

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-Nelsen, 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

21

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21

THERESA SAUER

MARK
BATTY
PUBLISHER

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by Theresa Sauer
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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.

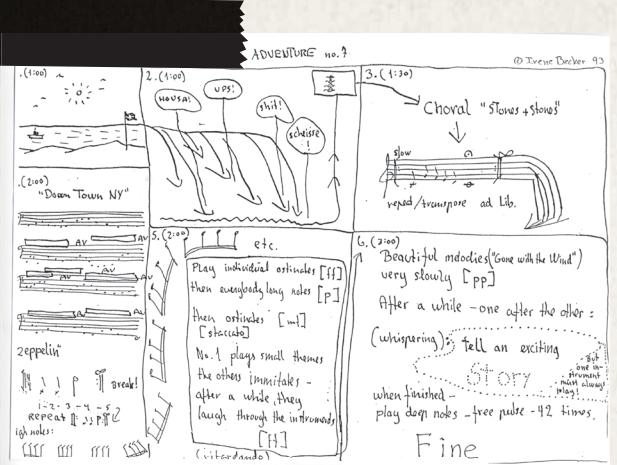
Some of the participating composers were commissioned to write essays for *Notations 21*. They were asked to use this book as an open forum, and no length or topic was specified, except that it relate somehow to notation, contemporary music, graphic scores, or the compositional process. I received a 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

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

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."

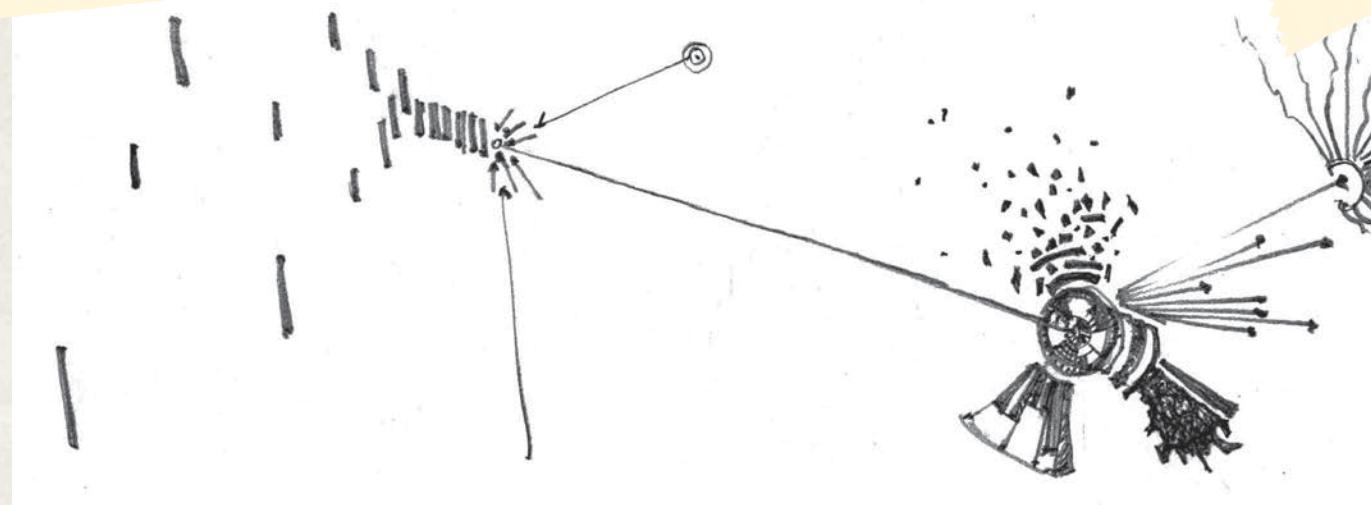
⁴ Cage, John. *Anarchic Harmony: Ein Buch Der Frankfurt Feste '92/Alte Oper Frankfurt*. Cage, John, Stefan Schadler and Walter Zimmermann. Schott, 1992.

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.

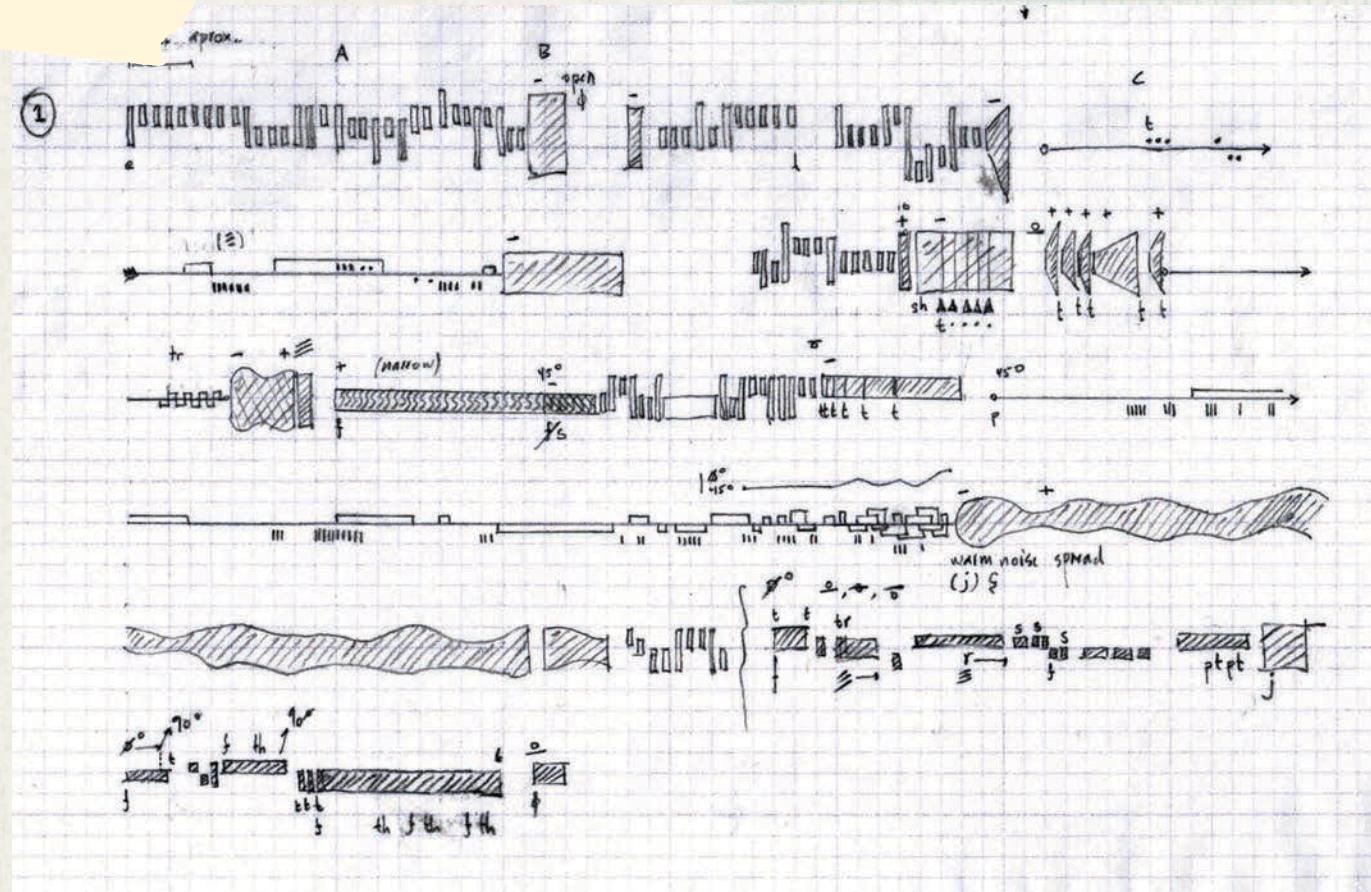
⁶ Cage, John, and Peter Gena. "After Antiquity: John Cage in conversation with Peter Gena." *Major Byrne's New Music America*, 1982.

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.



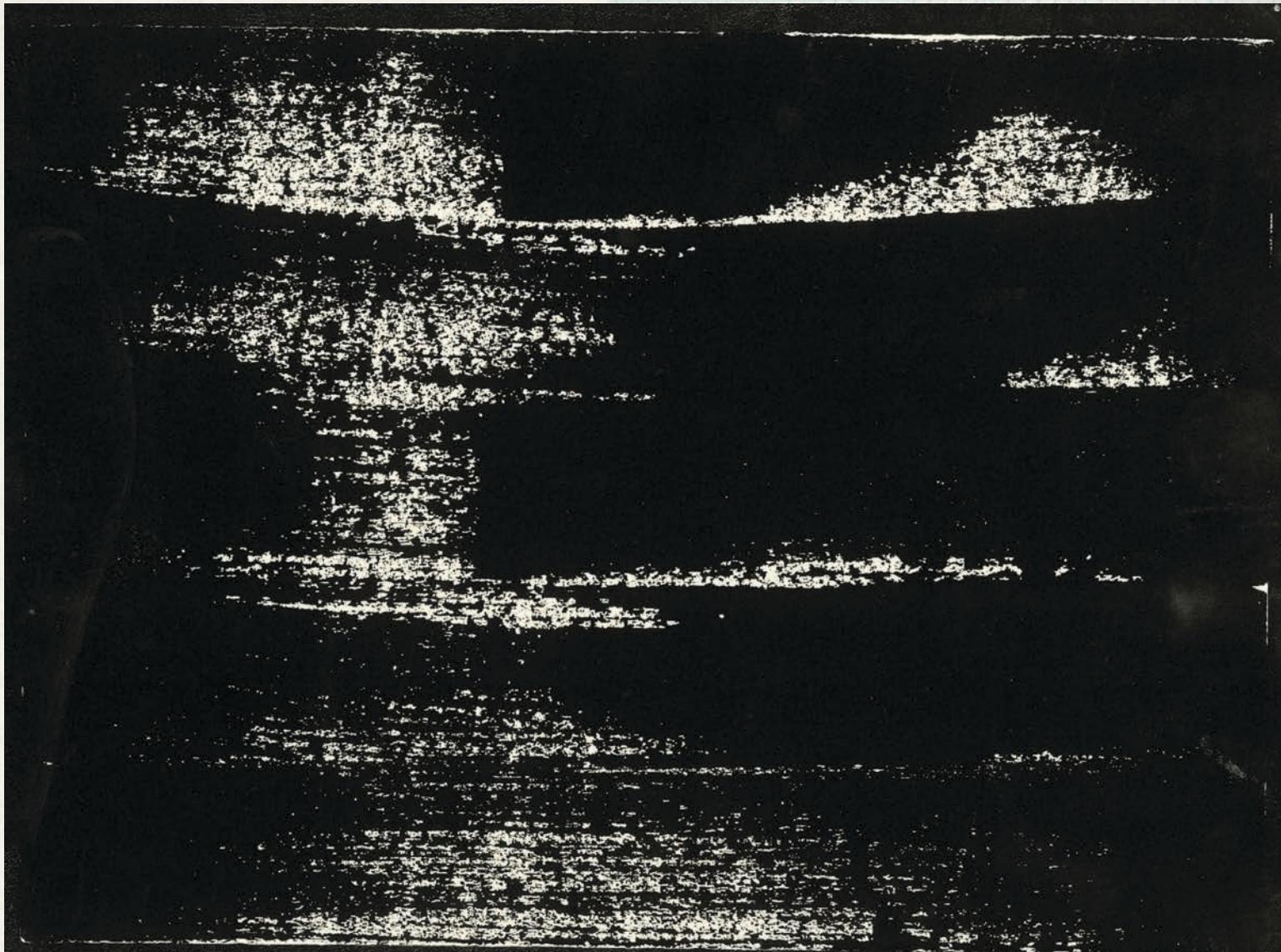
Work sketch by Victor Adan.

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:

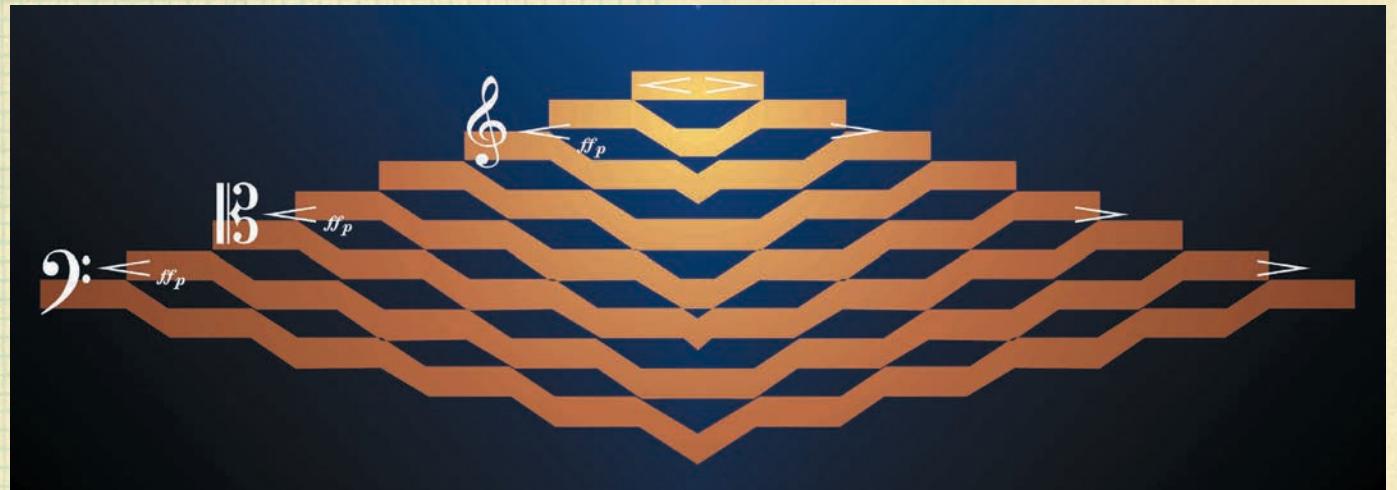
1. To serve as a kind of "aerial map," useful as an aid in understanding the overall structure of the piece during its study.
2. To serve as an analogue, although very coarse and almost cartoonish, of the general sounds resulting from the execution of the analytical score.

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

Beth Anderson; *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'accompagnait 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.

*Persona 1 ~ joy
Dancing in Space*

5A

One Becomes Two/concert v.24

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

I like to think about music (I am talking about written music) as an object that regenerates itself every time it is evoked. 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.

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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?

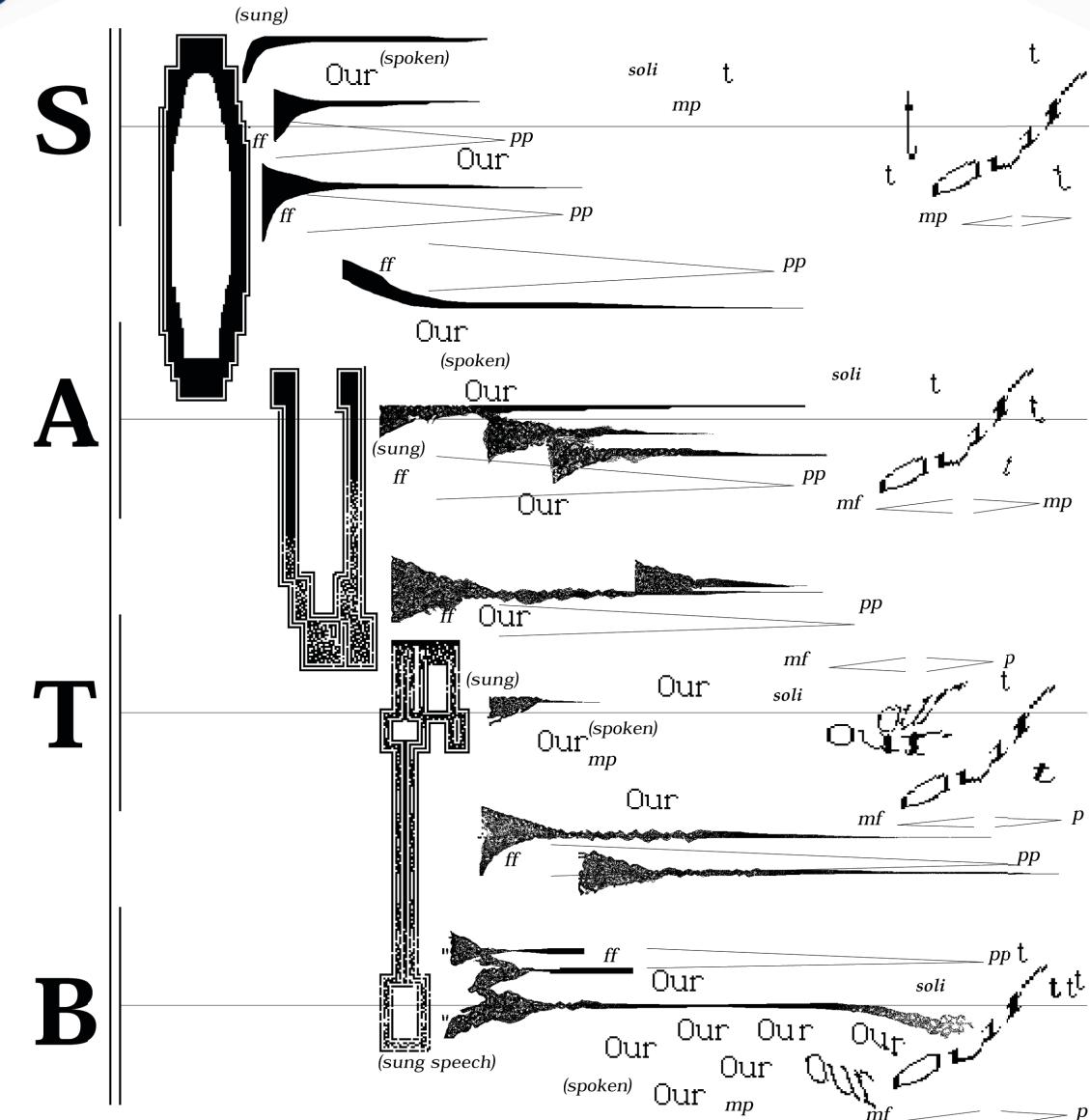
religion—life after death, immortality, etc. Mostly they are concerned with dignity. Living with dignity. And, like all of us, eventually dying with dignity.

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

"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



Our time alive is spent more and more asleep
As leap is morzpent;

P. 1

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

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

er 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"

r production, rather than a "picture" to be
alized.

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 ſ, whispered ð with t, p, k. Not a poetics of the breath. Rather an enactment of the breath. Where sibilants s, ſ, ð 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, semi-circle for types of attack. Vertical staff posi-

tions 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 de 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

February

Dennis Báthory-Kitsz

sections, continuous — no break
crossfade technique & modules

p

brush

loop on **loop xfade**

loop restart

loop fade

loop cont'd

pluck (multiple)

knock (body)

slide (nails)

pat (strings)

pat (body)

pluck (single)

snap

Northfield Falls, Vermont February 17, 2007

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

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 distort-

ed 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 ambiguized 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 catalogued 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 engravés—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 G-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 coherence. 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 musi-

cal 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.)

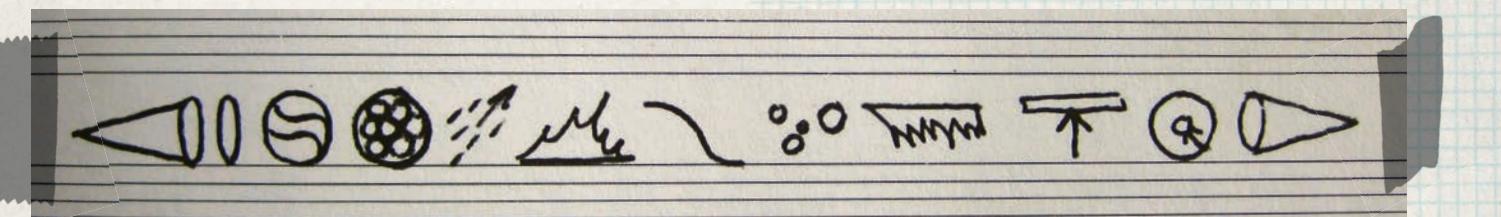
IX.

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.

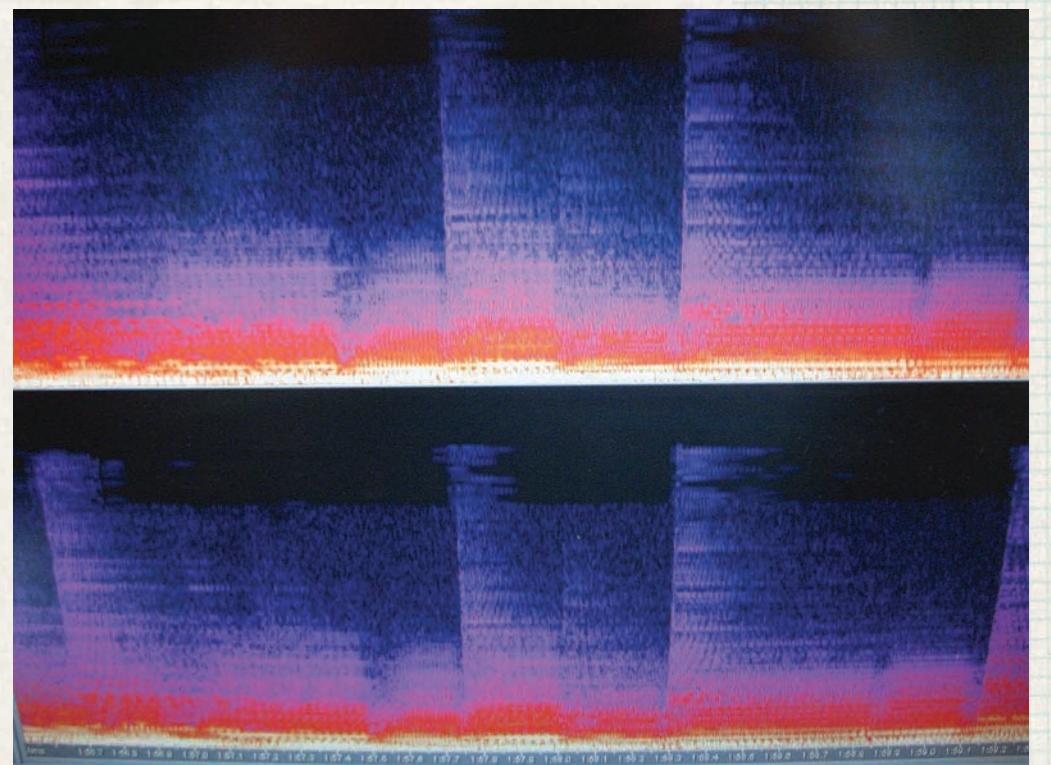
And then party like it's 1949.

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 1960s 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 pschedelic, 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 oscillographics. (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 phosphors 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.

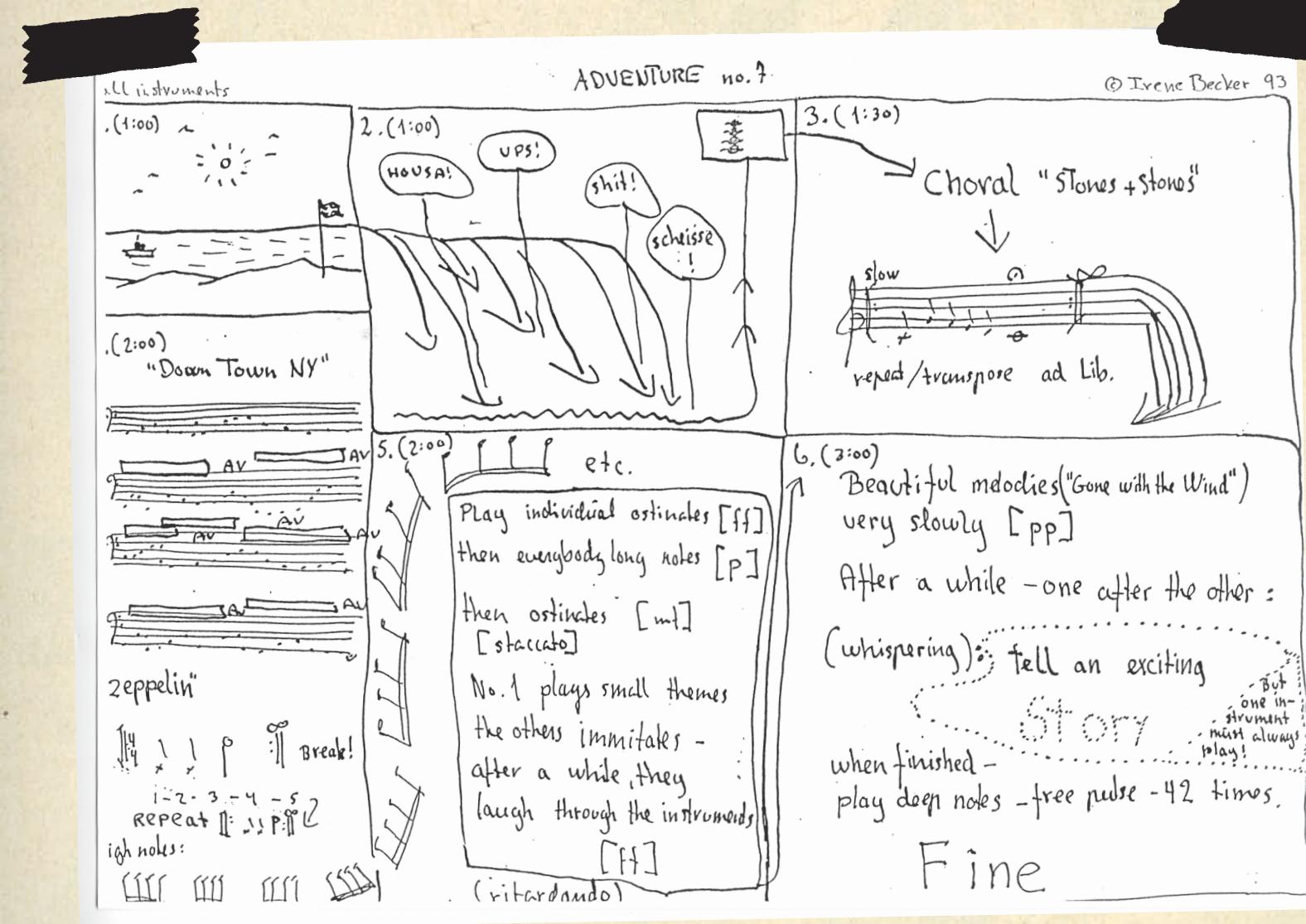
The results were very nice, and we shot hundreds of feet—tens of minutes of film—of which today I would love to get my hands on.

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.

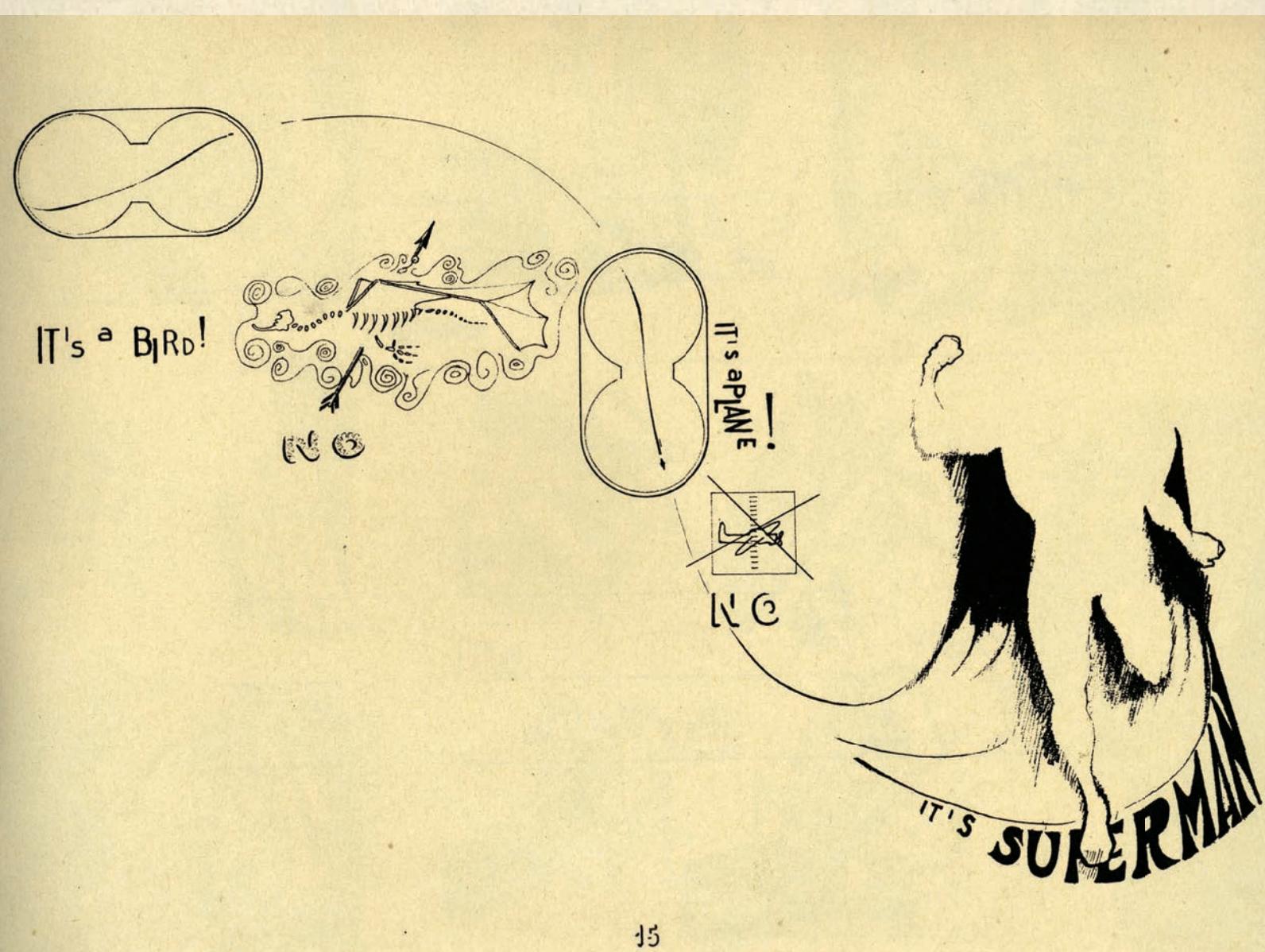


Irene Becker, Adventure No. 7. For ensemble/voices ad lib. Used by permission of Irene Becker, © 1993.

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.

By Carl Bergström-Nielsen

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.

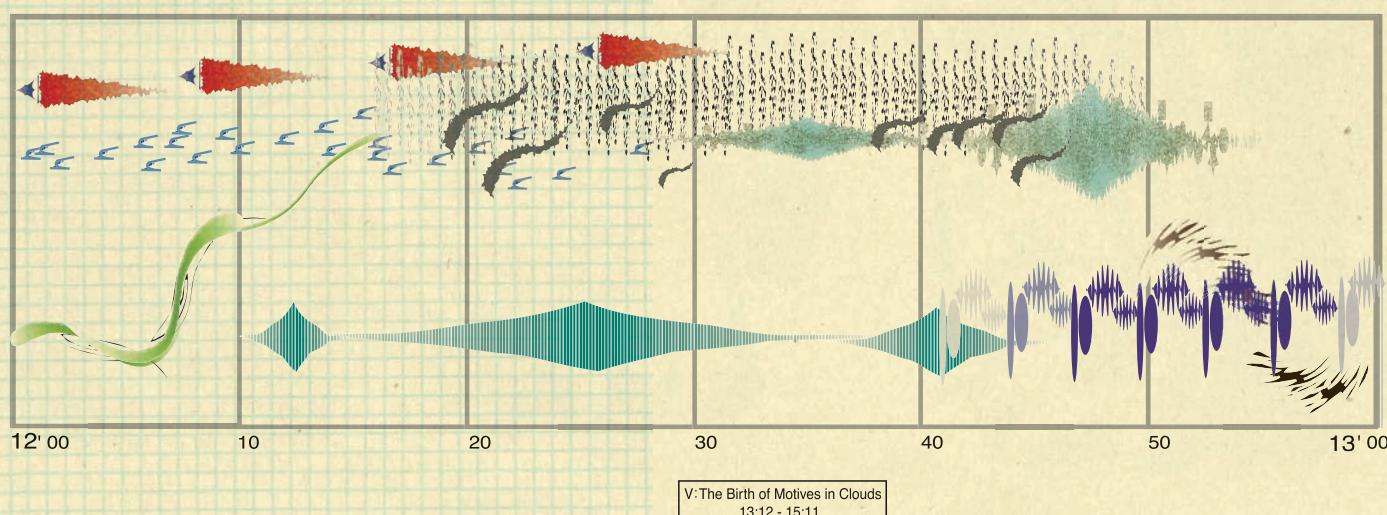
The lines enclosed by bars are to be performed as "scenes" in contrast to the basic material which is a glossary of onomatopoeia used in comic strips.

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.

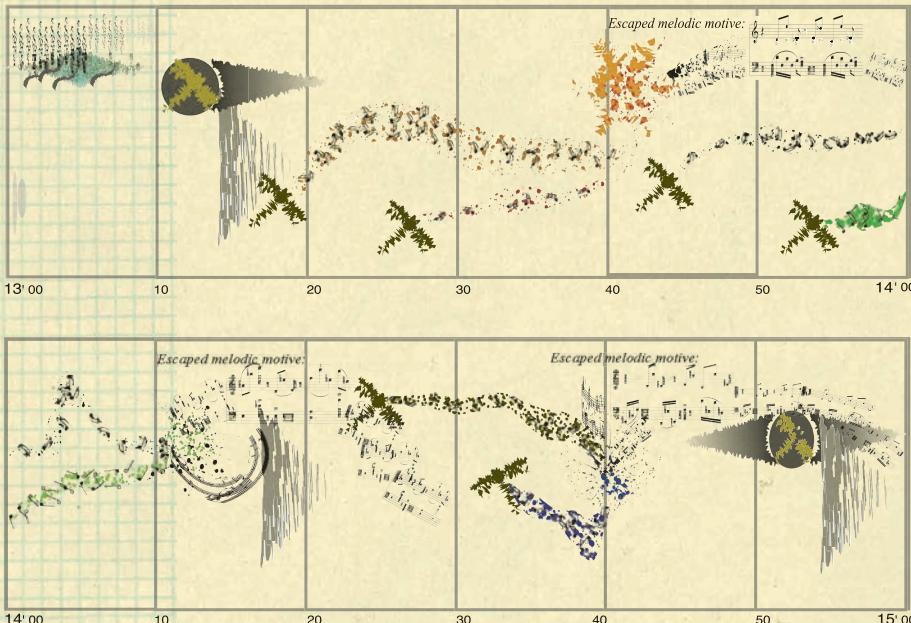
Basically, the spacing of the "sound words" indicates the timing. In performance, the entire work generally takes 6 minutes.

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.



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 com-

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

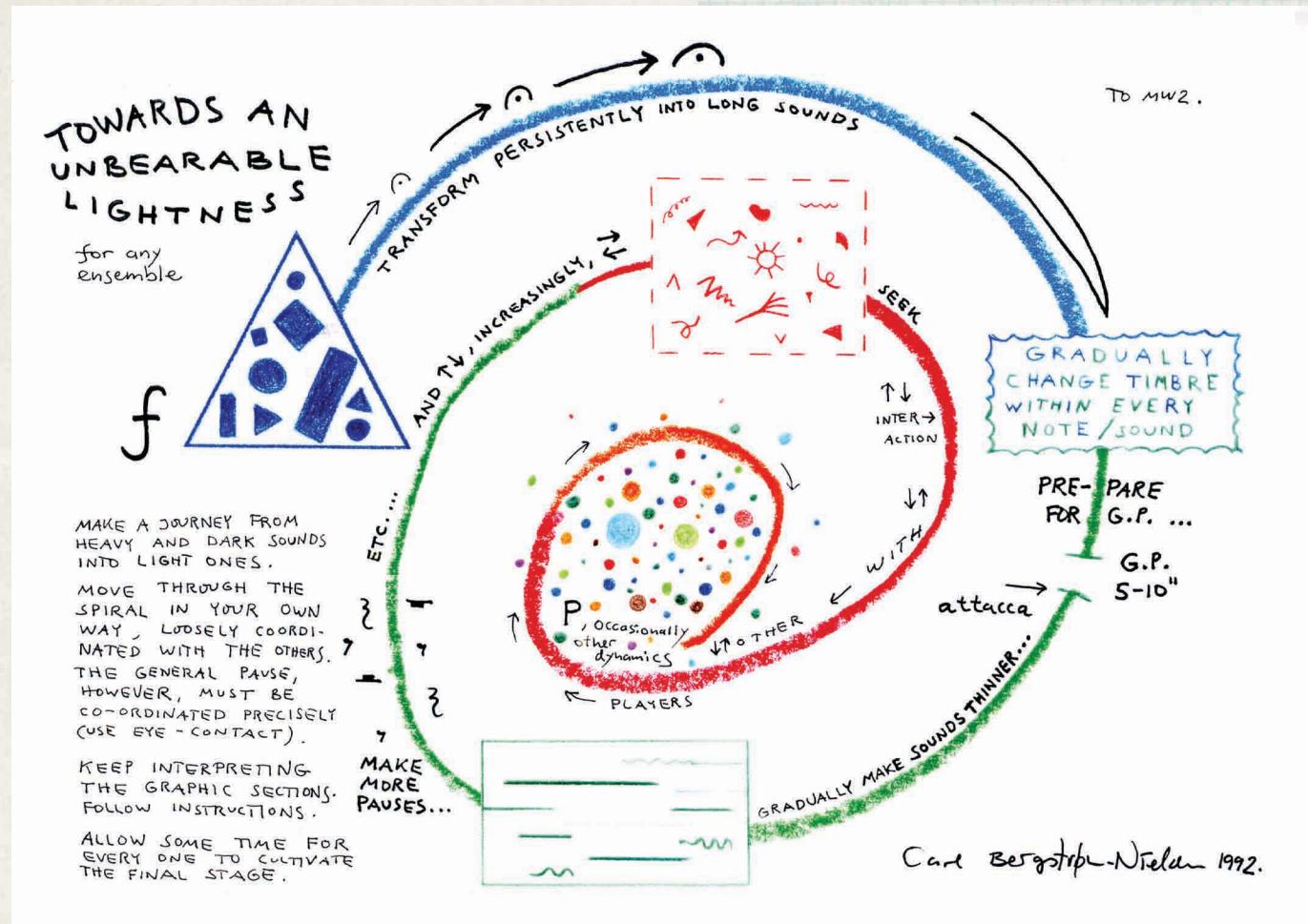
Used by permission of David Berezan, © 1999.

plete and original real-world context until "Dusk/Aftermath."

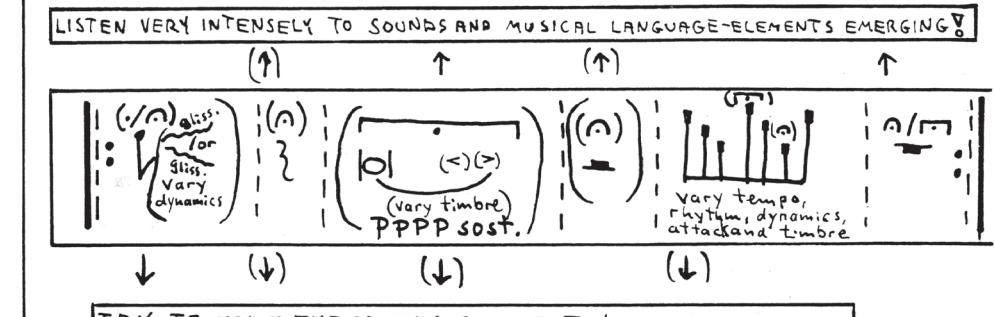
This piece was realized in the electro-acoustic studios of the Department of Music at the University of Calgary, Canada. 8-channel/8-speaker diffusion was completed using the Richmond Audio Box, a real-time diffusion and processing control environment, at a New Adventures in Sound residency program in 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 Bergström-Nielsen; *Towards An Unbearable Lightness*. For any ensemble. Used by permission of Edition Samfundet, © 1992.

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



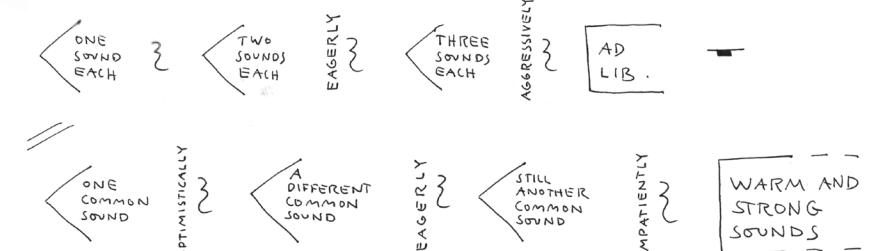
↑ = follow instructions; () = may be omitted; / = choose freely.
To be read individually for each sign.
LET THE STREAM OF SOUNDS EVOLVE AND CONCLUDE ACCORDING TO ITS OWN NATURE

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

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address above. No charge of postage to those who report of a playing experience
with Postcard-Music.

Carl Bergström-Nielsen; *Postcard Music*. For an ensemble of preferably different voices and instruments.
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FRAMEWORKS 2



EXPLANATION OF SYMBOLS

Very short section (less than 5 sec.)	Short section (less than 30 sec.)	Section with length totally ad lib.	Short break (5-10 sec.)
—	—	—	—

Carl Bergström-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: na:t but fa:v staz sa:n dɔ:l mOnIg du gla:d Ova

Buttermilk Way, eyes data-full of dust, bust horizons, time.
butamilk weI a:jz data-fU:l dv dust bust horizons ta:m

Performance notes:

- Throughout the piece, S.A. sing $\text{f} \text{o}$, T.B. $\text{f} \text{o}$
- Time-length between cues is constant - c.3" (ie $\frac{3}{160}$ d.). Singers should divide the space into corresponding time-points.

Duration: 4:00
(longer if instru-
sections are odd)

- 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 $\text{aI} = \text{æ} \text{ɒ} \text{æ} \text{eI}$

$\text{æI} = \text{æ} \text{ɛI}$ 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 gridlike.
- 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 photo-

nemes. 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.

(4)

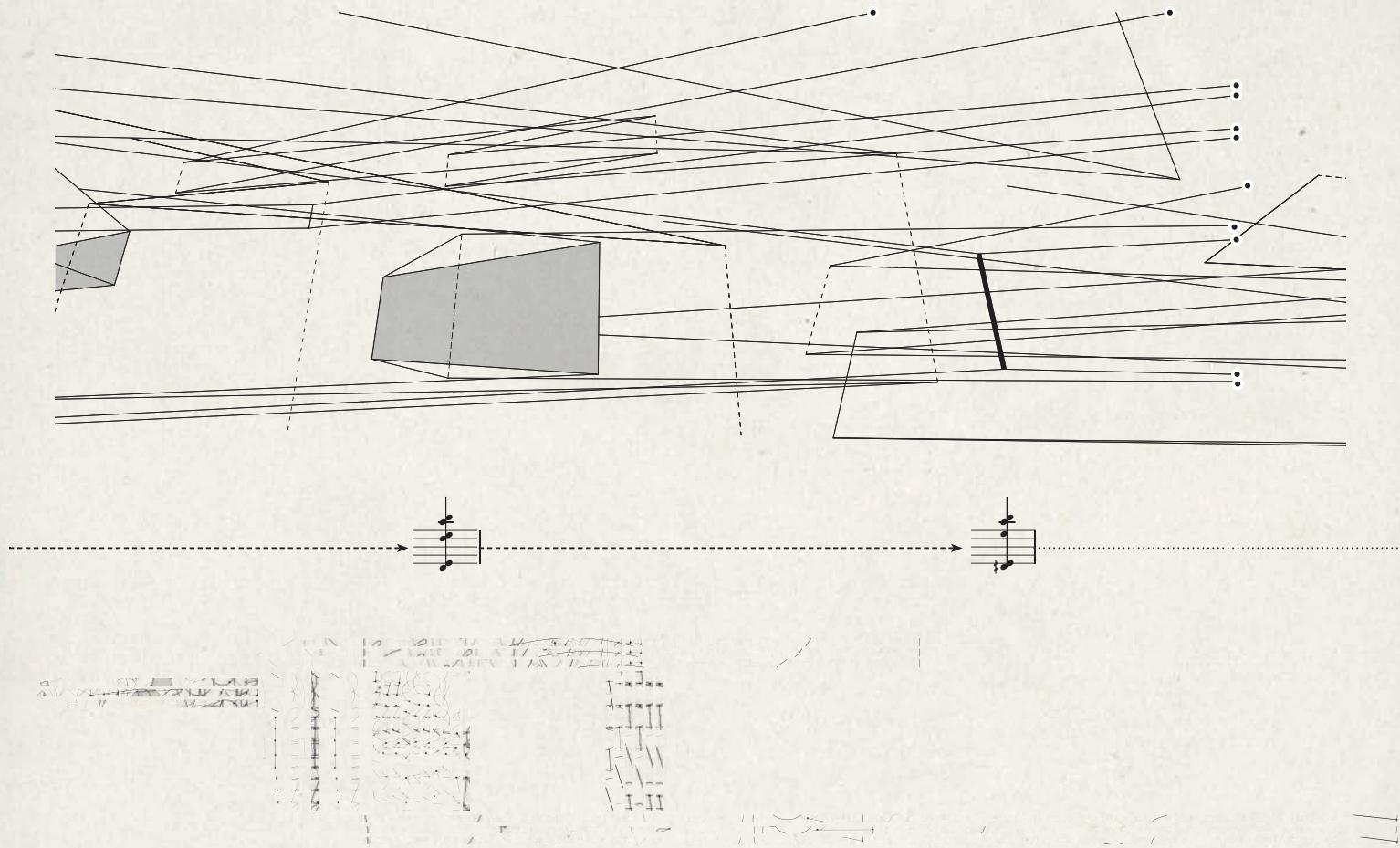
Benjamin Boretz; *Downtime*. For piano and percussion. Used by permission of Benjamin Boretz, © 2005.

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 extramusical 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 extramusical 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?

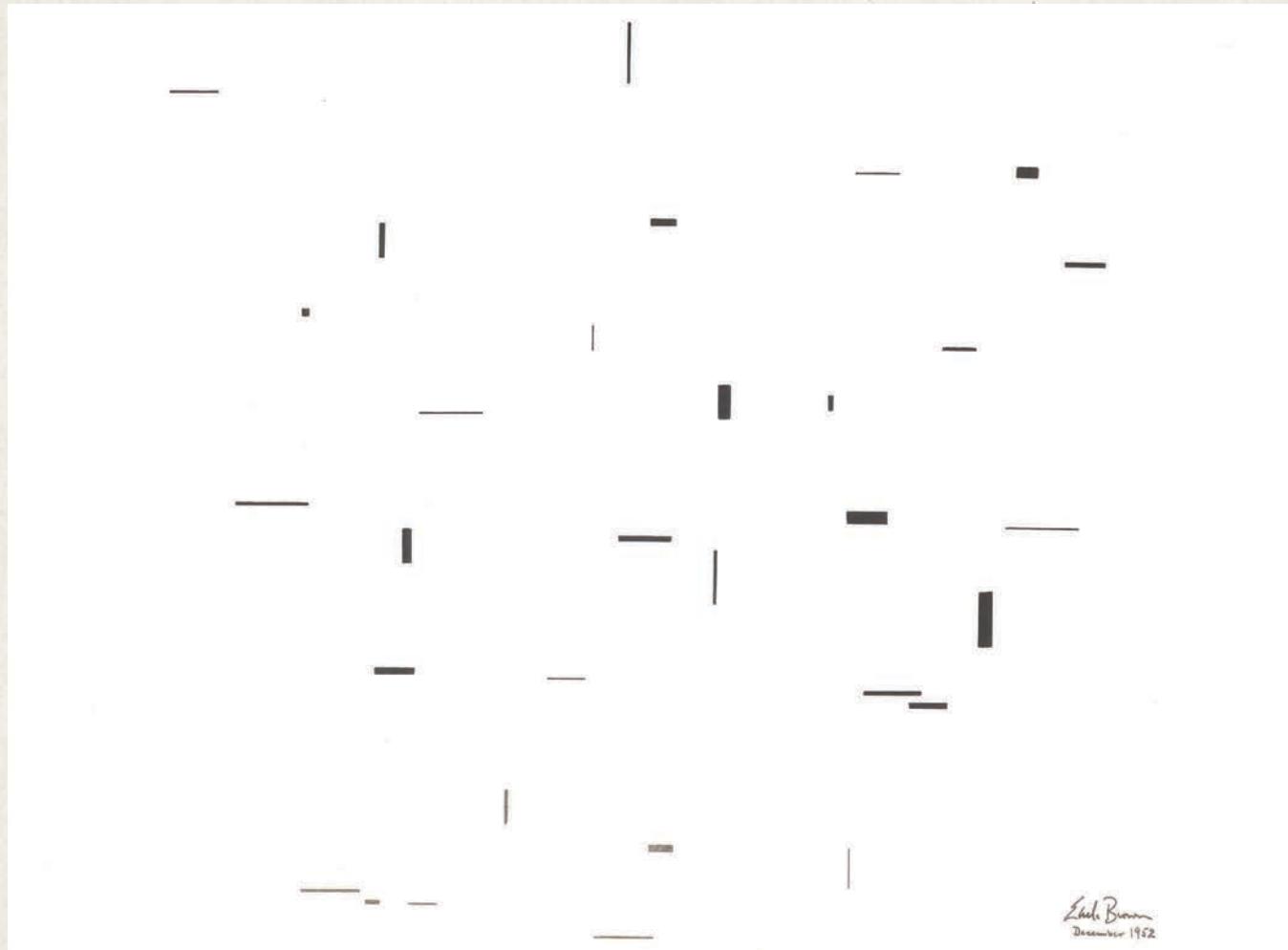
Sam Britton; *Junkspace*. For banjo and electronics. Used by permission of Sam Britton, © 2006.

Junkspace:

This is an excerpt from the Rem Koolhaas 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...

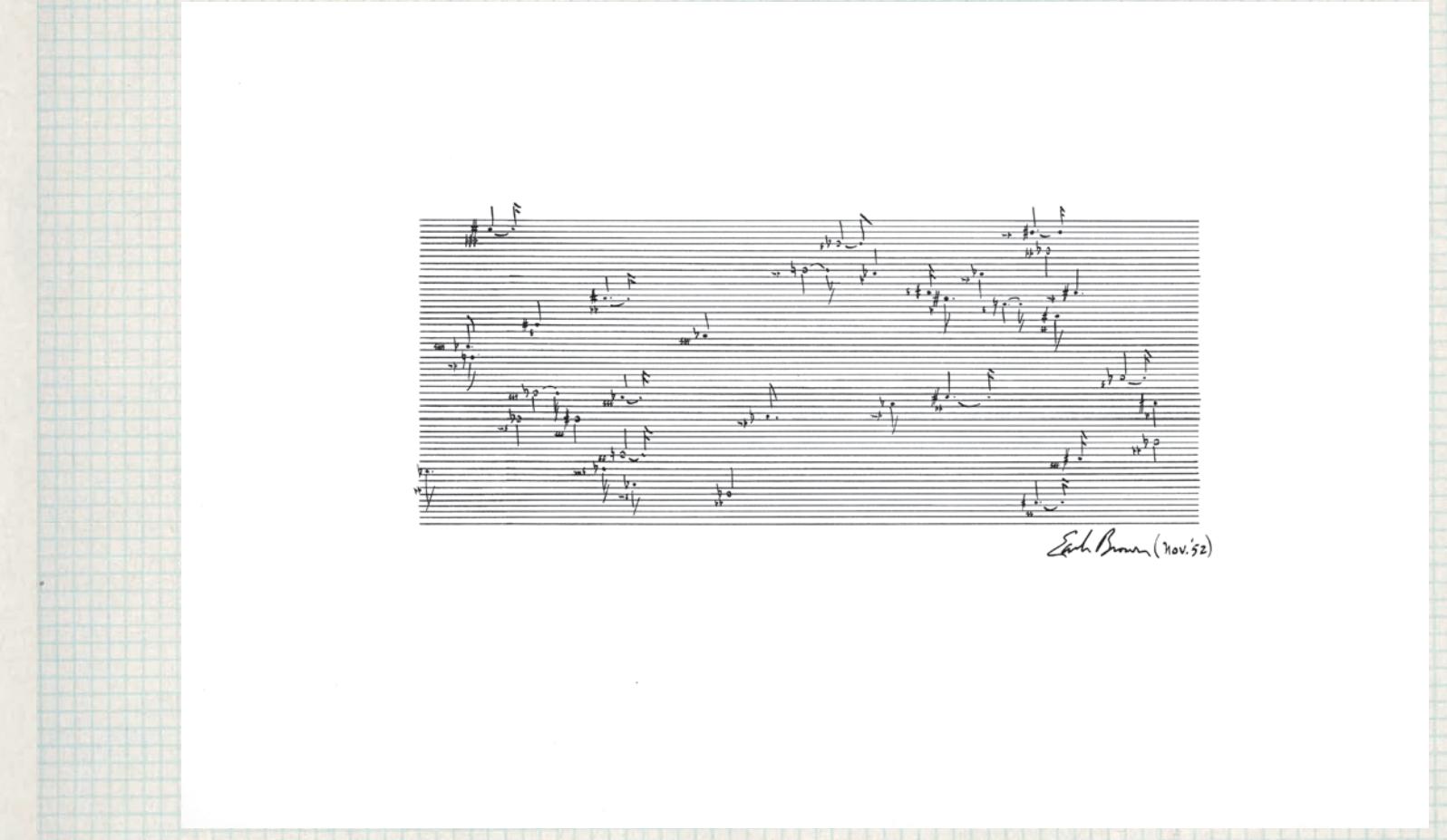


Earle Brown; December '52. excerpt from FOLIO (1952/1953) and 4 SYSTEMS (1954). Used by permission of the Earle Brown Foundation, © 2006 Associated Music Publishers.

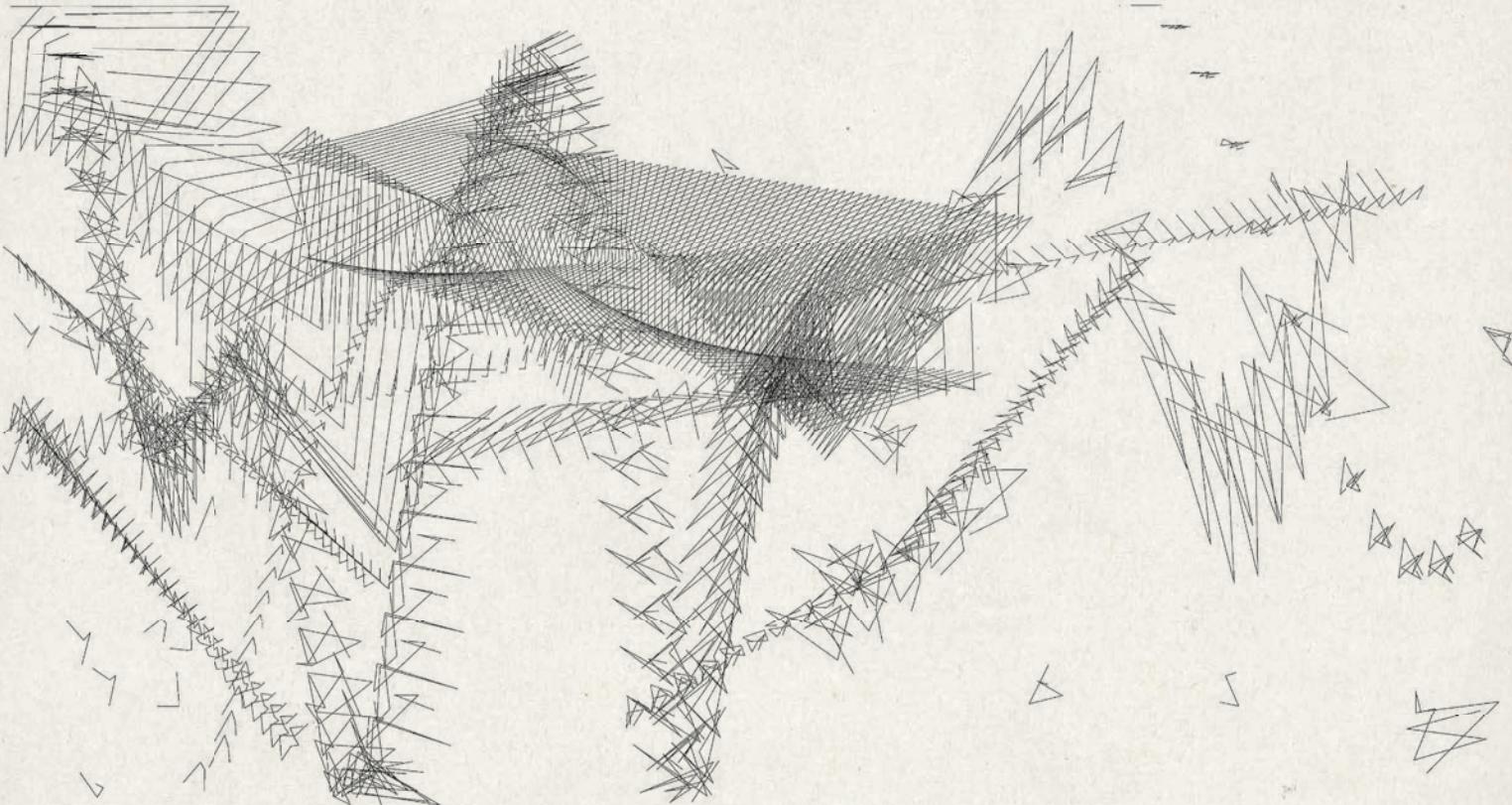
Why is it never learned that art is an exploration of experience and communication and meaning. There is always a cry for individuality and originality, but at the first indication of either one, the cry changes to nihilism, no values, anti-art, sensationalism, I suppose. This is the difference between 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, © 2006 Associated Music Publishers.

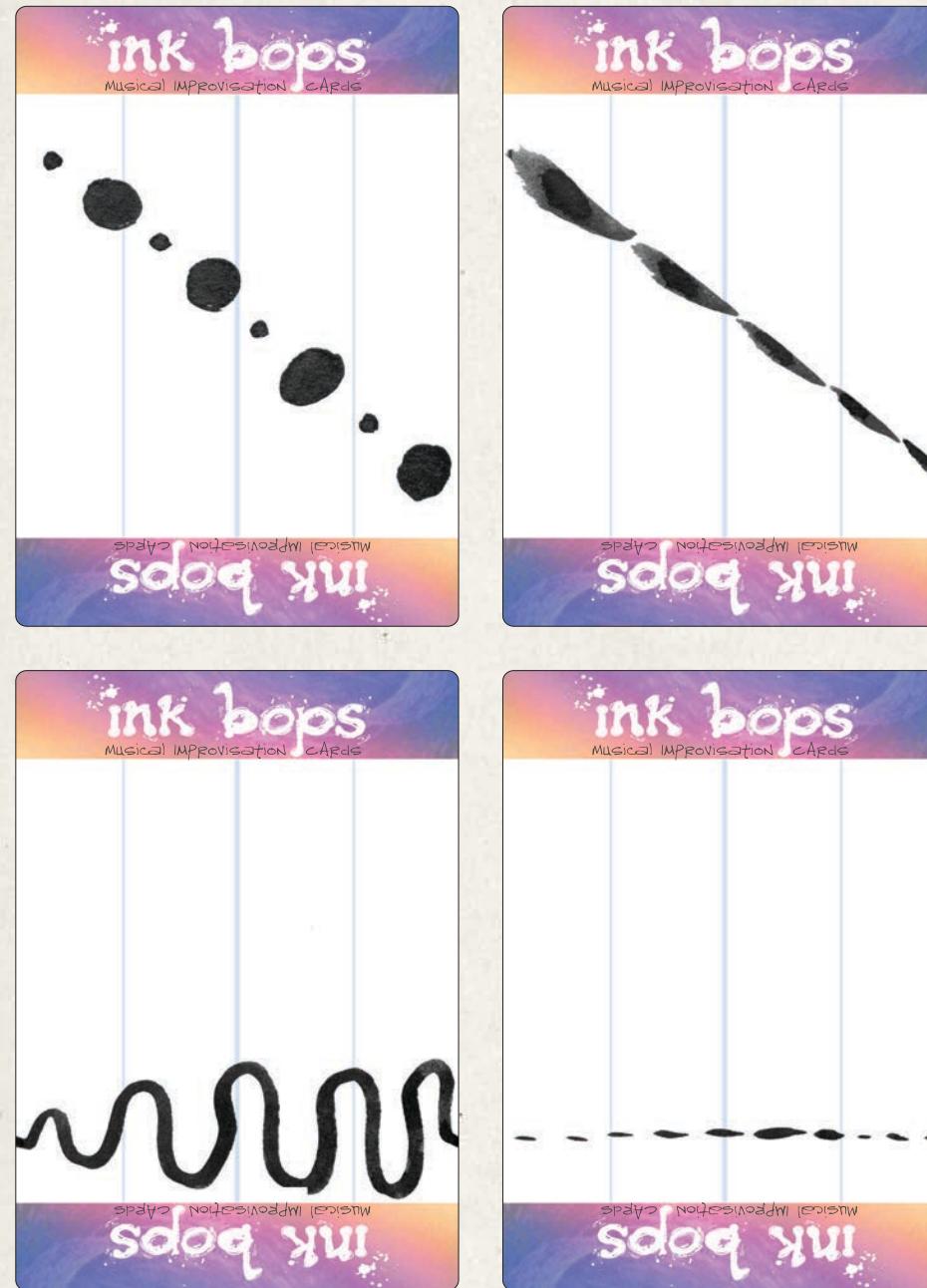


Herbert Brün; *mutatis mutandis*. For solo instruments and ensembles. Used by permission of Sonic Arts Editions (Smith Publications), © 1995.

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.

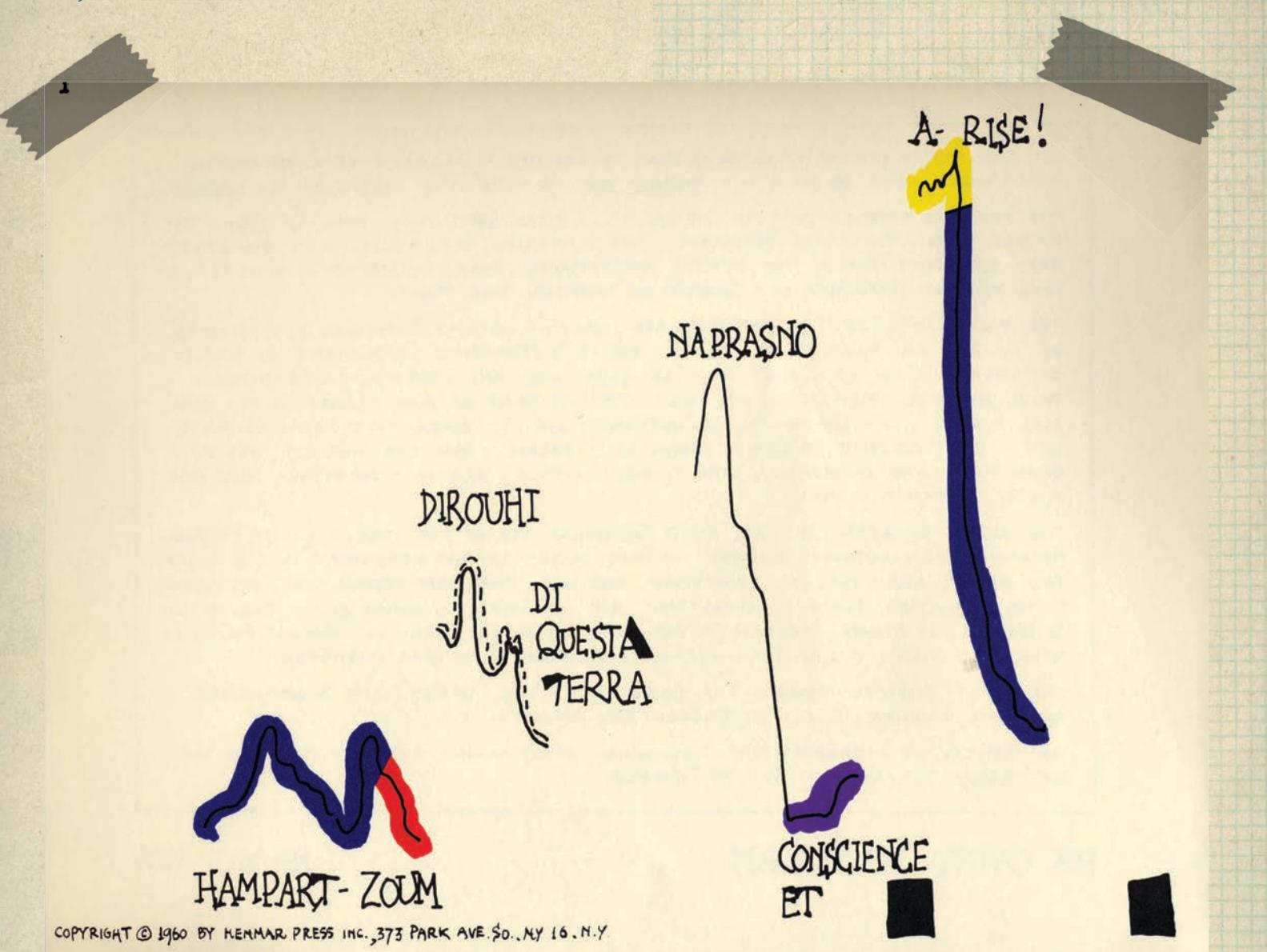


Ellen Burr; *Ink Bops* are musical improvisation cards. They are to be played alone or in a group. Using melody, extended techniques, or any sound, let your imagination run wild as you find the hidden talent within. Used by permission of Ellen Burr, © 2000/2007.

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.



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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 if desired.

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.

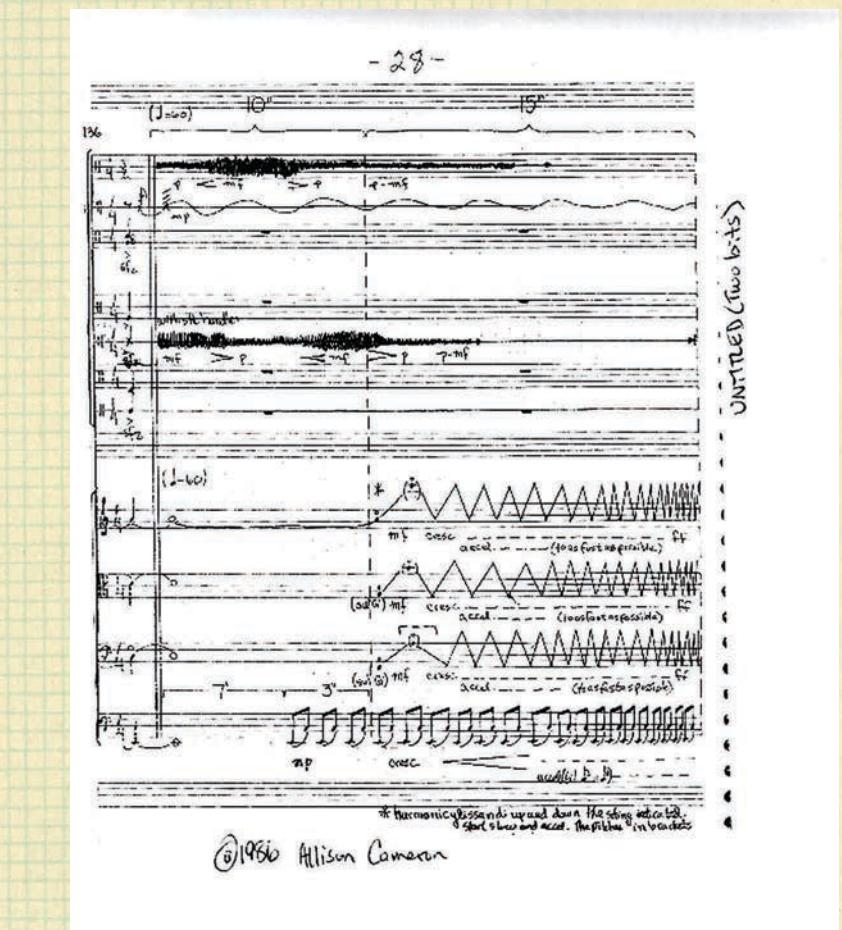
The black squares are any noises ("un-musical" use of the voice, auxiliary percussion, mechanical or electronic devices). The ones chosen by Miss Berberian in the order they appear are: tsk, tsk; footstomp; bird roll; snap, snap (fingers); clap; bark (dog);

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.

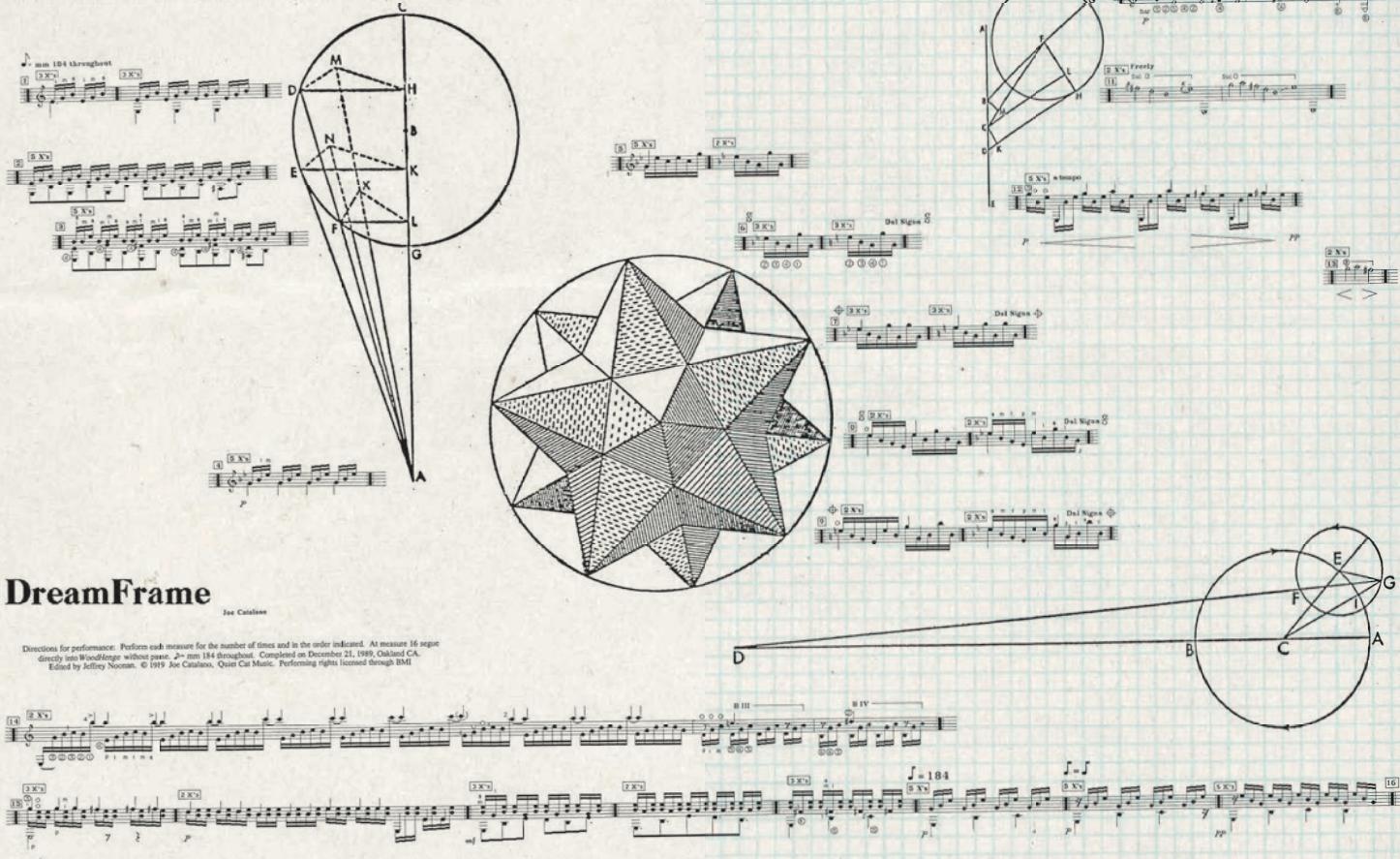
Two Bits versatility of da, from a into multi ble bass, ists the w the struct music. I us cluding a ing pegs a called dead instrumen



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

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.

**DreamFrame**

Joe Catalano

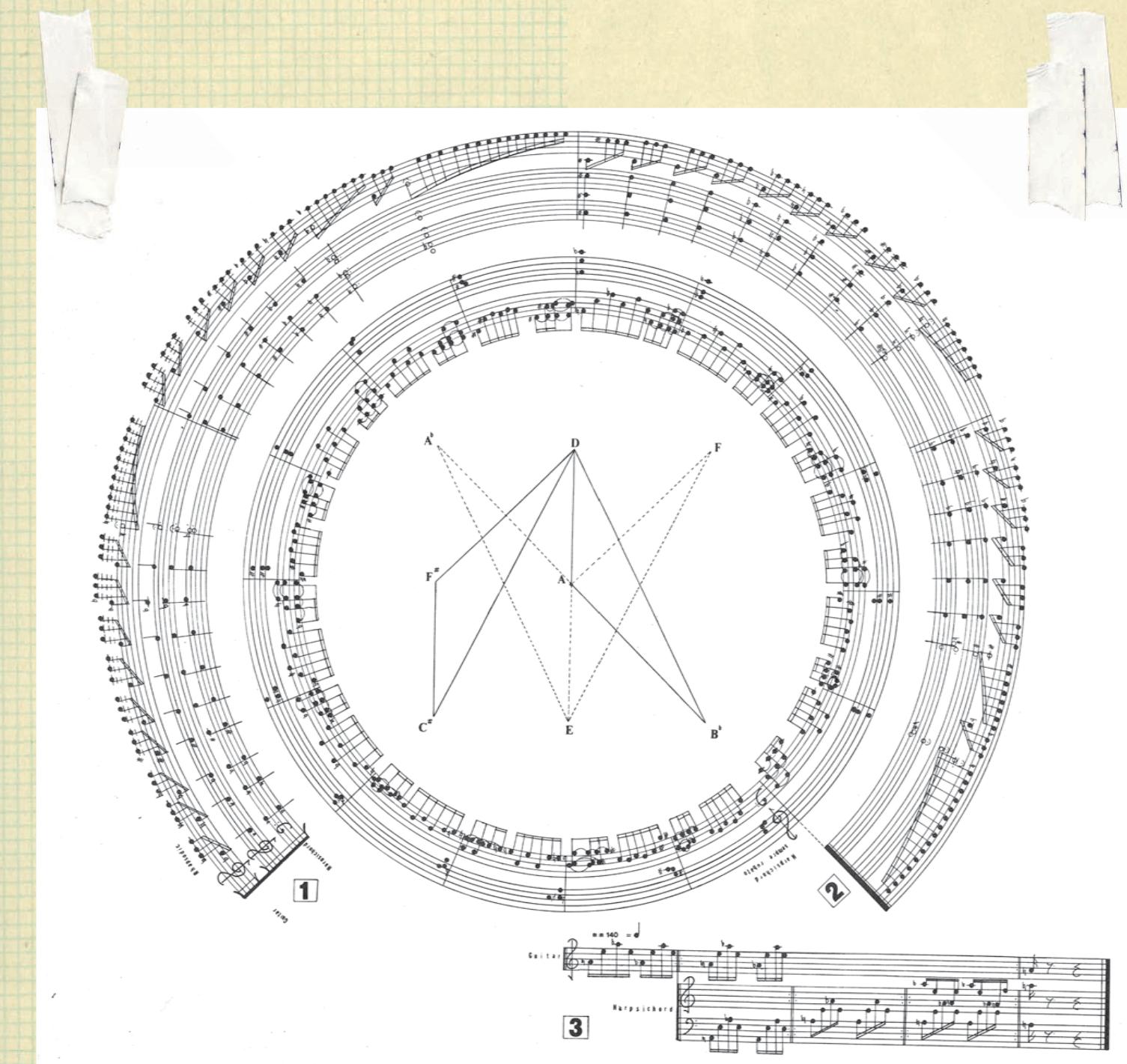
Directions for performance: Perform each measure for the number of times and in the order indicated. At measure 16 segue directly into Woodlodge without pause. 2^o = mm 184 throughout. Composed on December 21, 1989, Oakland CA.
Edited by Jeffrey Noonan. © 1991 Joe Catalano, Quiet Cat Music. Performing rights licensed through BMI.



Joe Catalano; "DreamFrame" from *Five Terrestrial 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 Terrestrial 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

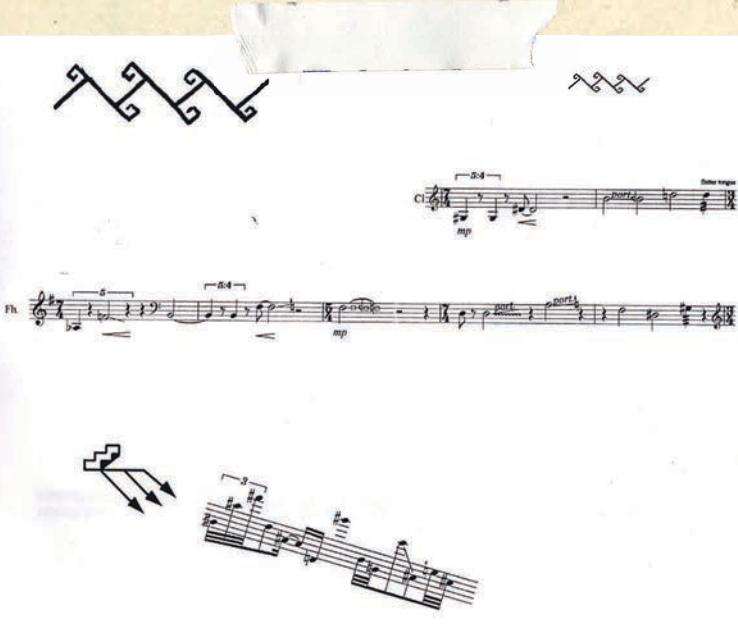
in a "harmony of the spheres," Copernicus only partially worked out a correct celestial mechanics, and Ptolemy put the earth at the center of the universe. Each of these intellectual constructs was part of a dream world, a vision of a reality which had only a relative truth.

RAVEN CHACON

CHRIS CHALFANT

A page of musical notation from a score, featuring multiple staves for Flute, Oboe, Clarinet, Bassoon, French Horn, Percussion, Guitar, Viola, and Cello. The notation includes various dynamics like *f*, *pp*, and *mp*, and performance instructions like '3' and '8.7'. A large black redaction box covers the bottom left portion of the page.

...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.

fingers *hand* *hand* *2cm*

75 b hand o 3/2 87

Mvyo cresc.

sovere cresc. *allerg.* *full body weight*

* cluster follows accident of given note

ପ୍ରକାଶନ ୫

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 im-

provisation I created in performance. It was created for a composers' competition in Louisville, Kentucky, for which I was merit finalist.

for asamisimasa
...without...

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.

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.

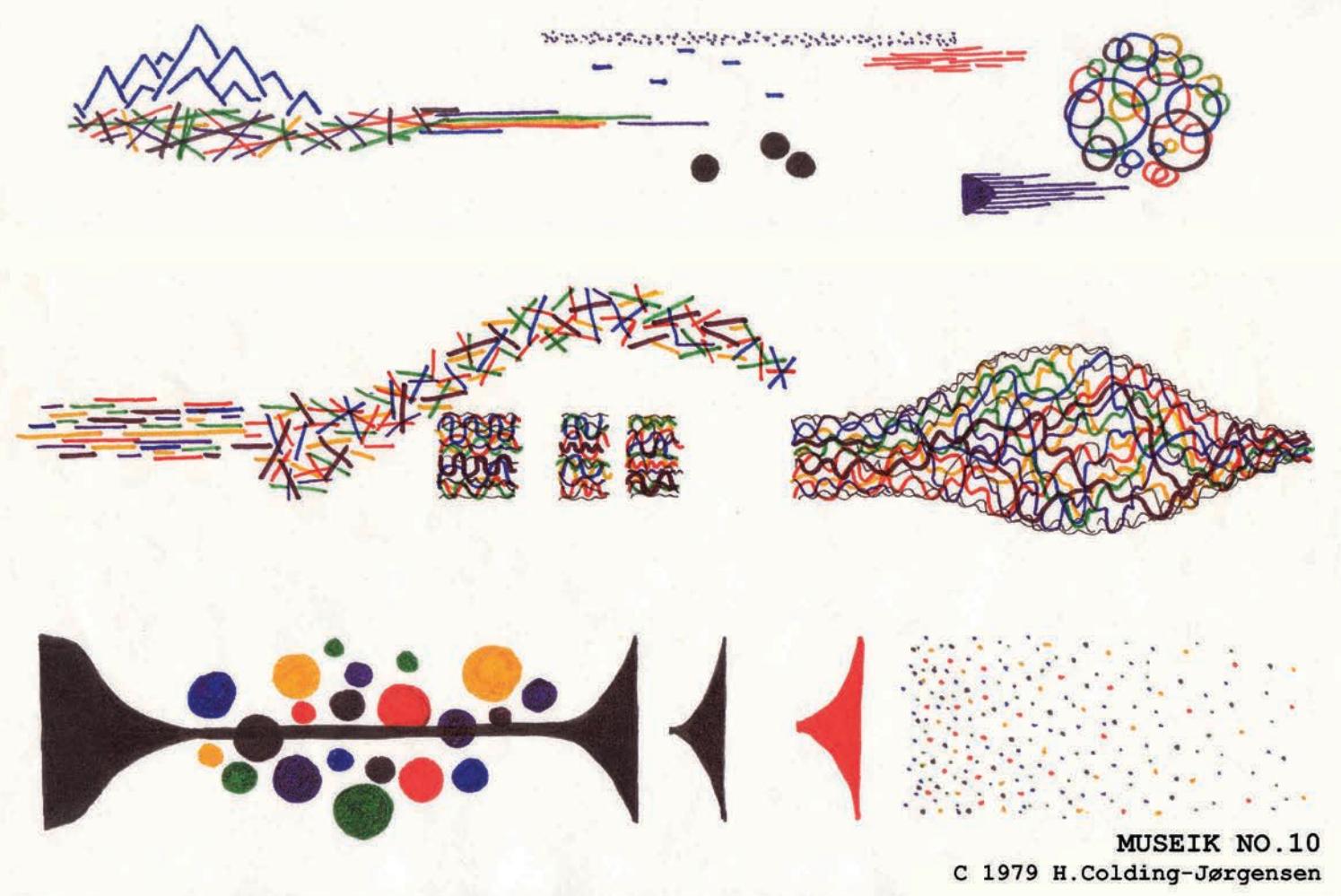
As I described earlier, I think a music score should be functional. This means it needs to com-

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 perfor-

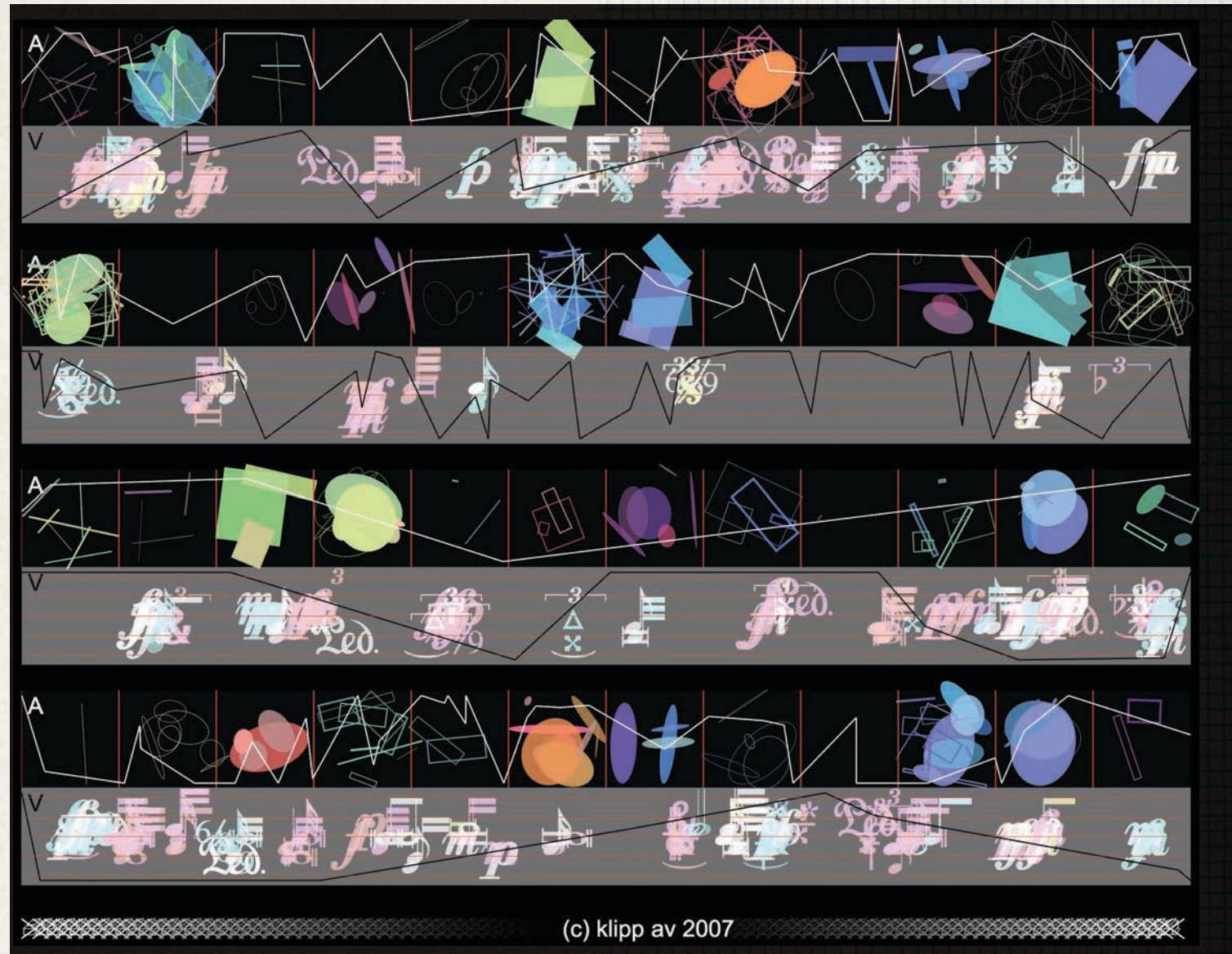
mance. Sheet No. 10 is designed rather for a shaping of a concert performance, and copies were placed on the music stands at the first performance.

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.



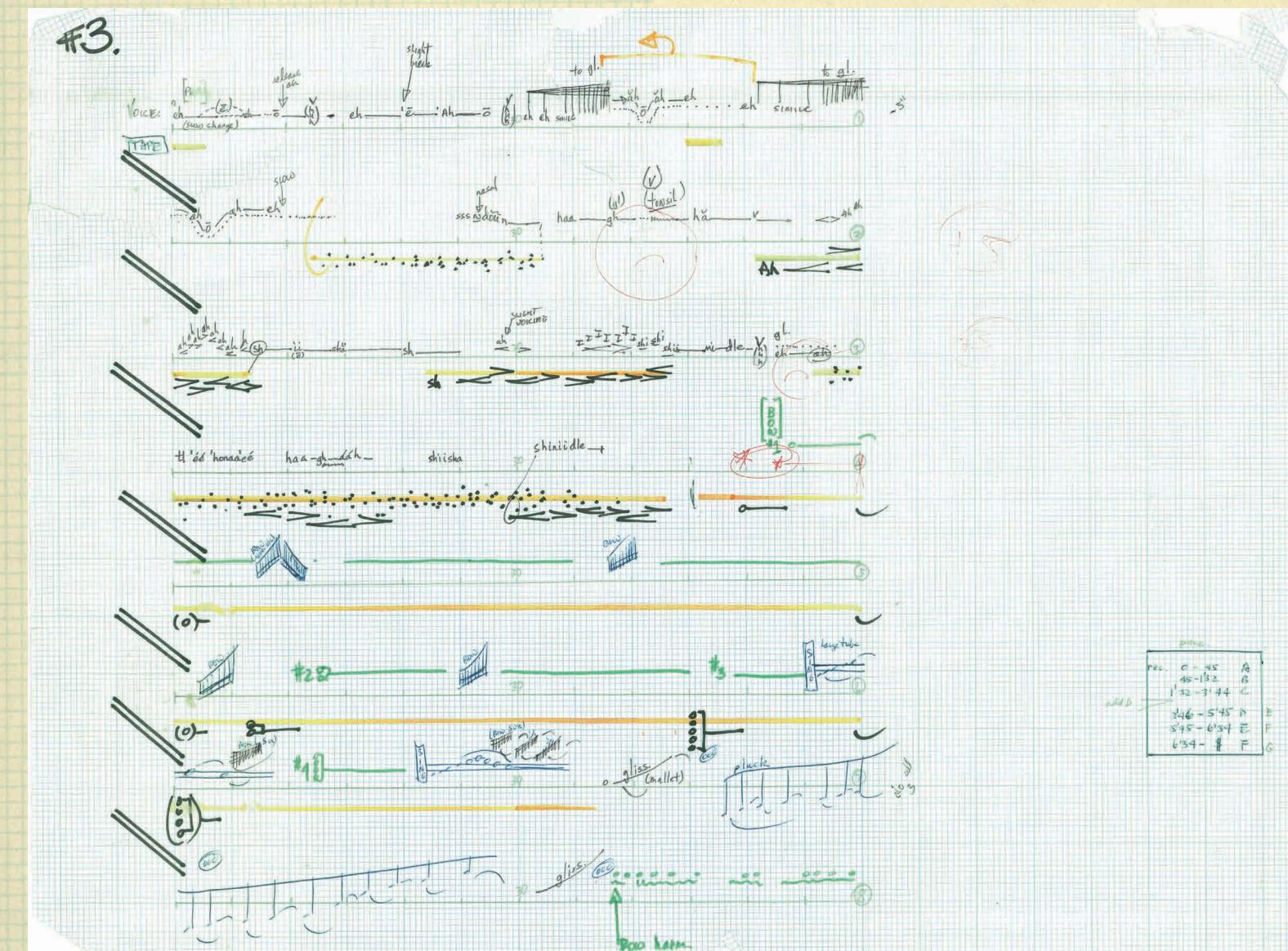
Nick Collins; *avscore 37*. For a live audiovisual performance group. Used by permission of Nick Collins, © klipp av 2007.

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.

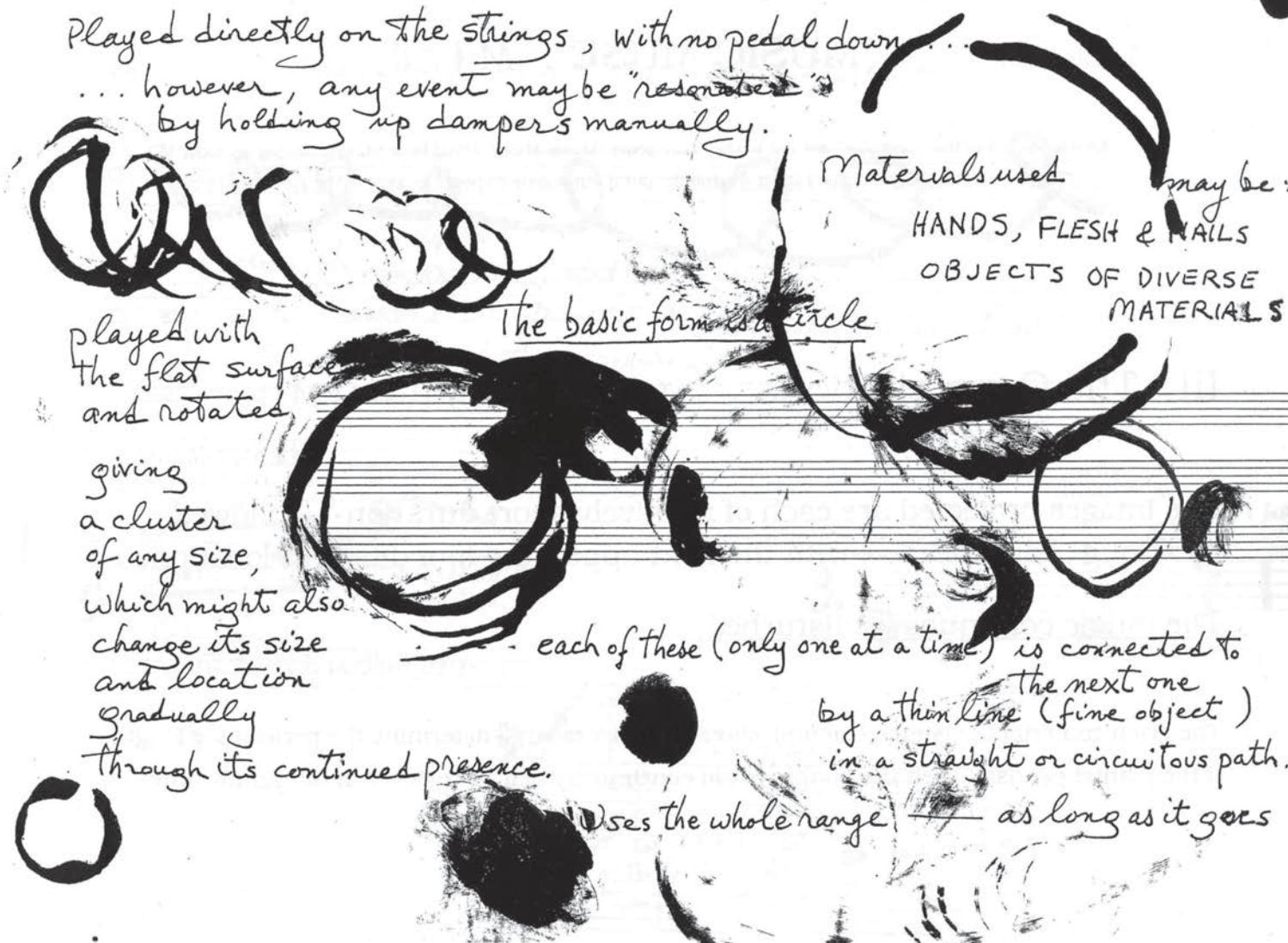


David Cope; *Sketch for Cello Concerto*. For cello concerto. Used by permission of David Cope, © 1982.

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.

The CONSTELLATIONS

Played directly on the strings, with no pedal down...
... however, any event may be "resonated" by holding up dampers manually.



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.

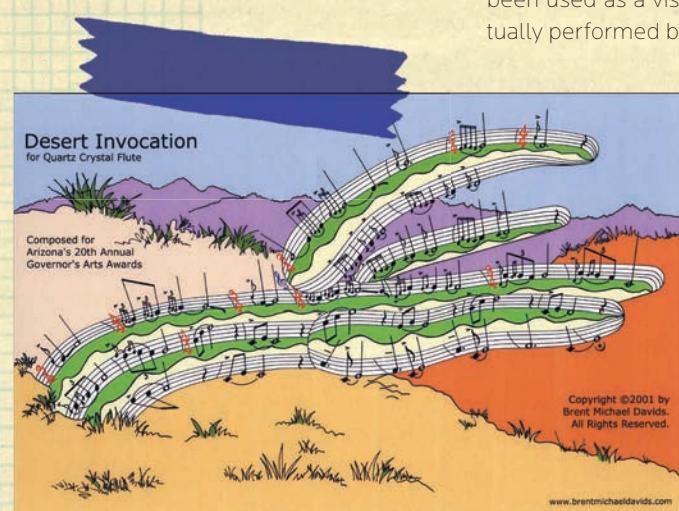
Mohican Friends teaches introductory vocal sounds and words in the Mohican language while challenging young vocalists with good contemporary composition. The Mohican text reveals something of what a traditional Mohican thinks about, namely the importance of good familial relationships and about respecting 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.

NEVER LOVE A WILD THING
FOR ENSEMBLE - [NON-SPECIFIC INSTRUMENTATION]

Tina Davidson

A

WITH ENERGY
(♩ = 96) ♩ = ♩
(one inst. stay on this line till B)

ALL START IN UNISON

OCTAVE TRANSPOSITION

B

Enter separately & closely
(B minor)
REPEAT UNTIL ALL ENTER.
HIGHEST INST. PLAYS OCTAVE HIGHER AS CALL FOR OTHERS (3).
HIGHEST SEPARATELY AND CLOSELY TO (B).
OTHER GRADUALLY DROP OUT (OVERLAPPING A BIT WITH B).

3 instruments only (wooden sondos if possible)
Play as canon, enter at your number

No oct. transposition

ALL!

REPEAT UNTIL ALL HAVE ARRIVED, THEN GO ON!
OCT. TRANSPOSITION

Enter separately once ♯1 has arrived

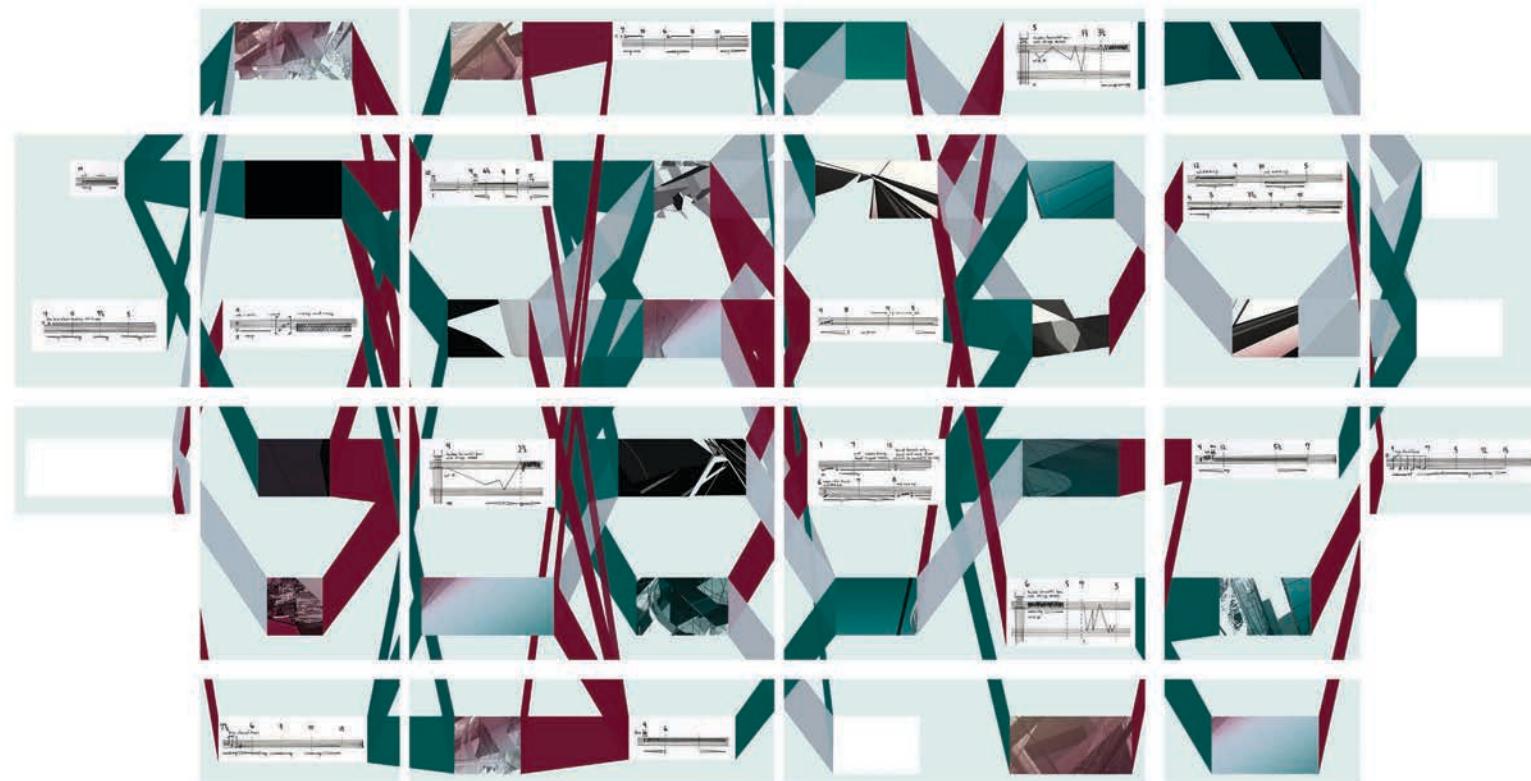
ACCIDENTALS APPLY ONLY TO TINIEST NOTE

18 Steve Ohlson

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.

3

II. Percolator

Robert Denham

With careful scrutiny

1

2

12 *accel. poco a poco (becoming frantic - fill and refill as needed)*

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.

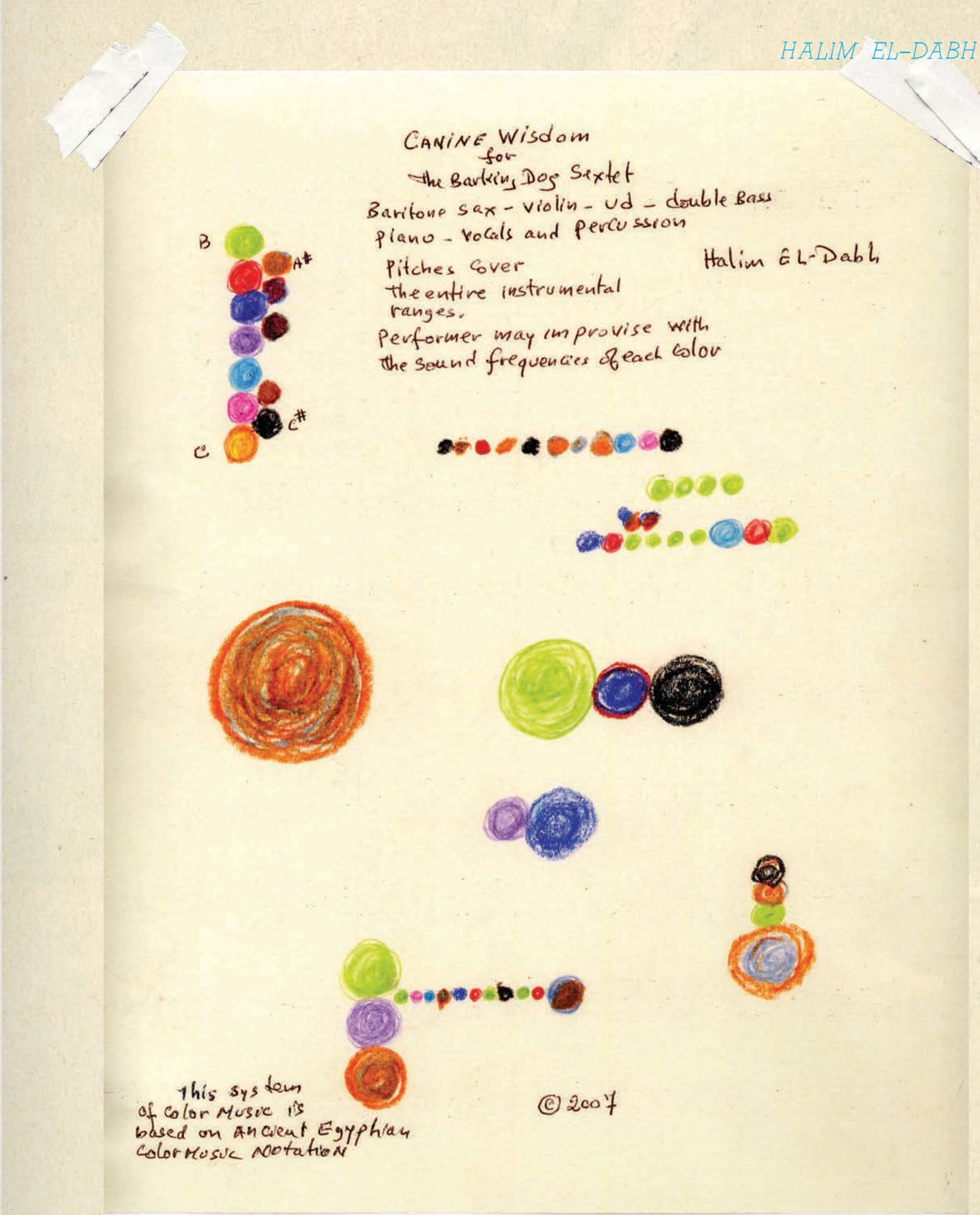
Robert Denham; "Percolator" from *Suite of Household Appliances*. For two trumpets, each with a metal pot of water.

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

Percolator: It may be difficult to find glamour 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.



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

Used by permission of Halim El-Dabh, © 2007.

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 vermillion 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 mag-

azine 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.

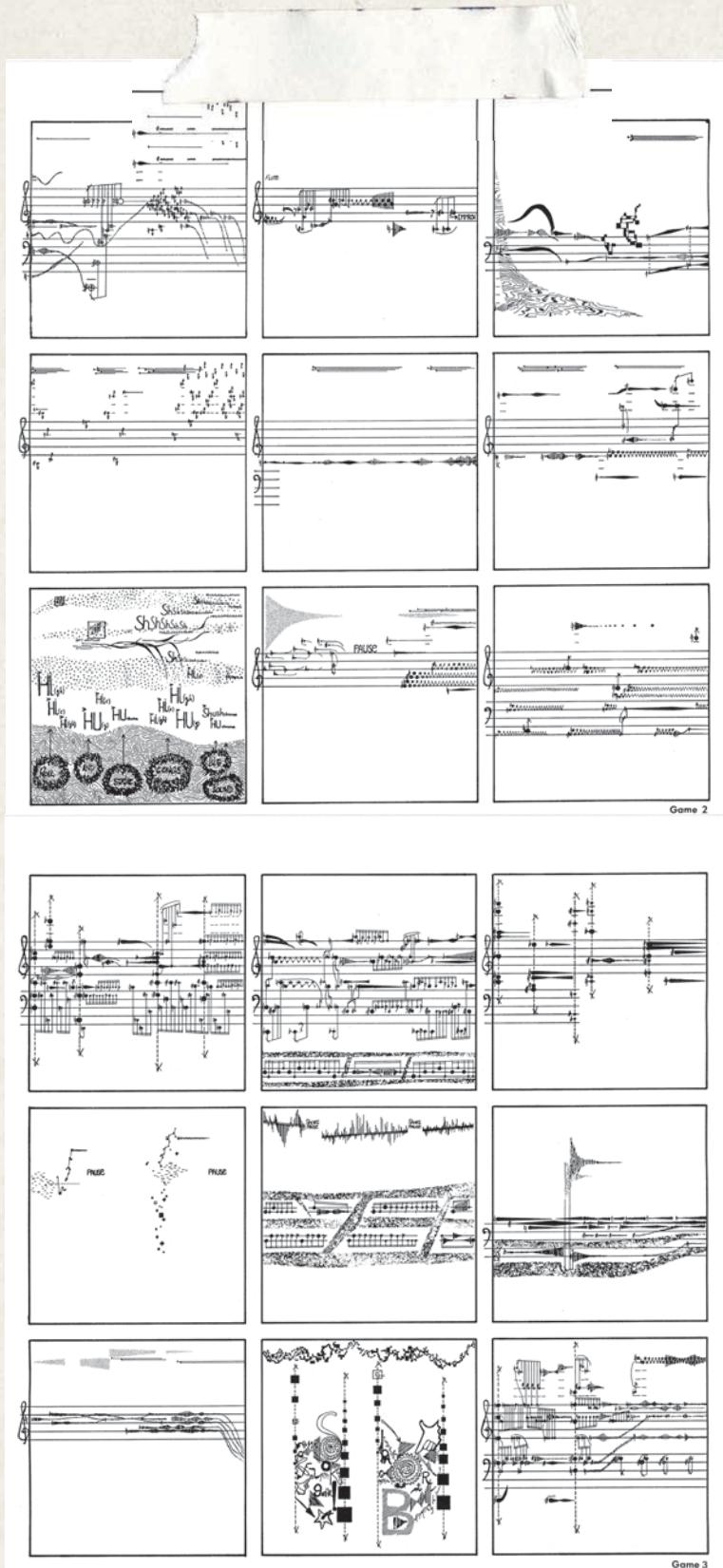
In subsequent years, I have returned periodically to this color-based approach, using it in my 1973 work *Voyages*, for jazz big band, as well as other workshops I have presented. In 1991, I based

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.

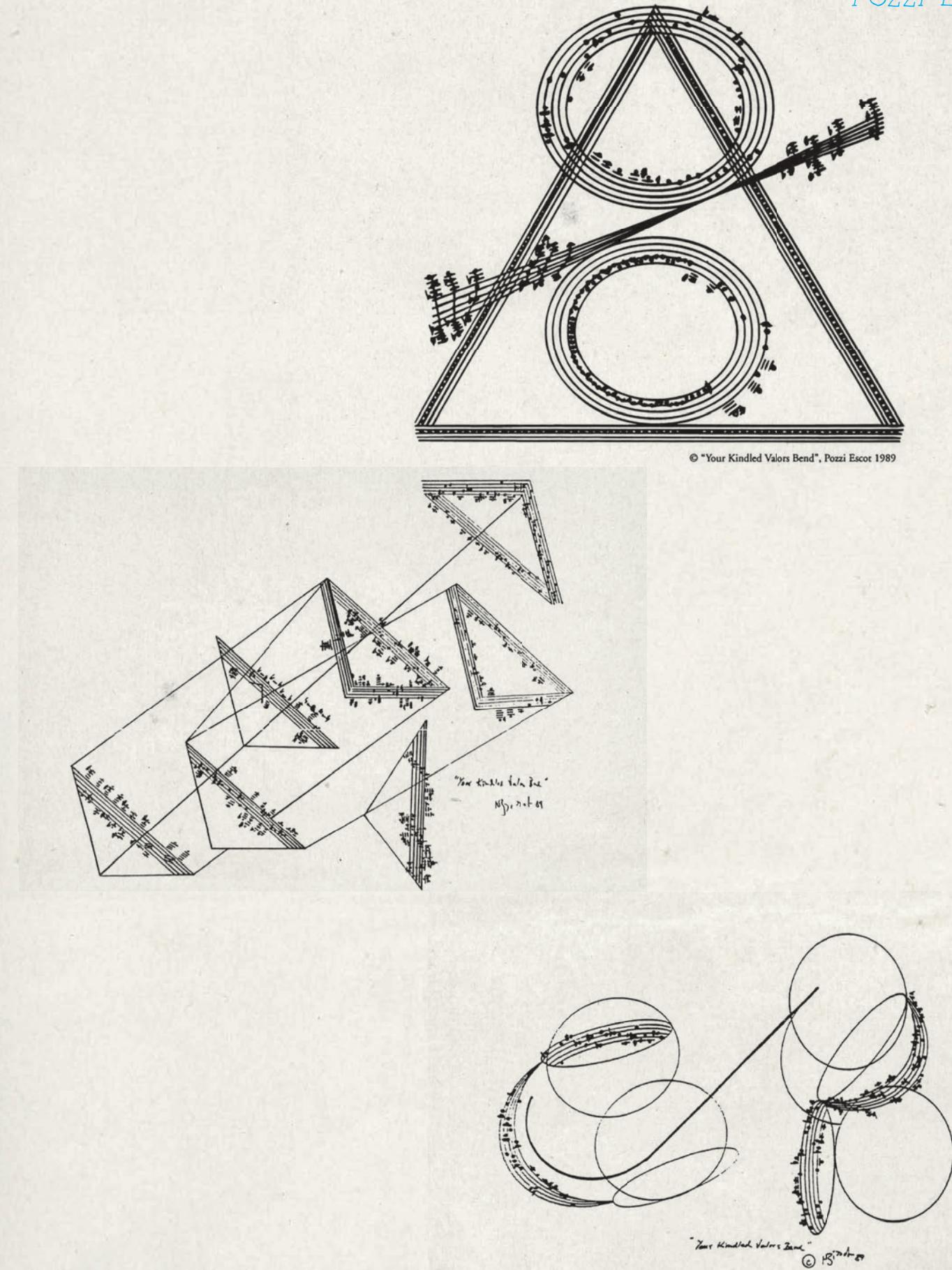


Robert Erickson; *Scapes*, "Game 2" and "Game 3." For two groups, each of both five or more instruments and conductor. Used by permission of Sonic Art Editions (Smith Publications).
© 1984.

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.



Pozzi Escot; *Your Kindled Valors Bend*. For soprano, clarinet, and piano.
Used by permission of Pozzi Escot / Publication Contact International, © 1989.

COMPOSING BY A COMPOSER - A MEDIEV ALIA VANTGARDE 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 inflections 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.

41

Coda. Hay ganas de quedarse plantado en este verso ...

cue 24

... ¡pero yo no me quedo!

cue 25

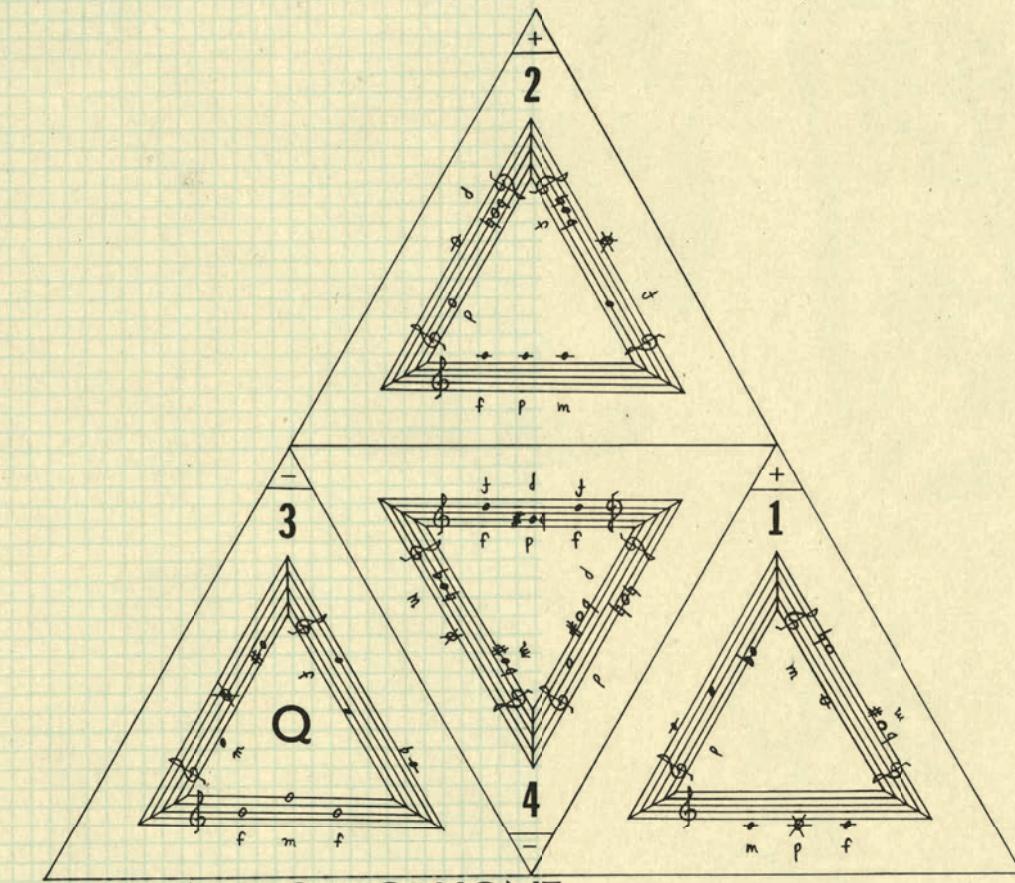
7:38.5 7:41.5 7:43.5 7:45.5 7:49.5

7:54.5 7:56 7:58.5 8:00

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.
Used by permission of the composer of Rajmil Fischman, © 2000.



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 loud-

speakers 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.

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 mistak-

enly 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 Lucas 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 Cage 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 un-affecting 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, ABACADAEDA-CABA. 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 trombon-

ist 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 repertoires 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.nmx?i=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 improvisato"); 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.

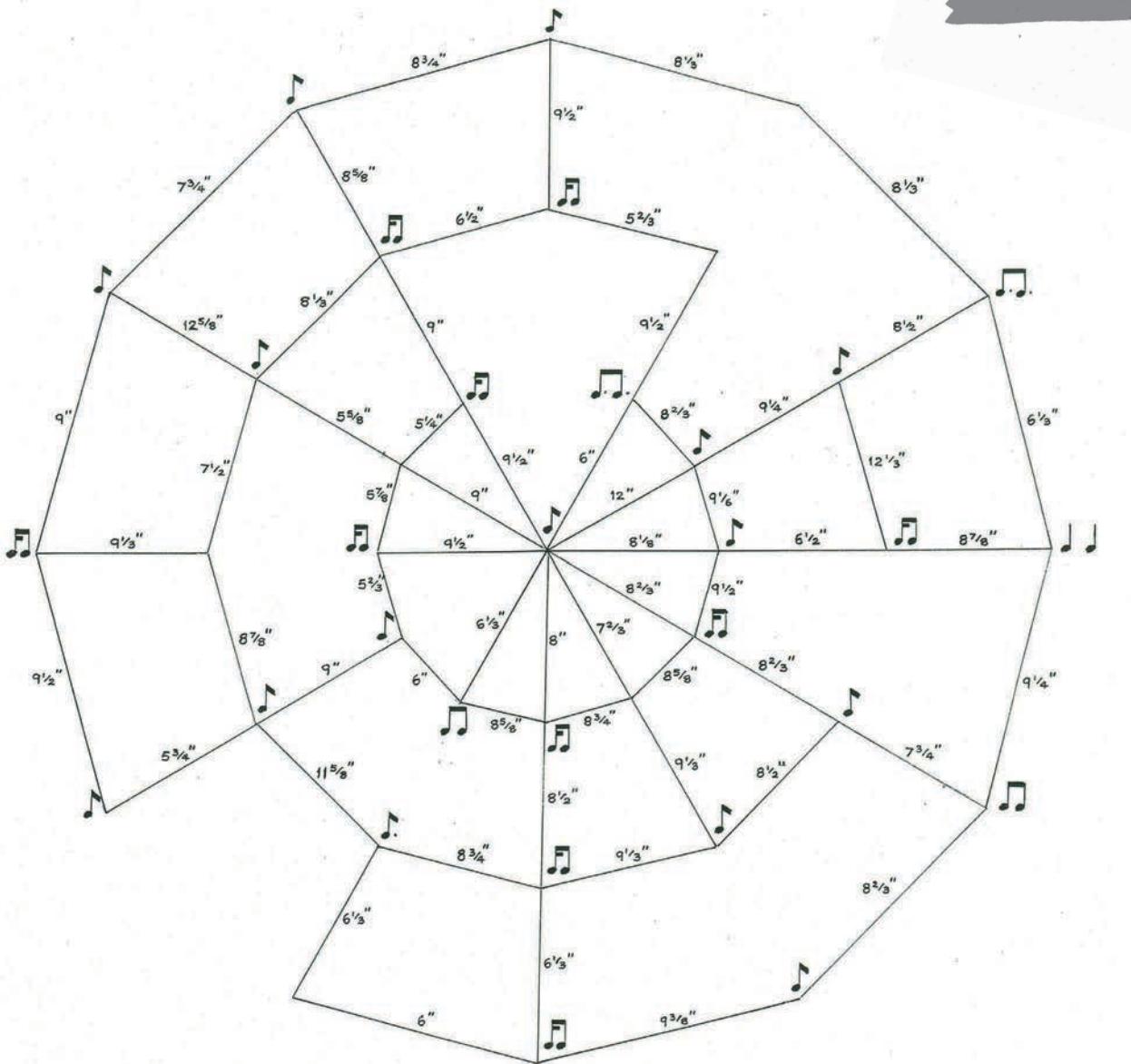
35 Any composer who has worked with non-standard notational approaches has also likely worked with performers who "resort privately to standard musical symbols in the process of working out indeterminate or graphic scores." ALOYS KONTARSKY, "Notation for Piano," in Benjamin Boretz and Edward T. Cone, 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_qn196/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; *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.

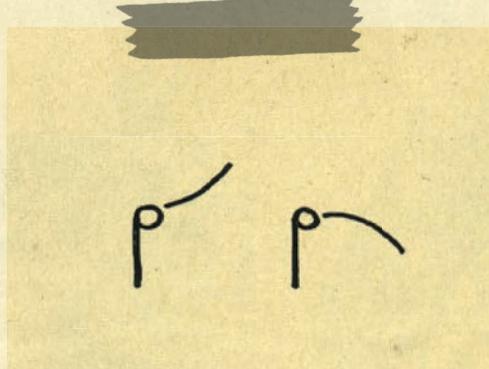
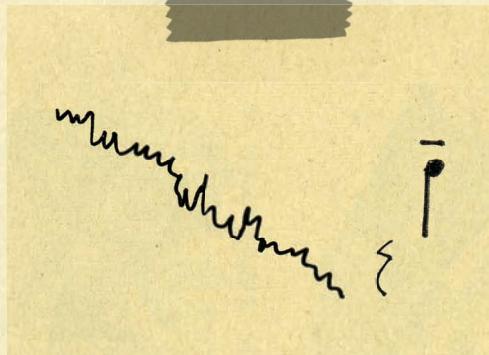
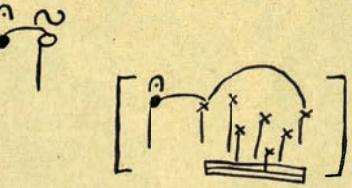
at the edge of time: Music is, above all, an art in time, and time is both something we can measure against a pulse—a clock, a heartbeat—as well as being a space in which things may happen. *at the edge of time* is music in which a group of musicians, and the sounds they make, occupy a space in time, 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.

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.

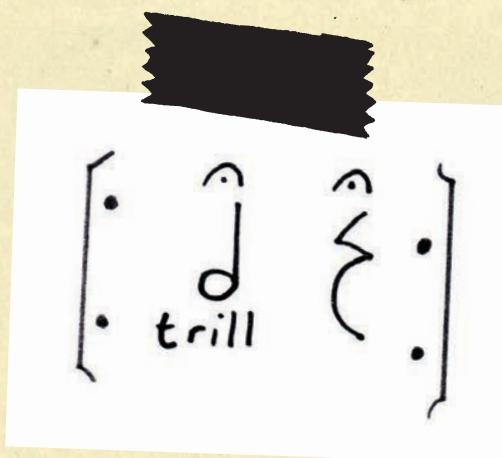
When used in a rehearsal/performance context, each notation symbol is presented separately on a small index card. This format allows for a free ordering of the symbols. Rules for interpretation, as well for the structural design of an improvisation, are at the discretion of the participants.

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.



Tape

Air tones

Click!

Slap tongue ram

"CH"

ff

p

mf

ff

f

mp

mf

f

p

11"

11-12

13-14

15-16

17-18

19-20

21-22

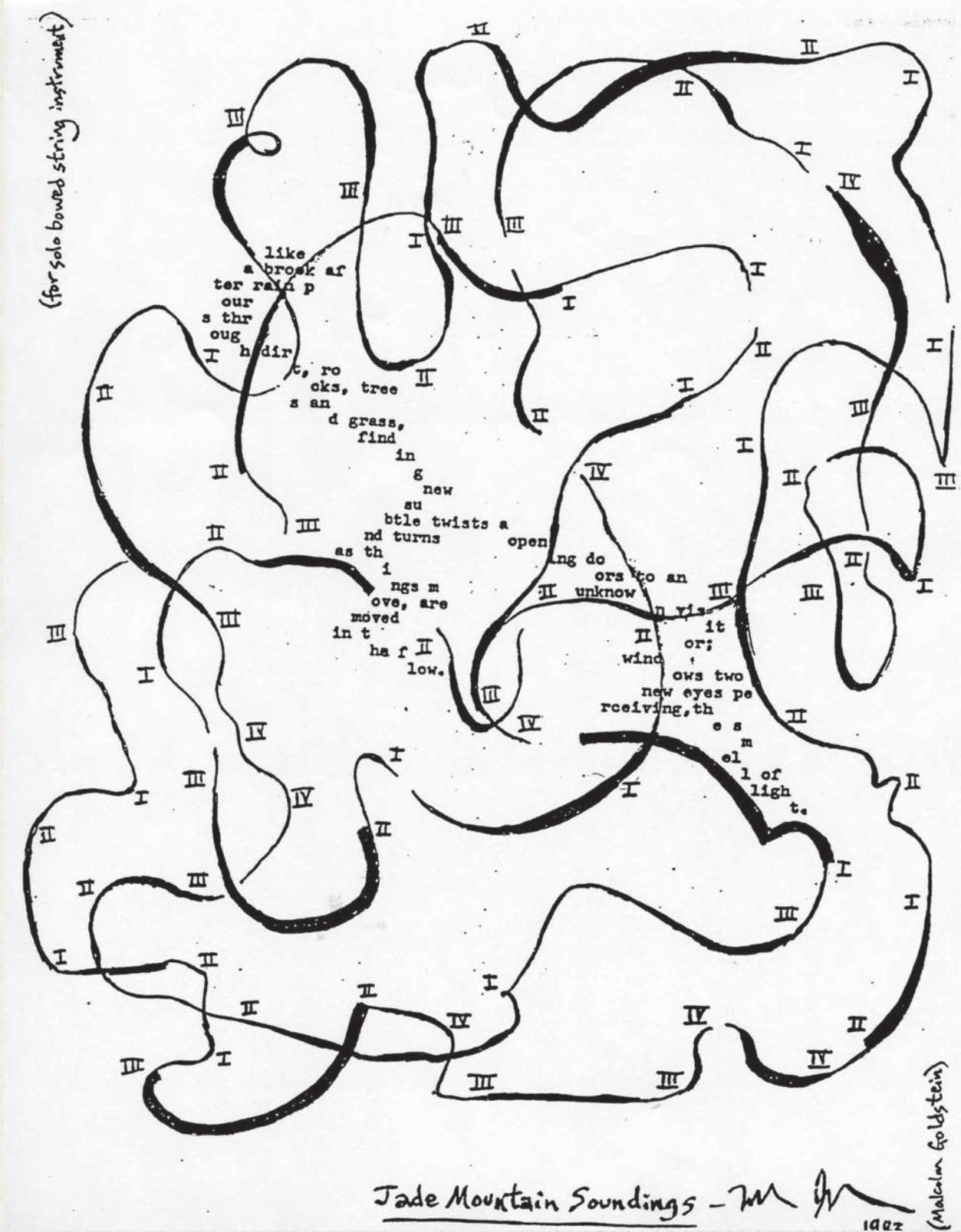
23-24

(pitch)

ff

mf

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 Buck)

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 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.

© Malcolm Goldstein, 1983

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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.)

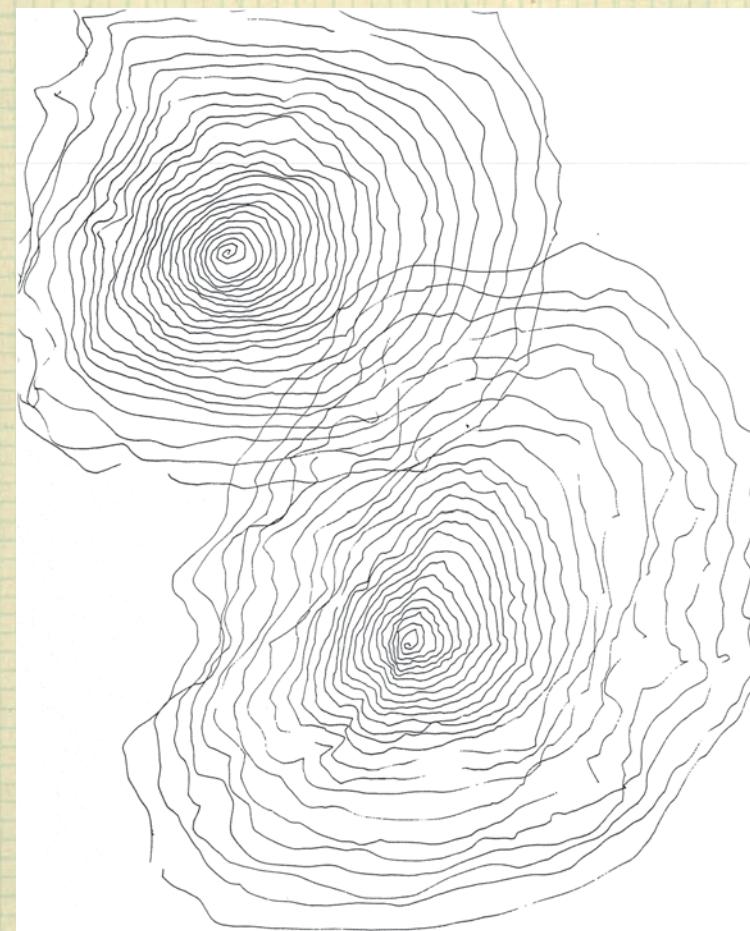
The curvature of the line indicates changes in bow placement: from on the bridge to on the fingerboard and anywhere in between. When the line curves more gradually, so also the shift of bow placement is more subtle; when the line curves more suddenly or extremely, so also the bow placement should change 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

tempo di polka
 R.H.: then gradually subtract as before
 (x) (y)
 L.H.: gradually subtract notes in any order, leaving one or two.
 Then go on to: . . . then: . . . then:
 LH: subtract as before . . . then: - - - then: . . . then:
 LH alone, then back to bar 1.

Each bar = ca. 15" = 60", subtraction starts no earlier than half way through time period. In 5th bar choose from (x) 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 Octave at bar 5 (R.H.) and it must be in lowest register: ; when in bar 6:
 Change LH to accompaniment pattern below; quickly add the melody as indicated appassionato con carne:

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; "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 / Free-Play 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.

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.

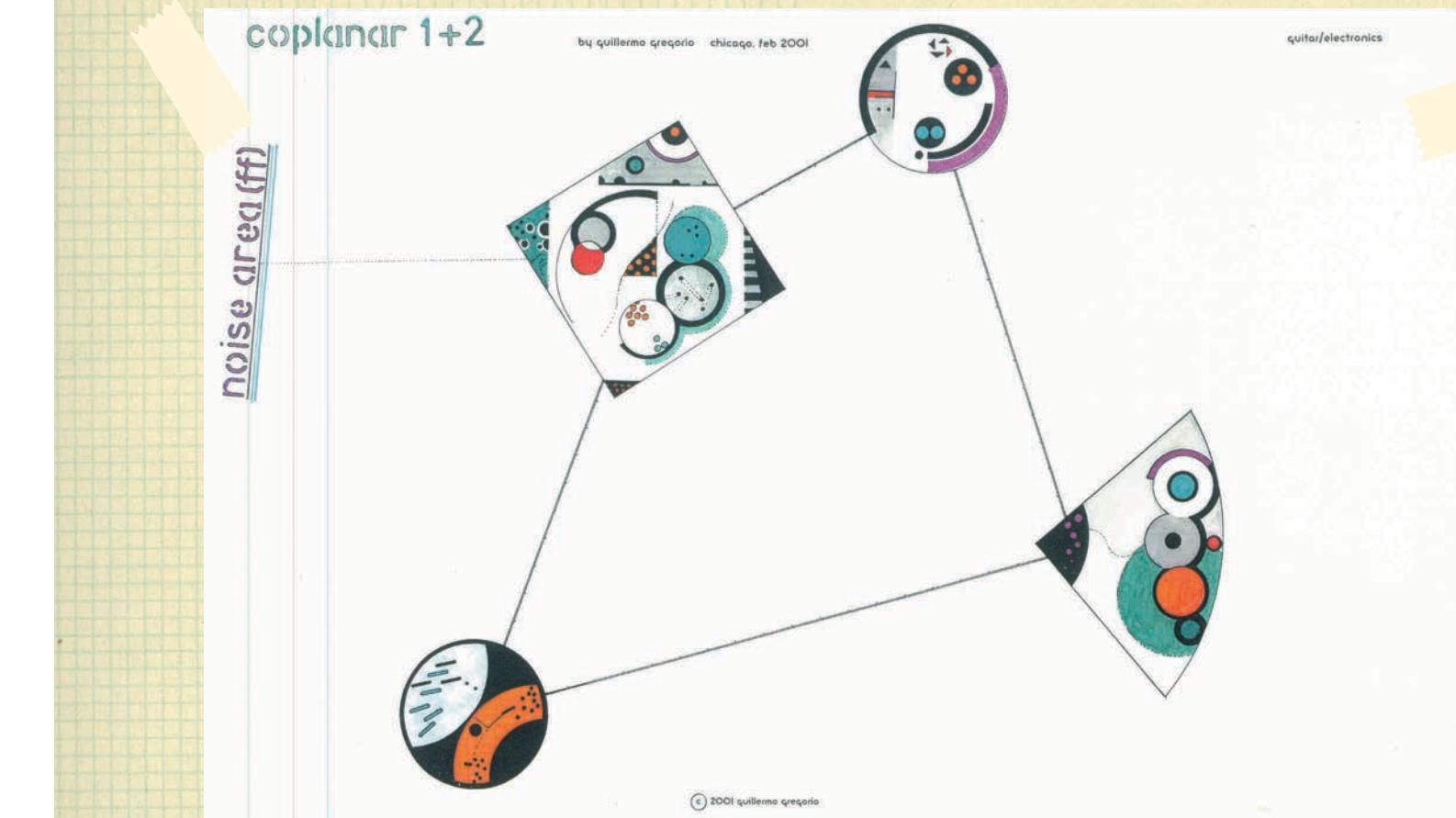
And the musicians must be willing to give of themselves, to inhabit the ideas, to do, to compose what is needed to make the ideas into music. A spiritual commitment is required, and the building of a performance community, because there is no such thing as simply "playing the score."

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.

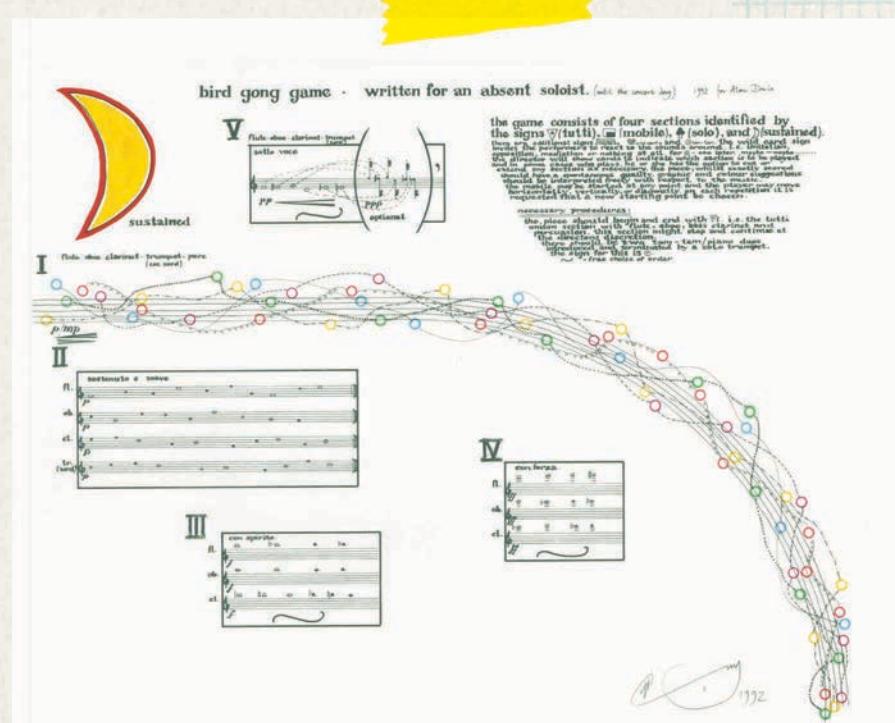
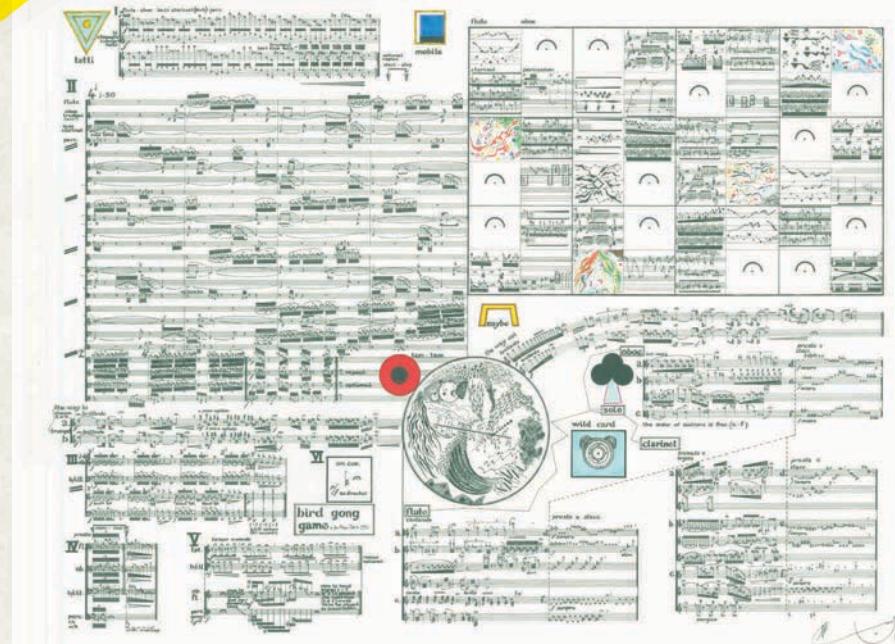
Note: this has been adapted from the liner notes to Philip Corner: *Extreme Positions*.



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

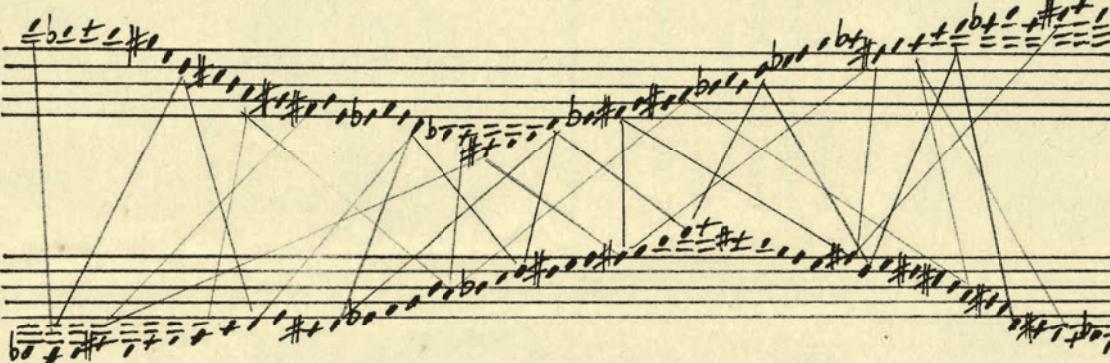
Used by permission of Barry Guy, ©1992.

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 appended to the score are presented on a series of cards that can be rapidly displayed to performers.

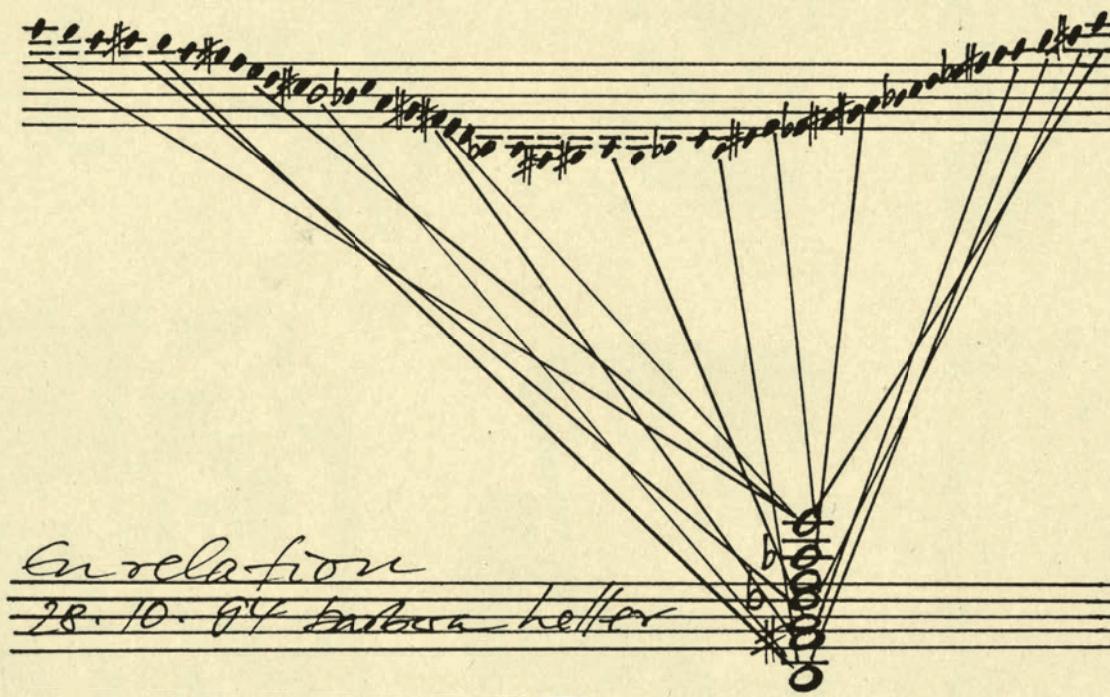
As an overall concept, the three paintings of Alan Davie are deconstructed to reveal the signs that are then used to generate a new language appropriate to the special needs of improvisers and composer alike. Color and graphics, therefore, perform an important role in that they define extensions to the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

wgg II/10. **IW**
NEW ORCHESTRA WORKSHOP
Barry Guy 1994.
with thanks to Alan Davie for Witch Gong No.10 and text

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



le triple accord 20.11.04 barbara heller



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

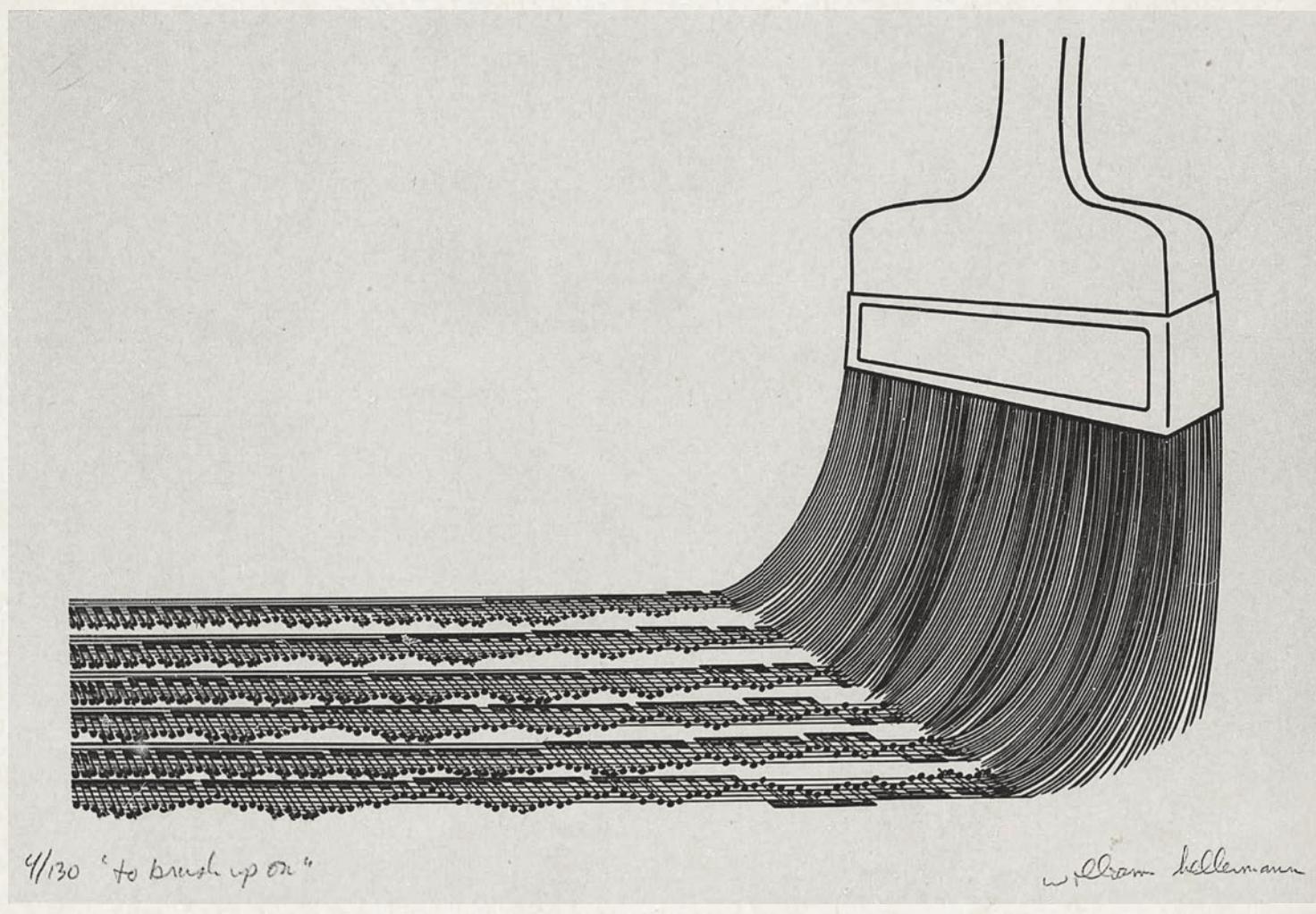
The image shows a page from Brian Heller's 'Ready to Use Illustrations of Women's Heads'. It features musical notation for a solo wind instrument (Flute) and includes CD playback and electronic effects (FX). The notation is divided into sections with illustrations of women's heads in various poses and expressions, such as 'looking.', 'laughing.', 'talking.', 'working.', 'making-up.', 'playing.', 'breath pizz.', 'being', 'decorate, and embellish', and 'to advertise.' Each section includes specific performance instructions like 'PITCH CHANGE (any +)', 'PITCH CHANGE (any -)', 'LONG DELAY', and 'rit.'. The notation also includes dynamic markings like 'p' and 'f', and tempo markings like '♩ = 62-70'.

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.

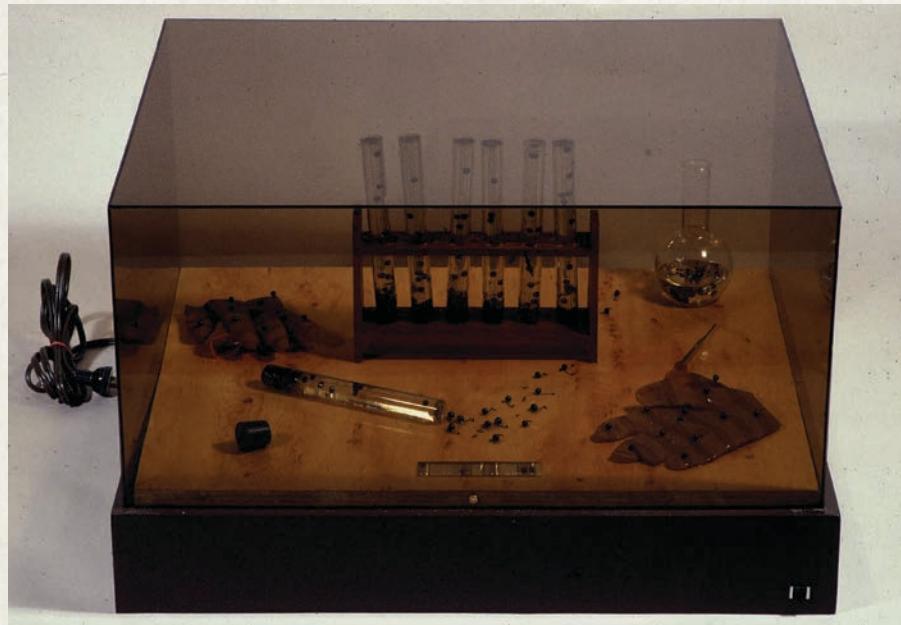
Illustrations of Women's Heads: The notation is designed to "drift" between fairly conventional notes and rhythms, and more suggestive lines and shapes, intended as a rough outline or contour of a phrase, without specifying anything further. The illustrations of the heads (scanned from a book of clip 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.



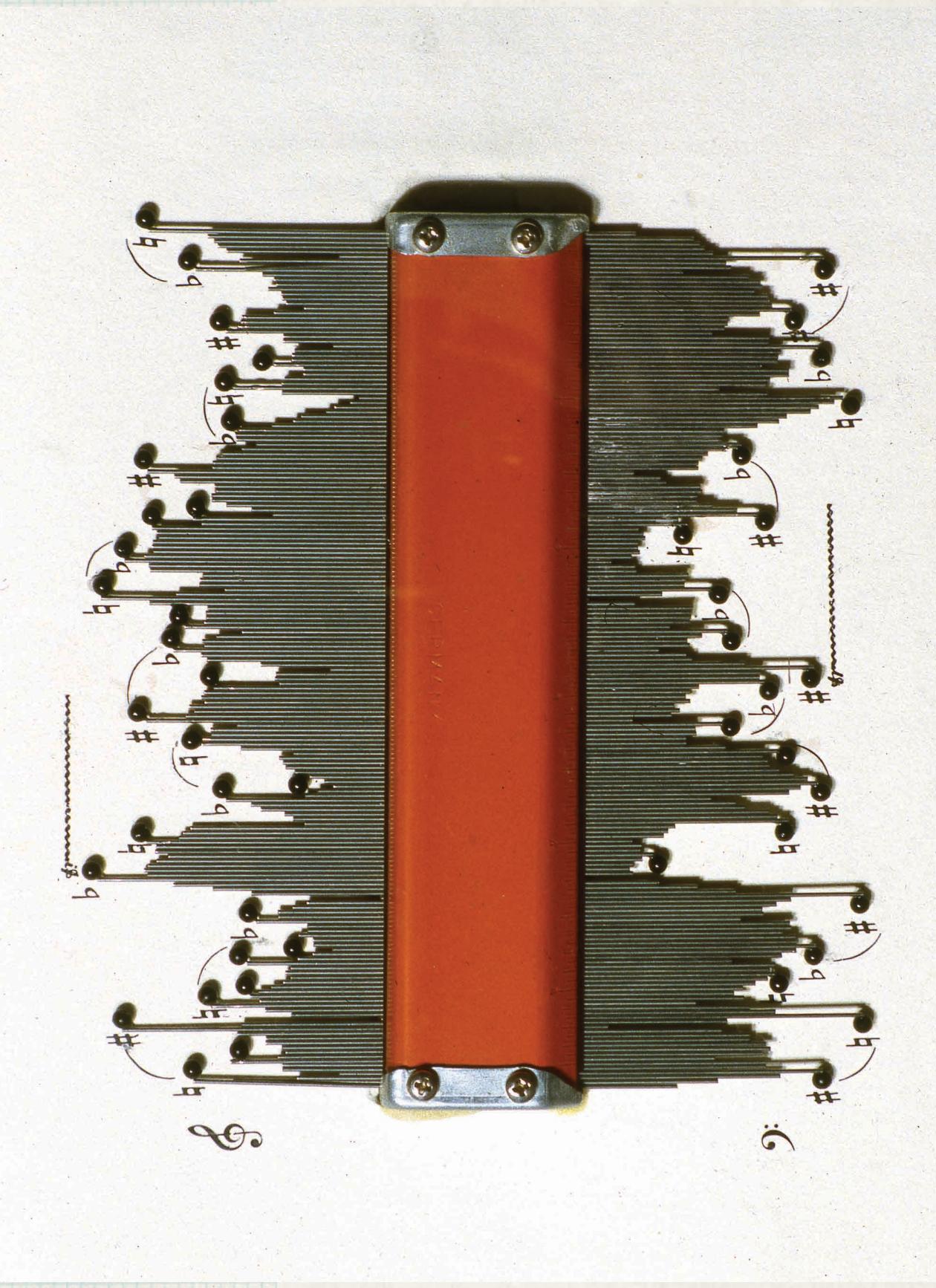
William Hellermann; *To Brush Up On*. For any instrumentation. Used by permission of William Hellermann, © 1976.



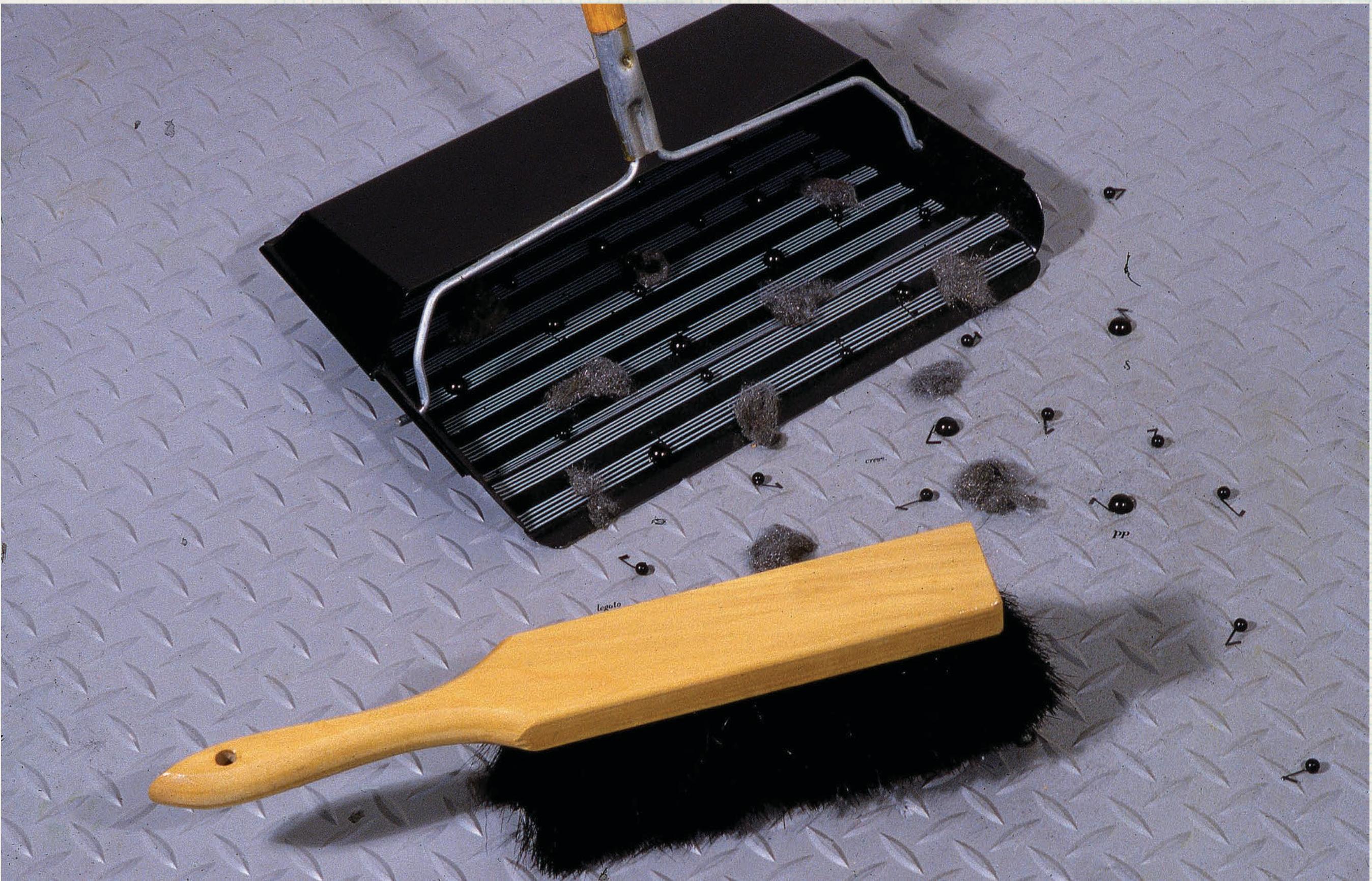
William Hellermann; *Experimental Music*. For any instrumentation. Used by permission of William Hellermann, © 1973.



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

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 score 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 sound 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)

(2)

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 openness 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 work to be true to the vision and not to alter it to make it into a 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 realized 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 yantra and to mandalas 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 not 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

(4)

ways it is both ways (anyway who wants to have it one 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 ut 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 hat 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)

(5)

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 preferred 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

(6)

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,

Bill

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."