean of the School of Music and Conductor of the New Century Players at the California Institute of the Arts since 1990 and was Co-Director of the Center for Experiments in Art, Information and Technology from 1990 to 1998. He taught at Mills College from 1979 to 1990, as Professor of Music, Head of the Music Department and Director of the Center for Contemporary Music and held the Darius Milhaud Chair from 1987 to 1990. He studied at the University of Illinois, where he was later awarded the prestigious George A. Miller Professorship. His work has been presented in many venues around the world, widely published, and recorded on a variety of labels.

Marina Rosenfeld →*202* is an artist and composer based in New York City. She has been a member of the Music/Sound faculty of the Milton Avery School of the Arts at Bard College since 2003. Rosenfeld initiated a decade-long engagement with composition, improvisation, performance and situational aesthetic practices in 1994 with her now notorious Sheer Frost Orchestra. She performs frequently in the US, Canada, and Europe as a turn-tablist, spinning original dub plates with leading contemporary artists, including the Merce Cunningham Company, Sonic Youth, Christian Marclay, George Lewis, and Ikue Mori. Rosenfeld's work has appeared in a wide variety of contexts, including the Whitney Museum, Tate Modern, Donaueschingen, Ars Electronica, Maerz Musik, Mutek, Wein Modern, and Taktlos Bern. Her most recent release is *Joy of Fear*.

Daniel Rothman →*204* a composer and clarinetist, lives in Venice, California. Textual collaborator Michael Lentz is a poet and performer who lives in Berlin, Germany.

Theresa Sauer →*206* has been inspired by innovative composers like John Cage her entire life. While completing her MS in Musicology at LIU/NYU, Sauer studied with the famously reactive Raoul Pleskow. She draws inspiration from art, science, and the natural world. A piano teacher and pedagogist for many years, she published a series of piano education volumes with the Piano Guild of America. She has also been profiled for her excellence in music education by the Piano Teacher's Guild of America and awarded honors as an extraordinary pedogogist. Her combined interests of visual and musical art are what first drew her into the world of graphic scores. Sauer's passion for innovative notation is what led her to the creation of this volume.

R. Murray Schafer →*209* was born in Sarnia, Ontario, Canada. He is a composer of interdisciplinary works that have been performed throughout the world; he is also active as a writer. Schafer initially studied harpsichord, music theory and piano at the Royal Conservatory of Music in Toronto. He then briefly studied composition, harpsichord, and piano at the University of Toronto, but was soon expelled. However, he did obtain a piano degree from the Royal College of Music in London while still in Canada. He has received six honorary doctorates from universities in Argentina, Canada and France. Schafer has received numerous honors, including the Fromm Foundation Award, the Canadian Music Council Medal, a Guggenheim Fellowship, the William Harold Moon Award, the Composer of the Year Award from the Canadian Music Council, and the Jules Léger Prize for New Chamber Music for his String Quartet No. 2, *Waves*. Most recently, he received the Walter Carsen Prize for Excellence in the Performing Arts from the Canada Council for the Arts in 2005, for a lifetime of achievement. Schafer founded the series "Ten Centuries Concerts" in Toronto in 1962. He pioneered research in the field of acoustic ecology in 1972, and has since remained active as a researcher in this field, notably with the World Forum for Acoustic Ecology.

León Schidlowsky →*212* was born in 1931 in Santiago de Chile. An admirer of Arnold Schönberg's music, Schidlowsky began his career as a composer in the tradition of the Second Viennese School. Later he began to use serial techniques and to experiment with various tonal concepts (atonal, aleatory, graphic notation), but always on the understanding that music has a deeper significance that transcends absolute art, which can open up a path for a human being to find a way to himself. The scores of his graphic music have been shown in various exhibitions linked to concerts. Many of his works make reference to his Jewish-Israeli identity and to the history of the Jewish people, as well as to his interest in and protest against the political and social situation in Chile and Latin America. Schidlowsky lives in Tel Aviv. On the occasion of his 75th birthday he received homages in Tel Aviv and Berlin.

Catherine Schieve →*214* has worked for 30 years in many art forms and on several continents as an inter-media artist and composer. She grew up in the Southwestern US, and spent much time rambling about the West Texas desert and the Rocky Mountains as a teenager and college student. In the 1980s she held a Post Doctoral Research Fellowship at the University of Melbourne, during which she had constant interactions with the vibrant experimental music scene in Australia. During that time she developed a vision for creating musical scores as enormous, precisely articulated paintings that would be performed as works of theatre. Schieve has continued this sound-and-vision project since then, expanding her work into video art, installation, digital printmaking, environmental sound, and a growing body of visual artworks. She holds an MFA in Multimedia, Video Art, and Drawing from the University of Iowa, and a PhD in Music Research from the University of California, San Diego. Schieve's work is held in numerous permanent and private collections in the US, India, Australia, and Brazil.

Daniel Schnee →*218* is a saxophonist/composer from Toronto, Canada, who has written extensively for film,

dance, and theater in Asia as well as worked as a sideman on saxophone/percussion with several Grammy Award-winning artists. Schnee has extensive training in classical Arabic music and regularly performs both traditional and Avant-Garde music all over the world. Formerly an instructor in saxophone and clarinet at the Edward Said National Conservatory of Music in Jerusalem, Schnee is currently completing his doctoral studies in ethnomusicology at York University. Schnee's graphic score interpretation method has been used to create not only concerts of structured improvisation, choreographed dance and theater pieces, but also concerts of contemporary music by musicians performing on traditional Japanese, Persian, and Middle Eastern instruments.

Brian Schorn →*219* is an interdisciplinary artist. His academic accomplishments encompass an MFA in Electronic Music and Recording Media from Mills College, an MFA in Graphic Design from Cranbrook Academy of Art, an MFA in Creative Writing from Brown University, an MFA in Photography from the University of Michigan, a BFA in Photography from the Center for Creative Studies and 2 years of pre-med at Oakland University. His music has been performed in the US and Europe. In 2007, his solo art museum exhibition entitled "Magnum Opus: A 25 Year Retrospective," featured over 75 works of Schorn's visual art. Other recent exhibitions include "Human Form" at Studio 71 South in Grand Rapids, Michigan, and "Computer Punch Card Art" at the Washington Pavilion of Arts and Science in Souix Falls, South Dakota. His creative writing has been published in numerous books, journals and anthologies; his hand-made poetry books are in the Marvin Sackner Collection of Concrete and Visual Poetry. Schorn was awarded the Academy of American Poets Prize in 1991.

Barry Schrader →*220* has had his compositions for electronics, dance, film, video, mixed media, live/electro-acoustic music combinations, and real-time computer performance performed throughout the world. Schrader is the founder and first president of SEAMUS, and has been involved with the inauguration and operation of several performance series such SCREAM, the Currents concert series at Theatre Vanguard, and the CalArts Electro-Acoustic Music Marathon. He has written for several publications including *The New Grove Dictionary of Music and Musicians* and *Grolier's Encyclopedia*, and is the author of the book *Introduction to Electro-Acoustic Music*. He has been a member of the Composition Faculty of the California Institute of the Arts School of Music since 1971, and has also taught at the University of California at Santa Barbara and the California State University at Los Angeles.

Phillip Schulze →*221* was born in 1979 in Düsseldorf, Germany. He is a media artist and composer. His musical work spans all media. His ouvre includes electronic real-time processing, compositions for classical instruments (which are sometimes performed in combination with video or video-scores, and usually written for special environments), as well as improvisational acoustic music for alto clarinet and synthesizer. Schulze studied Media Art and Stage Design at the University for Art and Design, an institution in the Center for Art and Media in Karlsruhe, Germany. Currently, he is studying experimental composition at Wesleyan University.

Michael J. Schumacher →*222* is a composer, performer, and installation artist based in New York City. Since 1996, Schumacher has pioneered sound art, first at Studio Five Beekman and, since 2000, at Diapason Gallery, by giving over 150 artists the opportunity to present. Schumacher has lectured at Bard College, The New School, The School for Visual Arts, and Juilliard. He has taught piano, composition, theory, and ear training privately since 1983. He currently teaches at Polytechnic University in Brooklyn. Schumacher was awarded the prestigious Foundation for Contemporary Performance Arts Grant in 2001. He has also received awards and residencies from NYFA, Harvestworks, Rensselaer Polytechnic Institute, Meet the Composer, DAAD, and others. Schumacher has degrees in music composition from Indiana University, where he won the composition prize in 1982, and the Juilliard School, where he earned the doctorate in 1988. Born in 1961 in Washington, DC, he has lived in New York since 1983.

Elliott Sharp →*226* is a composer, multi-instrumentalist, and sound-artist who has personified the experimental music scene in New York City for over thirty years and has released over 200 recordings spanning the musical spectrum. Sharp has pioneered ways of applying fractal geometry, chaos theory, and genetic metaphors to musical composition and interaction. Groups that have performed Sharp's music include the RadioSinfonie Frankfurt, Ensemble Modern, Ensemble Rezonanz, Continuum, Flux Quartet, Kronos Quartet, and Zeitkratzer. He leads the projects Orchestra Carbon, Tectonics, and Terraplane. His composition *Quarks Swim Free* premiered at the Venice Biennale in September 2003 and his chamber opera *EmPyre* premiered at the 2006 Biennale. Sharp's most recent CD releases include *Racing Hearts-Calling-Tessalation Row*, *Quadrature*, *Dispersion Of Seeds*, *Forgery*. He founded the ongoing zOaR Records in 1978 both for his own productions and for other radical music.

Marilyn Shrude →*228* is a Chicago-born composer; she received degrees from Alverno College and Northwestern University. Among her more prestigious honors are those from the American Academy of Arts and Letters, Rockefeller Foundation, Kennedy Center Friedheim, Chamber Music America/ASCAP, National Endowment for the Arts, Cleveland Arts Prize and the Ohio Arts Council. Her works are recorded for New World, Albany, Azica, MMC, Capstone, Orion, Centaur, Neuma, Access and Ohio Brassworks and are published by C.F. Peters, American Composers Alliance, Editions Henry Lemoine (Paris), Neue Musik Verlag Berlin, Southern Music and Thomas House. Since 1977 she has been on the faculty of Bowling Green State University, where she teaches and chairs the Department of Musicology/Composition/Theory. She is the founder and past director of the MidAmerican Center for Contemporary Music and co-directs the Annual New Music & Art Festival. She continues to be active as a pianist and clinician with saxophonist John Sampen. In 2001 she was named a Distinguished Artist Professor of Music.

Stuart Saunders Smith →*229* was born in 1948 in Portland, Maine. His music is performed regularly throughout the world. His music is recorded on o.o.Discs, 11 West Records, Centaur Records and numerous European labels. He has received the Maryland State Artists Fellowship, The National Endowment for the Arts Composer's Fellowship, and Atlantic Center for the Arts Master Artist Award. Smith's music is published by Sonic Art Editions (Smith Publications). A book entitled *The Music of Stuart Saunders Smith*, by John Welsh, was published by Excelsior Press, in 1997.

Juan María Solare →*230* was born in Buenos Aires in 1966. Solare is a pianist, composer, and conductor; he also composes music for short films and internet animations. A recipient of the German Academic Exchange Service Scholarship, Solare has studied extensively in both his native Argentina and in Germany. Currently, he is completing a PhD in music education at the Universidad Complutense de Madrid, Spain. From 1986 until 1993, Solare taught Harmony, Morphology and Chamber Music at the Conservatory of Tandil in Argentina. Since January 2002 he has been a piano teacher at the Musikschule and the Hochschule fur Kunste, both in Bremen, Germany. Since October 2002, Solare has conducted the Orquesta no típica, a chamber music group devoted to tango music at the University of Bremen. He also gives courses and lectures on contemporary music.

Mathias Spahlinger →*231* was born 1944 in Frankfurt A.M. Before he began to study piano, he worked as a typesetter. Between 1973 and 1977 he studied composition at the Stuttgart College of Music. In addition to his studies, Spahlinger was active as a piano teacher and as an instructor of early musical education at the Stuttgart School of Music. From 1978 to 1981, Spahlinger acted as a guest lecturer at the University of the Arts, Berlin. Starting in 1982, Mathias held a professorial post in composition and music theory at the College of Music in Karlsruhe. Since 1990 he has been teaching as a professor of composition at the Freiburger College of Music, where he also leads the Institute for New Music.

Jack W. Stamps →*232* has devoted a lifetime to pursuing a variety of musical activities. He has spent the past 20 years as a songwriter and recording artist. His dedication to music has guided his ongoing commitment to the intrusion of classical norms in pop culture. He has received commissions from such artists and groups as the UTSA Wind Ensemble, the Tosca String Quartet, and clarinetist Stephanie Key. His music has been performed at numerous festivals and conferences including the ICMC, Society of Composers, Inc., LaTex, SEAMUS, and the South Texas New Music Festival. He was the recipient of the 2004 Reed Holmes Memorial Prize in Composition, the 2004 UTSA Citation for Excellence in Technology in Music, and second prize at the CEMJKO 2006 electronic festival in Brazil. He earned an MM in Composition from the University of Texas at Austin, and a BM from the University of Texas at San Antonio. He has a particular interest in developing new forms of musical notation through graphic design. He lives in San Antonio, TX.

John Stead →*234* has produced concert music, environmental sound installations, son et lumieres, film music, and web media, which has been performed around the UK. A love of nature, natural sounds, and sacred music results in a palette that includes transformed sounds (through the use of computer technology), synthetic sounds, natural environmental sounds, and conventional instrumentation. The overwhelming influence in Stead's creative life is that of Olivier Messiaen.

Norbert Stein →*235* studied saxophone at the conservatory in Cologne in the 1970s. In 1986, he established the Pata Music label, in order to document his work with a variety of ensembles: Pata Masters, Pata Generators, Pata Orchester, Pata Horns, Pata Trio, and Pata Blue Chip. Besides performing in Europe, Stein has had several concert tours in Brazil, Africa, Australia, Singapore, and Indonesia, in cooperation with the Goethe-Institute. These international musical collaborations are documented on various Pata CDs.

Hans-Christoph Steiner →*236* spends his time designing interactive software with a focus on human perceptual capabilities, building networks with free software, and composing music with computers. He teaches at Polytechnic University's Integrated Digital Media Institute and NYU's Interactive Telecommunications Program. His solo work has been performed

inside the Croton Aqueduct, and inside the Atlantic Avenue Tunnel. Group projects that he has collaborated on have been exhibited at Lille2004 European Cultural Capitol Festival, Robodock, Wood Street Gallery, Joyce SOHO, and Scope Art Fair. He has given talks at ITP/NYU, LocationOne, Tama Art University, Geidai Tokyo National University, and dorkbot-nyc. Steiner received his Masters from NYU's Interactive Telecommunications Program. He is currently working on developing full-fledged visual programming platform and free, open-source media arts curricula and teachers' guides.

Peter Sterk →*238* was born in The Netherlands in 1957. He studied composition and electronic music at various Dutch conservatories. He has written music for several different instrumental combinations. The inspiration for Sterk's work often comes from natural forms and processes. In recent years, improvised music has been Sterk's main focus. He has worked with the Rotterdam Improvisation Pool. Since 2003 he has been performing as a member of the improvisation trio Lontano, playing piano, cello, and electronics. Currently Sterk is developing an improvisational method for amateurs: "Music from the inside."

Karlheinz Stockhausen →*240* (1928-2007) composed 319 works and published 10 volumes of *TEXTE zur MUSIK / TEXTS about MUSIC*, comprising sketches and explanations about his own works (Stockhausen-Verlag). In 1991, the Stockhausen-Verlag began to release compact discs in the Stockhausen Complete Edition, which comprises 125 compact discs to date, and all Stockhausen scores, books, videos, and CDs are also available. Since 1998, the Stockhausen Courses Kürten for composers, interpreters, musicologists, and auditors takes place annually. Stockhausen was the perfect example of the composer who has participated at nearly all world premières and in innumerable exemplary performances and recordings of his works worldwide—as conductor, performer, musical director, or sound projectionist. In addition to numerous guest professorships in Switzerland, the US, Finland, Holland, and Denmark, Stockhausen was appointed Professor for Composition at the State Conservatory in Cologne in 1971, in 1996 was awarded an honorary doctorate from the Free University in Berlin, and in 2004 received an honorary doctorate from the Queen's University in Belfast. He is a member of 12 international Academies for the Arts and Sciences, was named Honorary Citizen of Kürten in 1988, became Commandeur dans l'Ordre des Arts et des Lettres, received many gramophone prizes and, among other honors, the German Medal of Merit, 1st class.

John Stump →*242* (1944-2006) was born in Kansas City, Missouri. Shortly after the end of WWII, his father found work in California and settled his family in the Lakewood area of Southern California. At Lakewood High School, Stump played French horn in the marching band and orchestra. At Long Beach City College he studied composition and orchestration, arranging music for various instrumental and vocal groups. After graduating, Stump was reluctant to bring any further attention to his music. Instead, he took up the trade of music engraving. Combining a sensitivity to graphic art with his knowledge of music notation, he began to create and market a number of challenging works. Stump was also active in collecting circles, specializing in classical music, the Beatles, the Beach Boys and a number of female vocalists of his era including Karen Carpenter and Dionne Warwick.

Chiyoko Szlavnics →*244* is a Canadian composer based in Berlin. She has performed extensively in and composed for experimental contemporary music ensembles and projects in Europe and North America. She received a Fellowship Grant from the Akademie Schloß Solitude in 1997. Her compositions have been performed in concert and on radio by such ensembles as Arraymusic, Ensemble Zwischentöne, Janacek Philharmonic Orchestra, New Music Concerts, Quartett Avance, Quatuor Bozzini, Surplus, and Wandelweiser, at festivals such as MaerzMusik, Interface Festival, Ostrava New Music Days, and the Darmstadt Ferienkurse.

T

Yuji Takahashi →*246* was born in 1938 in Tokyo, Japan, and is a composer, performer, pianist, and author. He is, along with fellow composers Toshi Ichiyanagi and Kenji Kobayashi, the co-founder of the New Directions group, an ensemble devoted to New Music. For many years, Takahashi was known, along with only a few other pianists, as someone able to decipher and play the most difficult new works for piano. While teaching piano in the US in the 1970s, Takahashi began to compose electronic works. Upon his return to Japan in 1972, Takahashi was involved in organizing and performing with like-minded groups of musicians, particularly the Suigyu (Water Buffalo) Band. Since the 1990s, Takahashi has been incorporating both traditional Japanese instruments and vocal performance into his works, as well as computer and piano. An innovator in notation, and a proponent of free performance, Takahashi received a Grant from the Foundation for Contemporary Arts in New York in 2006.

Justinian Tamusuza →*248* was born in 1951 in Kibisi, Uganda. His early musical training was in Kigandan traditional music: singing, playing drums and tube-fiddle, endingidi. He received his doctorate in composition at Northwestern University in Evanston, Illinois. Tamusuza served from 1993 to 1995 as a member of the Music Jury of the International Society of Contemporary Music, ISCM. He is the African representative for the Composers Guild of New Jersey and was most recently a member of the International Council for africa95. Tamusuza was the Artistic Director of the africa95 African Composers Workshop in the UK, hosted by the Royal Liverpool Philharmonic Orchestra and the Liverpool University in 1995. Tamusuza has taught music composition, theory, and analysis at the Department of Music, Dance and Drama at Makerere University in Uganda and has also held a professorship at the School of Music at Northwestern University. The Kronos Quartet CD *Pieces of Africa* features Tamusuza's first string quartet, "Mu Kkubo Ery'Omusaalaba." The CD reached No. 1 on the Billboard Classical and World Music Charts in 1992. Tamusuza has been completing new works for the traditional Ugandan group, Abaana B'Engoma since the mid-1990s.

John Tchicai →*249* has been continuously progressive throughout his life. Born in Copenhagen, Denmark, in 1936, Tchicai became a leading exponent of the jazz avant-garde in New York in the 1960s, and a father figure for the European avant-garde after that. The Danish ministry of Culture recognized his work by awarding him a lifetime grant. Tchicai has played with the greats in the field of jazz music, including John Coltrane, Don Cherry, Archie Shepp, John Lennon/Yoko Ono, Johnny Dyani, Roswell Rudd, Albert Ayler, and Dollar Brand. Poetry and audience-participation are often part of a Tchicai performance.

James Tenney →*250* was born in 1934 in Silver City, New Mexico, and grew up in Arizona and Colorado, where he received his early training as a pianist and composer. He attended the University of Denver, the Juilliard School of Music, Bennington College, and the University of Illinois. A performer as well as a composer and theorist, Tenney was co-founder and conductor of the Tone Roads Chamber Ensemble in New York City. He was a pioneer in the field of electronic and computer music, working with Max Mathews and others at the Bell Telephone Laboratories in the early 1960s to develop programs for computer sound-generation and composition. He has written works for a variety of media, both instrumental and electronic, many of them using alternative tuning systems. Tenney is the author of articles on musical acoustics, computer music, and musical form and perception, as well as two books: *META + HODOS: A Phenomenology of 20th-Century Musical Materials and an Approach to the Study of Form* and *A History of "Consonance" and "Dissonance."* He has received numerous grants and awards, including those from the National Science Foundation, the National Endowment for the Arts, the Ontario Arts Council, the Canada Council, and the Jean A. Chalmers Foundation.

Voya Toncitch →*252* is a French concert pianist, musicologist, and composer. He has given numerous concerts, recitals, lecture-recitals on aesthetics and philosophy of contemporary music, and piano master-classes worldwide, on every continent but Antarctica. Toncitch has recorded for broadcasting companies in Europe, North America, South America, Asia, and Australia. His musicological essays, all written in French, are published in many nations, and their titles are quoted as reference works in encyclopedias, such as *The New Grove Dictionary of Music*, *Grove Dictionary of American Music*, *Das Grosse Lexicon der Musik Herder*, and many more. Toncitch's own compositions for orchestra, chamber ensembles, choir, and solo instruments are published in Germany. He has sponsored competitions for scholarships for musicians from developing countries, which are organized by French diplomatic and cultural services in India, Paraguay, and the Philippines. In 1981, he founded the music department at the French Cultural Centre/Alliance Française in Calcutta, and in 1983 the Contemporary Music Library in Asuncion, Paraguay. Toncitch is also an accomplished painter.

Laura Toxvaerd →*253* is a Danish composer and alto saxophonist, born in 1977, on the outskirts of Copenhagen, Denmark. Toxvaerd was brought up in the tradition of jazz music. Her particular interests became avant-garde and free jazz, and eventually more contemporary music. Toxvaerd feels that graphic scores encourage both conductor and musicians to let go of traditional musical conventions. Another of her interests is exploring the possibilities of the solo concert. This is reflected on her debut CD, *Laura Toxvaerd no. 1*, which contains 15 pieces for solo alto saxophone, all performed by her. Toxvaerd earned a degree in music performance and education from the Rhythmic Music Conservatory in Copenhagen and has done additional studies at the Conservatoire National Supérieur de Musique et de Danse de Paris.

Jeffrey Treviño →*256* was born in 1983, in Oxnard, California. He is a PhD student in music composition at the University of California at San Diego, having graduated in 2005 with a BA in Music, Science, and Tech-

nology from Stanford University. An accomplished pianist and tubist, Treviño has performed in world-class venues such as Carnegie Hall, the Sheldonian Theatre, and the Sydney Opera House. In 2005, Treviño debuted the SCUBA, a robotically augmented concert tuba, at the International Conference on New Interfaces for Musical Expression in Vancouver. As a musicologist, he has received fellowships from the Andrew W. Mellon Foundation and the American Musicological Society in support of his work on Hollywood film and cartoon music composer Charles Ives, and philosophies of musical expression in contemporary instrument design. Treviño's pedagogical efforts were recognized with the Department Award for Excellence in Graduate Teaching. Recent composition commissions include the University of California at Berkeley Graduate Program in Media Studies.

Andrea Valle →*258* born in Ciriè, Italy, and is a composer and a researcher. His interest in music composition began with his experiences as an electric bass player in experimental rock and free jazz formations. His devoted interest in algorithmic composition both for acoustic and electronic instruments has led him to the development of computer-based, algorithmic strategies for automated typesetting, both using standard notation and designing new ones. His works include music for film and multimedia projects. He earned a PhD in Semiotics at the University of Bologna and he is now a researcher at the Multimedia School of the University of Torino. Valle is the author of two books, respectively dedicated to audio processing and to contemporary musical notation, and of many papers and articles related to semiotics and music.

J. Simon van der Walt →*261* is a composer, multi-instrumentalist and teacher, of English and South African descent, now settled in Scotland. Originally a self-taught jazz trumpet player, his career took off following two years of study at Napier University, where he achieved a course medal, a composition prize, and diplomas in trumpet and composition. He took up a teaching post at Stevenson College Edinburgh, which supported him in further private study leading to an FLCM in composition, and a teaching qualification from the University of Dundee. In the spring of 2003, van der Walt undertook a three-month residency at the Banff Centre in Alberta, with financial support from the Arts Council of England. This experience led him to formulate and crystallize a question that lies at the heart of his current practice, and forms the basis of his PhD research at the RSAMD: "If one starts by considering an ensemble as a collection of performers rather than a collection of instruments, and the performance area as an undiscovered space, what musical consequences follow?"

Ivan Vincze →*262* was born in 1930 in Bratislava. In 1946, he began his studies of music at the Stadtische Musikschule. After having finished his studies at the State Conservatory, he continued to study at the Akademie fur Musik und Drama, where he trained to be a professional violist. As a violist, Vincze has belonged to orchestras in Germany, Austria, Sweden, and Denmark. In 1982, he became a member of GIM—the Group for Intuitive Music. Now, after more than 20 years, and the founding of the Bela Hamvas Group for Intuitive Music, his efforts are above all directed toward inventing new forms for his test-notated and graphic pieces. Vincze believes that such compositions acquire their meaning only when carried out, through a co-shaping by wonderful musicians; from them, collective action results, causing a higher level of consciousness.

Stephen Vitiello →*262* is an electronic musician and sound artist who transforms incidental atmospheric noises into mesmerizing soundscapes that alter our perception of the surrounding environment. He has composed music for independent films, experimental video projects, and art installations. Recent solo exhibitions include Museum 52, London; The Project, New York; Galerie Almine Rech, Paris; and The Project, Los Angeles. Group exhibitions include the 2006 Biennal of Sydney, the 2002 Whitney Biennial, and several exhibitions at the Cartier Foundation, Paris. Vitiello has had performances at The Tate Modern, the San Francisco Electronic Music Festival, The Kitchen, and the Whitney Museum of American Art. Vitiello has also acted as Media Curator for many exhibitions.

Douglas C. Wadle →*263* was born in 1977. His works have followed two dominant streams of production: manipulations of harmonic pitch space and experiments in extreme forms of graphic notation. Wadle actively performs as a member of a quartet of research-oriented improvisers under the direction of choreographer/poet Simone Forti that includes theater artist Terrence Luke Johnson and choreographer Sarah Swenson. Wadle holds an MA in Ethnomusicology from the University of California, Los Angeles, and an MFA in Music Composition from the California Institute of the Arts.

Jennifer Walshe →*268* was born in Dublin, Ireland. She studied composition at the Royal Scottish Academy of Music and Drama. In 2002, she graduated from Northwestern University with a doctoral degree in composition; from 2003-2004, she was composer-in-residence at the National Sculpture Factory, Cork, and she was a fellow of the Akademie Schloss Solitude, Stuttgart. From 2004-2005 she lived in Berlin as a guest of the DAAD Berliner Künstlerprogramm. Her works have been performed throughout Europe, the US, and Canada by groups such as Alter Ego, Ensemble Récherche, Ensemble Resonanz, Apartment House, and Q-02, among others. She has received numerous commissions, including those from RTÉ, Westdeutscher Rundfunk (WDR), Sudwest Rundfunk (SWR), the Irish Chamber Orchestra, Crash Ensemble, the Project Arts Centre, and the National Concert Hall, Ireland, as well as commission awards from the New Music Scheme of the Arts Council of Ireland and the Scottish Arts Council. In addition to her activities as a composer, Walshe performs frequently as a vocalist, specializing in extended techniques.

Clive Wilkinson →*272* studied composition at the Universities of York and Keele. He also received bursaries to study at Dartington International Summer School. In 1990, he was an Artist-in-Residence at the Banff Centre for the Arts, Canada. He is currently Lecturer in Contemporary Music at the Northern School of Contemporary Dance, Leeds. During November and December 2002 he worked with the British choreographer Debbi Purtill on *Gothic Belle*, which was performed at The Riley Theatre, Leeds to critical acclaim. Wilkinson's music is published by Frog Peak Music.

Michael Winter →*273* is a composer and guitarist who has studied and honed his skills across the US and has worked with some of the masters of contemporary composition. He is an expert in the field of electronic music and composition, and has taught a full electronic music and technosonics curriculum at CalArts, the University of Virginia, and the University of California at Santa Barbara, where he is currently a PhD candidate.

René Wohlhauser →*274* was born in Brienz, Switzerland. He studied at the Basel Conservatory. In 1978, Wohlhauser won the Valentino Bucchi Composition Prize, Rome, for his piece, *Souvenirs de l'Occitanie* for solo clarinet, starting a long stream of prizes won for his compositions. He has had many performances in Switzerland and abroad, including Germany, Japan, France, Italy, Russia, and Canada. He has several journal publications on compositional, aesthetic, and philosophical aspects of new music. He co-founded the Basle Composer's Forum with Mathias Steinauer. Wohlhauser has been a teacher of music theory and composition at the Basle Music Academy since 1979. Currently, he lives as a freelance composer in Basle.

Ge-Suk Yeo →*276* is a singer, electro-acoustic musician, composer, and visual and video artist who works in both Hamburg, Germany, and Seoul, South Korea. As a talented lyric-dramatic soprano, she is a novelty in the fields of electro-acoustic music and media art. Her compositions and ideas for sound she notates as sound-calligraphies. In her live performances, Yeo synthesizes unique musical experiences through combining elements from various parts of her artwork.

David Young →*277* has had his music performed in Australia, Europe, and Asia, in concerts, music theatre and installation. As a composer he is preoccupied with exploring the relationship between sound and image, employing intricate, and often miniature, formats in unconventional settings. As artistic director of Aphids, Young composes for and co-curates cross-art-form projects. He led the Aphids residency at the MUSiCLAB program at Bains::Connective. *Maps*, a music-theatre-film-text collaboration between Aphids and its sister company in Denmark, has had performances in Melbourne (November 2000) and Copenhagen

(October 2002); and Music at Mt Egerton in an old clay mine in regional Victoria, Australia. He then produced *A Quarreling Pair at La Mama* as part of the 2004 Melbourne International Arts Festival, which has sold out three subsequent seasons.

Katherine Young →*278* is a composer and bassoonist who writes acoustic and electro-acoustic music, often using open forms and expressive, non-traditional notations. She enjoys collaborative work as well. A versatile performer, Young works as an interpreter of contemporary chamber music, improvises, and plays with rock bands; she performs with the duo Architeuthis Walks on Land, the trio Civil War, James Falzone's Allos Consort, and Roommate. The Katherine Young ensemble is her ensemble including Carol Genetti, Brian Labycz, Joseph Mills, and Jason Roebke. Young is a founding member of the contemporary chamber music collective Till by Turning. She is currently living in Connecticut, working on her Master's in composition at Wesleyan University. Young graduated with bassoon performance and comparative literature degrees from Oberlin College and Conservatory.

Judith Lang Zaimont →*282* is internationally acclaimed for her works' expressive strength and dynamism. Many of her 100 works are prize-winning compositions; these include three symphonies, chamber opera, music for wind ensemble, oratorios and cantatas, and other works for chorus, compositions for voice, solo instruments, and a wide variety of chamber music. Her composition awards include a Guggenheim Fellowship, commission grants from the National Endowment for the Arts and American Composers Forum, a 2003 Aaron Copeland Award and 2005 Bush Foundation Fellowship. Zaimont's music is frequently played in the United States and abroad and has been programmed by ensembles such as the Philadelphia, Baltimore, and Mississippi symphony orchestras, the Berlin Radio Orchestra, Czech Radio Orchestra, Kremlin Chamber Orchestra, Kharkov Philharmonic, and the Women's Philharmonic. Her works are widely published and recorded, extensively researched, have served as competition repertoire for international piano and conducting competitions, and two are cited on the Century Lists of Piano International and Chamber Music America. After a distinguished career as an educator (Peabody Conservatory, CUNY, Adelphi University and the University of Minnesota).

Edson Zampronha →*283* has received two awards from the São Paulo Association of Art Criticism, Brazil. In 2005 he won, together with SCIArts Group, the 6th Sergio Motta Award, the most outstanding prize on Art and Technology for the musical installation composition, *Poetic Attractor.* He has received commissions from different groups and institutions, such as the Museum für Angewandte Kunst, Köln, for the Soccer World Cup 2006, and from the São Paulo State Symphonic Band for the 100th anniversary of São Paulo State Gallery in 2005. He has worked as a guest composer in different institutions as LIEM-CDMC in Madrid, the Phonos Foundation in Barcelona, and the University of Birmingham. His compositions are included in many CDs released by different record labels and institutions. He is Professor of Musical Composition at the São Paulo State University. He has a PhD in Communication and Semiotics Arts from the Pontifical Catholic University of São Paulo. He is the author of the book *Notação, Representação e Composição.*

Peter Zombola →*284* was born in 1983 in Budapest, Hungary. He studied composition at the Béla Bartók Conservatory. He also studied at the Liszt Ferenc Academy of Music, were he received degrees with honors in composition and music theory in 2006. He is a candidate for a PhD from the Liszt Ferenc Academy of Music. In 2001, Zombola achieved 2nd place at the Béla Bartók Composition Contest, and in 2003 he received 2nd place at the International Summer Composition Course in Austria. In 2004, he won 2nd place at the Liszt Ferenc Academy of Music Composition Contest and 2nd place at the István Vántus Composition Contest in Szeged. His regular premiers take place at the Budapest Autumn Festival, Budapest Spring Festival, Music of Our Day, and Budapest Music Weeks. Zombola has been teaching since 2004 at the University of Theater and Film.

Jonathan Zorn →*285* is a composer and performer of electro-acoustic music. In his compositions, he creates interactive systems for acoustic and electronic instruments that exceed the control of any single participant, creating surprises and new ensemble dynamics for performers to explore and navigate. Zorn maintains ongoing collaborative projects with video artist/violinist Rachel Thompson, bassoonist/composer Katherine Young, bassist Andrew Lafkas, and electronic musician Bryan Eubanks. Along with Rachel Thompson, he founded and run SET projects, a small record label of experimental and improvised sound and video art. Zorn is currently pursuing a PhD. in computer music composition at the University of Virginia.

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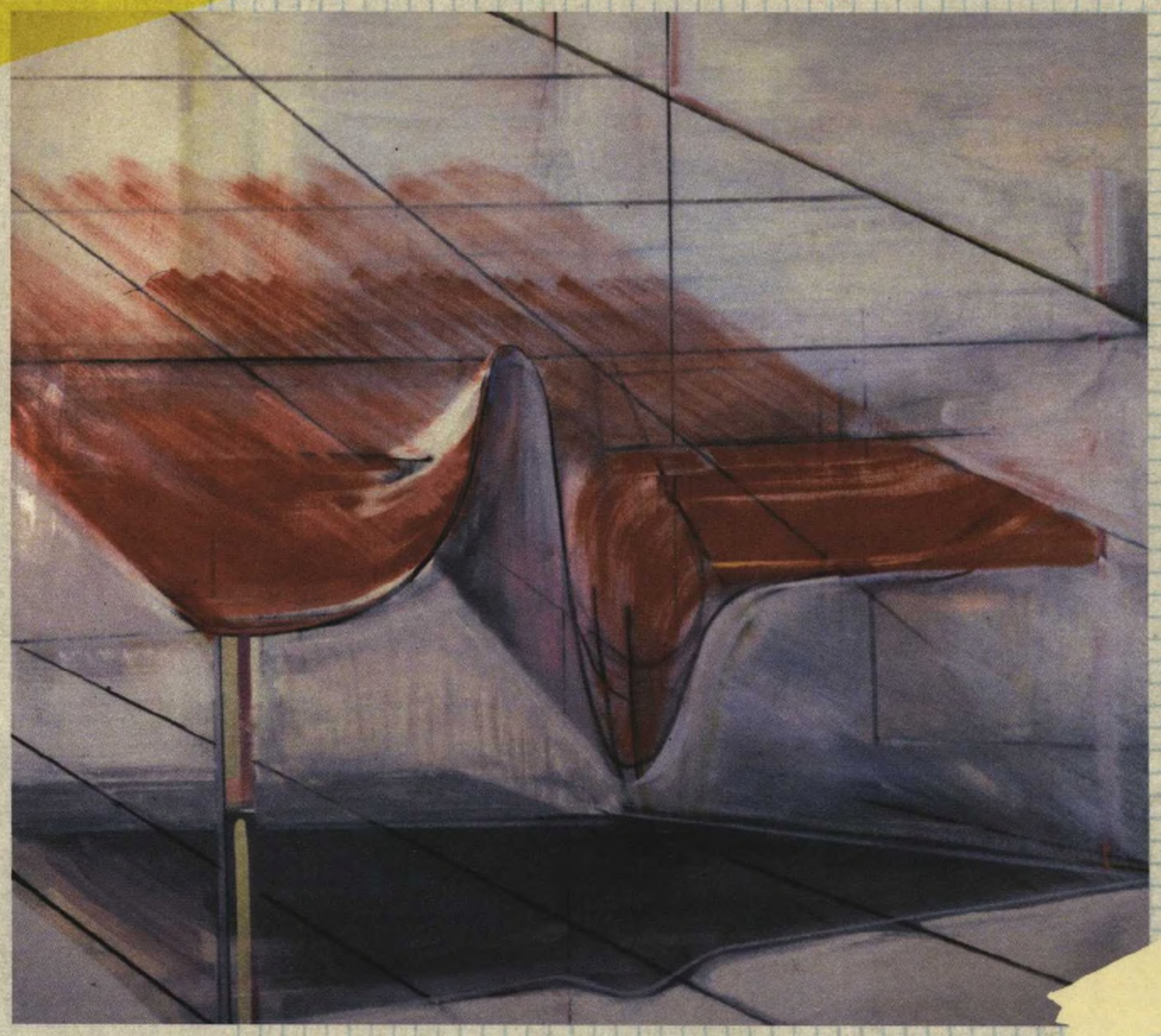

MARK
BATTY
PUBLISHER

$58.00 US | £38.00 UK | $78.00 CA
ISBN: 978-0-9795546-4-3
9 780979 554643 55800