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SPECIAL ISSUE

COMPOSERS

Edited by DANIEL N. THOMPSON

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Editor's Preface

For myself, most of my observations about my work are after the fact, and a technical discussion of my methodology would be quite misleading.

—Morton Feldman

Welcome to *Current Musicology* #67 & 68! We have produced a couple of other special issues over the course of the past few years, but this one is perhaps the most exciting and, in some respects, radical. In fact, there is a school of postmodern ethnography that attempts to "get out of the way" of the interview, and let, as far as possible, interviewees and other mentors in the field speak for themselves. For these postmodernists, authorial voice, in a monograph or anywhere else, is a vestige of modernist practice. This preface is not the place to examine the issue, but this particular credo *is* similar to what I had in mind when I asked the 30 composers presented herein to answer the question: Who are you that you compose music the way that you do? The solicitation letter read, in part:

> We are requesting that composers write about some aspect(s) of their own music, and to connect how they compose to other biographical issues (examples of which could include their training, musical influences, aesthetic or philosophical perspectives, political views, or other personal beliefs). In other words, we invite you to write about your compositional techniques, but preferably contextualized socially and culturally (i.e., we are looking for more than just structural analyses; we are looking for discussions that center on *how* a piece or group of pieces was/were written, and *why* the music was composed the way that it was).
>
> Essentially, the questions of how and why a piece or passage came to be written point to the following: Who are you? Who are you that you write music the way that you do? Why do you compose?

As I read the initial manuscripts, what I was most struck by is the sheer diversity of compositional attitudes, approaches, techniques, and ideals. To cite just a few examples: Set-theoretic approaches inform much of Jay Eckardt's work; Larry Read enlists various isochronal procedures. Julie Harting is a twelve-tone composer, and Chris Washburne writes Latin jazz. The incorporation of non-Western elements characterizes much of the work of David Hönigsberg, Chen Yi, and Lou Harrison; the computer, on the other hand, is central to any discussion of most compositions by Chris Bailey and Doug Geers. Rock and other forms of popular music have influenced Davy Temperley and Steven Mackey, while the continuing investigation of pure-wave tones produced by oscillators has occupied Alvin Lucier for several years.

On the continuum of possible answers to the primary questions—Who are you and why do you compose?—some of the composers focused their essays on compositional systems and structures while others provided more biographical detail (while yet another answer to the question was provided by Elliott Sharp, who provided only performance instructions and a score). In short, "Who are you that you

write music the way that you do?" is a question that has been answered in 30 different ways in this special, double issue of *Current Musicology*.

Another thing that will be noticed is that not all of the composers in this issue belong to the Western cultivated tradition. Nor does the act of *composing* (i.e., putting together sounds) only comprise the drawing of dots and circles on staff paper. Some people compose music with conventional musical instruments; some compose with staff paper and pencil. Some artists compose with synthesizers, while others compose with turntables and DAT players. Finally, for many composers today, programming a computer constitutes the compositional act. Composition, then, is broadly defined: Just as Chopin "put together" the sounds the piano made available to him, disc jockeys put together the sounds made available by vinyl records, while composers of computer music put together *and* invent (or is it still "putting together," but at a different level of sonic organization?) the sounds they use to compose.

Several composers thanked me for asking them to contribute, and on more than one occasion it was remarked that musicologists don't often enough ask composers questions that they should ask them. I can't speak for all of those ostensible occasions, but I can say that I think that this special issue goes some small way toward providing a forum for a few composers to speak (almost) for themselves.

* * *

Before closing this preface with my traditional expressions of gratitude, I must first express my sorrow upon learning that during the final production stages of this special issue of *Current Musicology* Earle Brown succumbed to a lengthy illness. It is a bittersweet honor to present Brown's final work of prose within these pages. He will be missed.

* * *

This is the largest issue of *Current Musicology* ever published, and my final issue as editor-in-chief; thanks are clearly in order. Once again, primary gratitude is due the authors, whose contributions have made this issue possible. I will also take this opportunity to thank Jim Zychowicz, Matt Grzybowski, and the rest of the team at A-R Editions for doing such a great job of typsetting *Current Musicology* over the course of the past few years; at Columbia, I am grateful to Anne Gefell and John Carr for all of their help, and (especially) Michelle Aluqdah for numerous acts of kindness. I also appreciate the support and assistance of Dieter Christensen, Fred Lerdahl, Joe Dubiel, Jonathan Kramer, Elaine Sisman, and the rest of the Advisory Board, as well as the efforts of Ruth Sara Longobardi, Jason Eckardt, and Mark Burford. Finally, I am enormously grateful to Rebecca Kim, who is a fine writer, responsible scholar, and extraordinarily good editor. This special, double issue of *Current Musicology* is dedicated to Joyce Tsai.

—DNT

Realizing Musical Gestures with the Computer: Paradigms and Problems

By Christopher Bailey

I have a gesture, a musical shape, in my head, and I want to translate it into actual sound. A simple task, it would seem; after all, this is my job, I am a composer. Why should this process be more difficult on a computer (where I have, supposedly, complete and direct control over sound), than with live musicians, where my ideas are (at the very least) twice-filtered—through the sieve of notation and through the sieve of the mind of the reader of that notation, with all of that mind's training(s), tradition(s), etc.? How do I approach the creation of a gestural language on this instrument that has so recently blossomed into a real compositional tool? To answer these questions, I will step back for a moment, and discuss briefly some aspects of the composition, notation, and performance of musical gestures for acoustic instruments.

When writing for the latter, I am heir to what might be thought of as a huge bias—a lens, prism, or filter—through which any gesture notated in the Western system of notation becomes, as it is played by Western-trained musicians, related or relatable to the vast repertoire of traditional Western musical gestures, built up over centuries. The action of this filter is reinforced through the traditional structure of Western (classical) music-making:

(1) By the composer, because of the fact that I rarely (relative to the number of gestures I compose) choose to write something that isn't part of this inherited repertoire in some way, and because my mind, aiming for efficiency, instinctively guides me, whenever possible, toward making use of what I already know; and through the fact that notation itself also filters my compositional output.

(2) By the performer, who interprets whatever events I notate, no matter how exotic, complex, or bewildering, into something at least dimly relatable to a traditional gesture.

(3) Finally, by the listener, who, when trying to make sense of a performance of my music, will, again, no matter how unfamiliar it might be, (try to) relate it to his or her own cultural experience (for most of my listeners, the Western concert tradition).

One can look on this filter with a kind of resignation, perhaps feeling that there is, and never will be, anything new under the sun. But let's take a look at some of the things that happen when a composer tries to resist

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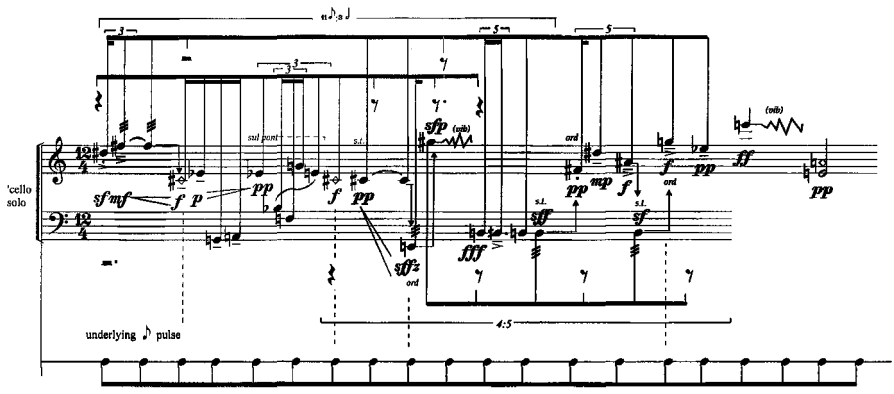
the action of this filter, when this reliance by composer and performer on tradition is stretched nearly to its breaking point.

The score to *Megalomaniac,* for solo cello, contains a number of passages of rather nasty-looking notation. Part of my purpose in writing these passages was to see how the performer would come to terms with the notation, to see what, in fact, the performer would do to "traditionalize" these hideous "things" (pieces of notation). That is, I wanted to see how the performer would pass (or perhaps, *squeeze*) the musical work through the filter that I've been talking about—an action they must commit for the sake of sheer "survival," negotiating some way to wade through the complexities of the musical moment.

Here is an example of such a passage:

Figure 1: *Megalomaniac,* for solo cello, excerpt.



How might a performer approach this passage? I offer some advice in the performance instructions to the piece:

> The piece might be approached as follows: learned at first in a "lick-by-lick" manner, perfecting each individual gesture and giving the said gesture a maximum of expressive and dramatic content as suggested in the score. At this point in the learning process, the player should be concerned, more or less, only with the basic 8th-note pulse, and how the activity above relates to that pulse. In other words, at this beginning stage of learning the piece, it can be treated as a "graphic" score, rhythmically, with the stipulation that all gestures be learned with respect to the underlying 8th-note pulse. (The pulse is indicated underneath the score.)

> After the individual gestures are learned, the player then proceeds to string them together, into larger and larger formal units. At first, this process should still take the rhythmic point of view of "graphic score against basic pulse," but as the general flow of the work comes into fruition, the player should attempt to feel the larger-scale rhythmic strands that are interacting. For example, in a passage that is composed of a 7-tuplet and an 11-tuplet strand interacting, "feeling" the passage "in 7" or "in 11" will reveal different shades of meaning brought about by different weightings of rhythmic strands. It is this kind of interpretive exploration that I hope the piece's complexity, in terms of its rhythmic notation, will inspire. (Bailey 1997)

It is in the "perfecting [of] each individual gesture and giving the said gesture a maximum of expressive and dramatic content" that the filter of tradition will no doubt come into play in the strongest way. On the other hand, the "stringing together into larger and larger formal units" is where something new happens. I like to think of this piece (and others written in a similar vein) as a series of gestures, many with strong associations, musical or extramusical, but ripped out of context, and with those associations "left hanging," perhaps posing unanswered questions, often with these gestures toppling over one another, frequently denying or canceling one another's associational implications. This makes for a difficult musical experience, for performer and listener, one which taxes one's ability to concentrate and give each gesture the focus it deserves. To pose that kind of challenge was, in this piece, one of my goals.

With acoustic instrumentalists, this filter, this bank of assumptions is in operation. When you give them something different, something wild, outside of their experience and training, they attempt (assuming they approach it in good faith) to give it what is called a "musical interpretation," to render it as some warped form of (their) musical tradition. It is this interaction that I often seek when composing for performers.

It is important to note that many aspects of the filter are built into the physical characteristics of instruments themselves, their methods of sound-production, and the way a player moves to cause that sound-production. This is, in turn, passed on to notation. If I want to get a particular gesture out of an instrument or group of instruments, I know how to notate it, based not only on my musical aural training but also on my ability to imagine the gesture's physiological instantiation in performance.

With the computer, especially with synthesized (as opposed to sampled) sound, this is not the case. Everything must be done from scratch. When I first started to realize music on computer, the following would often occur: I would think and hear a gesture in my head—"oomph"—and attempts

to realize that gesture, through programming, sound synthesis, mixing of samples, and so on, would result in "aaamph" (so to speak)—not quite (or sometimes quite distant from) what I originally wanted.

At that time I had little knowledge of acoustics, so it was often difficult to ascertain why a gesture wouldn't come out the way I wanted it to. Now, armed with a greater knowledge of acoustics, I often know *why* a gesture doesn't come out the way I want it to, but it usually turns out that the *how* of correcting the problem would lead me into a complex, low-level web of research into software and acoustics—a path that (although I have some interest in it) I'm not really qualified to follow, and I'm not really interested in following: as a composer, I want to be given a set of reasonably flexible tools, and make use of them to create effective music. It is, of course, possible to make quite effective computer music without losing oneself on that full-fledged programmer/acoustician path. But in that case, the approach one takes towards the creation of gestures, and thence to complete compositions, is fundamentally different from the one taken when writing for acoustic instruments.

Put simply, I take less of an "I've got to get *this* gestural effect" kind of approach, and more of a "Let's experiment with what this machine does: generate some musical material consisting of gestures whose characters and effects I can't quite predict, and figure out how we can modify the musical *contexts* in which we place those gestures so that the gestures 'work' (musically and dramatically)" kind of approach.

The experimental process whereby I "generate some musical material" is partially an intentional one, partially an arbitrary one: I might begin by trying to get a certain gesture out of the machine; what comes out is something different from what I had in mind originally. I may then try to modify the gesture to get it closer to what I wanted originally, changing the parameters I gave the machine to create the material; but eventually I change paradigmatic gears entirely, and I begin to think about how to shape context A to accept or fit gesture X instead of how to achieve gesture X to fit context A—in other words, *creating* the context that will make things seem as if the accidentally created gesture was not accidental, but created *for* the context.

This is part of my composing process in works for acoustic instruments as well, but it has a special relevance for computer music, since the relationship between what I tell the computer to do and the resultant sound is far less well understood than the relationship between what I tell an acoustic instrumentalist to do, notationally, and the sound that is produced. The plethora of unexpected material coming out of the machine demands this approach.

Of course, as one continues with this looser, more experimental approach to sound and sound-gesture creation, something that starts to re-

semble a "tradition" is built up, amazingly fast. One learns quickly the kinds of effects that most often result from certain methods of sound synthesis on the computer. Frequency modulation, amplitude and ring modulation, physical models of instruments, different types of sound processing, and so on, all have their characteristic tone colors or families of tone colors. Extrapolating from there, typical resultant gestures or families of gestures, with corresponding emotive associations, arise from the use of a given computer music tool.

Computer music history itself is, in large part, the story of a series of discoveries of new sound-generation techniques, each followed by a flurry of excitement and new pieces that use the technique; then the gradual realization that, as Milton Babbitt put it, "Nothing gets old faster than a new sound." The technique is then absorbed into the community as simply another tool for making sound.

This lesson of history I have taken to heart; hence, I try to focus my compositional energies not (entirely) on the method of synthesis of a particular gesture, but on its harmonic, rhythmic, and timbral content/context. I deliberately do not seek out "new" sounds; rather, I try to use old ones, to combine and recombine them in a rapid kaleidoscopic fashion to produce event-complexes in which the interaction of different sound components, though they may each be individually familiar, yields a combined event-complex that, in a subtle yet striking way, is something new.

Thus, in my first mature computer music work, *Ow, My Head,* I decided from the start not to utilize any kind of synthesis or processing at all, but to deploy into the musical fabric only raw, unprocessed, recorded *musique concrète* sounds from the environment. In all of my pieces that use this type of material, the sounds are usually recorded in one *place* (in the case of this piece, the house where I grew up, in the 'burbs of Philadelphia). Although this certainly does not provide any source of immediate sonic or musical unity, it does provide for me, psychologically, a desired *spiritual* unity—a unity of spiritual source, so to speak.

I'll say a word about why I choose to use concrète sounds in particular (out of all the choices of material provided by computer music composition). What I find fascinating about the use of "found sounds" is the emotional effect of the *displacement* of a sound—a sound with a very clear origin —*from* its origin. Each sound brings with it an illusion of its original space or place, be it a kitchen, a washroom, a subway train, or whatever. Yet the sounds are brought together in a "musical" space. I find that the interaction between these spaces has a powerful emotional effect in the mind of the listener. It is similar to the effect one experiences while watching a movie with bright, sunny, images: sometimes the mind loses itself in the illusion of the sunniness, then it realizes that all of this is taking place in the

darkness of a movie theatre, possibly in the dead of winter around midnight. There is something almost frightening about this paradox (similar in character to the idea from physics that 99 percent of matter is actually empty space). This kind of spooky disjunction is the emotional basis of my attachment to concrète sounds.

On a more technical level, musique concrète is (still) a wide-open field of discovery, in terms of the idea, mentioned above, of combining sounds together rhythmically, harmonically, and timbrally to produce new event-complexes or meta-timbres. About *Ow, My Head,* I am often asked how I processed (filtered, reverbed, delayed, etc.) or synthesized certain sounds. In fact, there was no processing, no synthesis; instead, the particular *combinations* of raw sounds in the piece, achieved only through relative rhythmic and amplitude adjustment, produced the "new" meta-timbres.

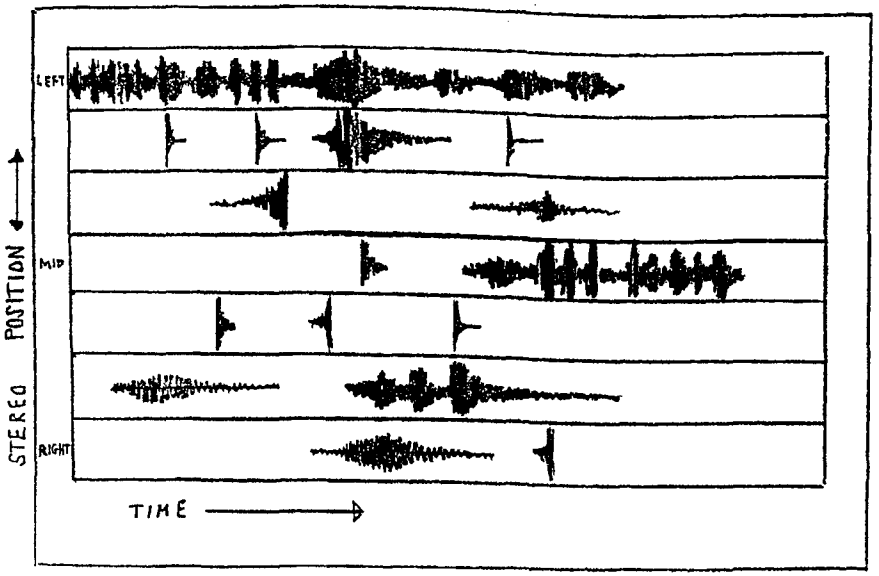
The piece was composed in small blocks, each consisting of a sequence of only a few gestures (something analogous to a phrase). Later, the blocks would be joined to form sentences and, eventually, a complete form for the work.

The process of composing a gesture, or a small sequence thereof, was, in general, something like this: "Spray" a random set of sounds (a subset of the complete set of about 200 sounds, varying in duration from 0.2" to 5" or so) into a mix. Adjust their rhythmic positioning, amplitude, etc. to make a viable musical gesture. With appropriate rhythmic and amplitude adjustment of the component sounds in a mix, a context will be created whereby every sound fits, and coherent line(s) of rhythm and pitch (arising from the sometimes obscure, sometimes quite clear, pitched qualities of found sounds) will be formed. Later, the gestures themselves are treated the same way, to make phrases and, eventually, the complete piece.

To explain exactly what I mean by "spraying" sounds randomly into a mix, it might help if I say a bit about sound-mixing programs. The principle of all of these programs is quite simple. A visual display is used to represent the sounds and their placement in time and (stereo) space. The x-axis represents time, the y-axis represents stereo position, from far left to far right. Each sound is represented by a shape, which represents its amplitude curve (see fig. 2).

Note that the tricky part about this is that pitch-content is not displayed in any way. With found sounds, pitch-content is often complex, so that a simple "score" representation (i.e., each sound having a single fundamental "pitch") would be problematic. In the case of this piece, I relied mostly on my ear and aural memory to keep track of what sounds were associated with what pitches, in order to be able to construct contours and harmonic combinations of the pitch-contents of different sounds.

Figure 2: Typical mixer image.



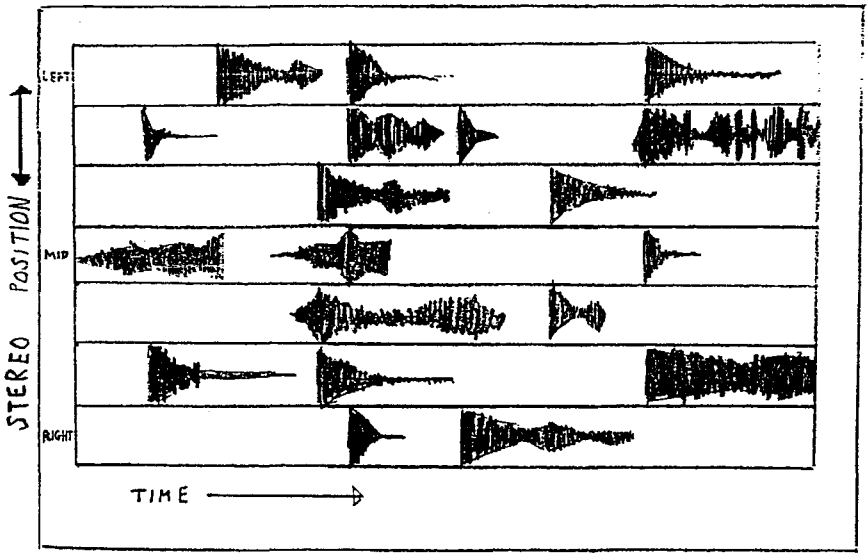
The next step is to hone the "sprayed" mix that appears. There are a few common methods I use to hone the randomly generated sound-sequences:

1) The most common technique is to line up attack-points (or points of high amplitude) between selected sound objects (see fig. 3). Since the ear will often hear several sounds with the same attack-time as a single, new, combined sound or timbre, these kinds of events probably account for people's questions as to what processing and/or synthesis techniques I use: the new events seem familiar, yet skewed in some way.

2) Frequently, I will use these simultaneous attacks as goals (or origins) of rhythmic activity for preceding (or succeeding) sound complexes. Then I will use increasing or decreasing density of sounds (i.e., *accelerando* or *decelerando*) as rhythmic patterns of approach to, or departure from, these goals.

Hence, the music (especially in this piece) often becomes a series of waves. I like to think of my use of waves as being analogous to Elliott Carter's use of wave-forms in his large ensemble pieces (*Concerto for*

Figure 3: Lining-up attacks 'twixt sounds.



Orchestra, Double Concerto, etc.). As in Carter's works, some of the waves in *Ow, My Head* are composed of simultaneous, overlapping tempi.

One of the ways I like to work as a composer is in a kind of dialectical manner, taking aspects of two seemingly unrelated compositional languages, and combining them to form something interesting or expressive in some way. In this piece, I was interested in taking the rhythmic language of the "uptown" New York composers (Babbitt, Carter, Davidovsky, etc.) and applying it to a sound-world not explored by these composers, that of concrète music.

Hence, Carter's waves of overlapping pulses in different tempi, Babbitt's rapid, unpulsed, and highly individuated rhythmic cells, and Davidovsky's play of different timbres on the same pitch are all elements to be found within this piece.

3) Returning to the subject of different methods of building musical gestures with concrète sound material: More difficult to explain (mostly because it depends very heavily on the particular sounds used in a particular context) is the use of timbral/harmonic characteristics of the sounds themselves to guide their placement in relation to one another. Often this amounts to something similar to common-tone modulation in tonal music; we might call it "common-partial modulation." Thus, two successive sounds may be very different in terms of features such as attack-hardness,

fundamental pitch, presence or absence of internal repetition or agitation, etc., but the ear will still hear these timbral/harmonic connections between them; or, a certain sound might "fade in" from another's timbre, entering in a smooth blend (having several common partials) with the first, thus forming a line begun by the first sound. A chain of such relationships can create a continuous line of timbral change (see fig. 4).

In either case, the continuity of certain partials allows the ear to hear the sequence as developmental, and is thus an important way of achieving the coherence of a gesture or phrase.

There are other, analogous ways of achieving continuity and coherence. For example, noisier sounds, with no strong individual partials, can be thought of as frequency bands of noise in a given register. Thus they can lead smoothly to other acoustically and spectrally similar sounds (see fig. 5).

Another kind of progression illustrates the exploitation of a psychological-analogy relationship: in *Ow, My Head* (4:07) the sound of a toilet flushing (essentially a band of noise, acoustically) and the sounds of vocal weeping (vocal tones with downward glissandi) are heard in counterpoint. To my ear, this meshing works particularly well, and the reason is not an acoustic one; rather, it is because both sounds communicate a sense of *down:* toilets flush *downwards,* and weeping involves *downward* motion (of musical pitch, spirits, tears, and so forth).

I would like to mention a few observations concerning large-scale form that I made while composing *Ow, My Head.* Many of the sound-objects in the piece return later, still unprocessed, but recombined in various ways. (These returns are usually at some distance from the original appearances, for I wanted to avoid the "sampler" effect of repeating a recorded sample immediately.) One of the most prominent of these returning *leitmotivs* is a set of long, vocal tones, often combined to create a choral harmony, tuned approximately (see fig. 6).

No doubt its perceptual prominence is due to the fact that it functions as a sort of signifier of traditional pitched-instrument composition. (This is another example of that "tradition filter" affecting the listener's end of things.)

The gesture-sequences of the work were composed independently, without any thought (at the time of their composition) of how they would eventually be strung together into a larger form. This lack of precompositional large-scale formal planning was intentional, for I enjoy, as part of the compositional process, watching large-scale relationships (echoes/flashbacks, premonitions, *leitmotivs*—like the vocal chord) appear spontaneously as I mold the gesture-sequences into an effective large-scale musical form.

Figure 4: Continuity through common partials.

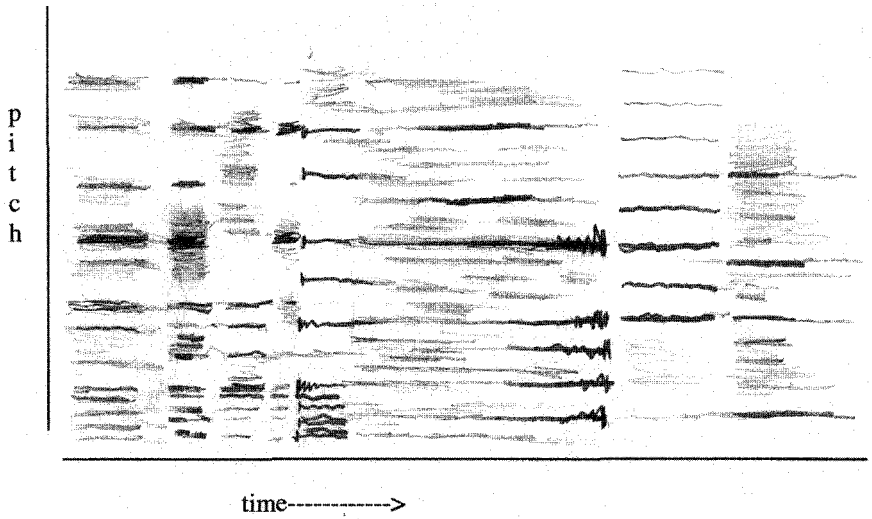


Figure 5: Continuity through similarly pitched bands of noise.

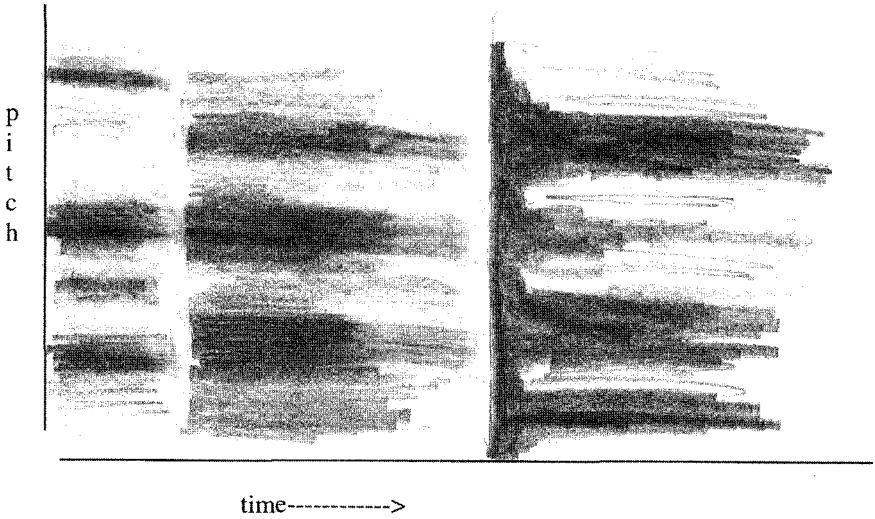
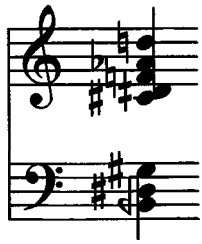


Figure 6: *Ow, My Head,* vocal chord "leitmotiv."



The ending of the work gave me some difficulty. Originally, I wanted the piece to lack any sort of obvious climax, to end abruptly, and thus to be a sort of window onto a sequence of gestures, a sequence that flowed nicely but did not necessarily feel the need to go anywhere. In the end, I felt I wasn't achieving this goal effectively, and thus the second half of the work became a more consciously kinetically formed event-sequence—a build to a climax.

Ow, therefore, ended with a fairly traditional kinetic build-up. *Duude,* my next computer music work, ended up relating to musical tradition by being, formally, a kind of rondo-like alternation between two textures.

One of these textures came into existence as the development of one sonic idea. Occasionally, a single sound suggests an entire sequence of gestures. In *Duude,* one of the sounds I found (a creaking door), when slowed down by a factor of about 20 (without changing the pitch), produced a sound that reminded me of some sort of blaring, "dirging," medieval, bass trumpet. I decided to make this the entire basis of certain sections of the piece. I deployed a single, long line of "door trumpet," counterpointed against smaller fragments and phrases of itself, to create an entire ensemble of door trumpets.

The second of the main ideas making up the quasi-rondo came from my desire to achieve maximum rhythmic density, for at least parts of the work. In *Ow, My Head,* I had been more concerned with the idea of individuated, clear, musical gestures, or small sequences of gestures. In *Duude,* I wanted to achieve a massive gestural density—one in which the individual sounds could still be more-or-less clearly made out, but where their toppling over one another would create a continuous, frenetic web of sounds.

To achieve the "frenetic web" texture, my working procedure went something like this:

To begin with, as in *Ow, My Head,* I had a collection of found sounds, about 300 of them, the basic material for the work. Most were very short—objects (bottles, plates, silverware, etc.) being scratched, hit, rubbed, etc. I decided that these high-density "wads" of concrète counterpoint would

be, at most, a minute long each, a minute into which I'd pack all 300 of my basic sounds. The procedure for making these wads thus became one of randomly spraying the 300 sounds into the first minute of the mix, then, as in *Ow, My Head,* adjusting the timing of the sounds in the wad so that each sound would flow, lead, or leap into the next one(s). The difference was that this time, high-density sound per unit time was a guiding desideratum.

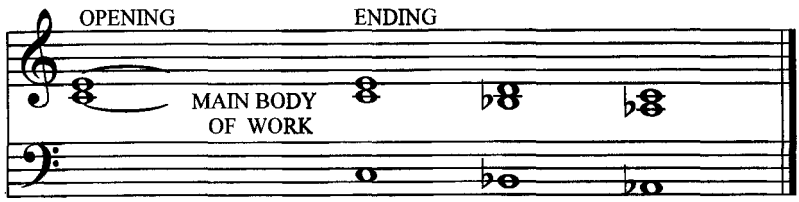
In this piece, I also began to worry just a small bit about issues of large-scale pitch structure. In *Ow, My Head,* I had wanted to leave the pitch domain in a "primitive" state. That is to say, only on the local level, where the harmonic/timbral content of the different sounds led me to sequence them intuitively in a certain way, was there a pitch structure of any kind. This had been an interesting departure for me, since in my acoustic-instrument pieces, I'm fond of using various types of algorithmic techniques (e.g., especially serial) to generate pitch-structures. The development of the latter is usually the first stage in the (pre)compositional process of these works. On the other hand, in these computer music works, any pitch-structure was more of a resultant, a by-product of the random sound-spraying and local rhythmic adjustment.

This was certainly the case with *Ow, My Head.* With *Duude,* I decided to introduce a very simple large-scale pitch structure. One of the sounds I collected, that of air being blown through a bottle, was pitched on a middle C (C4). I decided to build a major third on this pitch; this dyad is emphasized near the beginning of the piece. At the end of the work, in the first explicitly pitched and "synthesized" texture of this piece, this third returns, but this time followed by a slow descent through two other thirds, to make the whole-tone scale progression shown in figure 7. This structure, simple as it is, manages to quite effectively impart a sense of rest and ending to a work filled to the brim with density and activity.

In my next major computer-music work, *Ooogaaah: Dungeony Specimen Spaceship,* I dealt with pitch in more complex ways. I was also dealing with the idea of gesture on a new level, since the piece was written in collaboration with dancer/choreographer Ania Majewska.

This aspect I found to be particularly inspirational. As a composer, I'm very susceptible to "metaphorizing" visual images, structures, gestures, and so on, into sound. (Perhaps this is the reason for my concern with "gesture" to begin with: music as a sonic modeling of bodily—or other—movement.) The collaboration process behind this piece was interesting: at first, we agreed upon a large-scale kinetic (density/energy level) form for the work (see fig. 8). (It happened that, eventually, when all of the music had been composed and realized up to 66, we decided to end the piece.) This, then, was the gesture of the piece on the large scale: a gradual loss of

Figure 7: *Duude* "pitch structure."



energy. I also mapped this gesture onto other domains. For example, the piece gradually moves from humorous/silly to a more "serious" mode of expression: it begins with more noisy or percussive sounds, and moves towards being dominated more and more by pitched music. Registrally, the piece develops from activity localized in the middle register, to activity filling extremes of low and high; there is also a gradual process that reveals the harmony upon which the piece is based.

Our agreement at first was to divide the piece into small sections; I would compose music for the first small section, she would compose dance for the second, I'd compose music for the third, etc. Then we'd switch over and compose our respective other domains for the sections.

However, this process was not followed with any respectable degree of discipline, mostly because dance is normally composed in a much shorter time than music. Ania completed her assigned sections of choreography well before I completed my assigned sections of music; I ended up seeing many of her movements before I had finished the sections I was assigned to write music for. Because visual images and gestures are, as mentioned earlier, such a vivid inspiration for me, the piece was ultimately written more as music-to-choreography rather than the other way around, or as the balanced mixture we originally intended. This affected the gestural content of the work.

As I mentioned earlier, this work used pitch and pitch-structure much more consciously, including the use of synthesized (not just concrète) sounds as explicit carriers of structural pitch information (i.e., like instruments in most acoustic-instrument music); of course, adding pitch to the gamut of materials in use greatly increases one's ability to form musical gestures.

I'll say something about the derivation of pitch structure in this piece, since it involved another of my quasi-dialectic ideas mentioned earlier. I

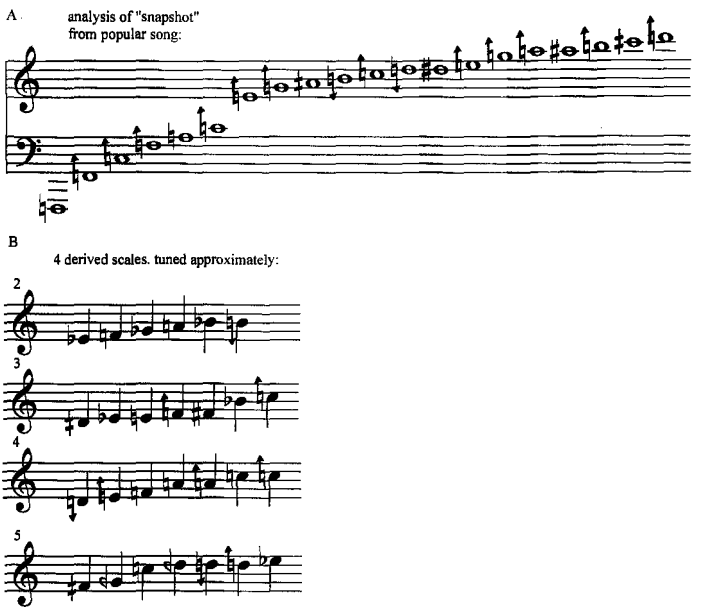
Figure 8: Kinetic- and work-plan for *Ooogaaah: Dungeony Specimen Spaceship.*

Section numbers. Single digits were to be composed: music first, dance second; double digits: the reverse.

had recently come into contact with the music of the French spectral composers (Tristan Murail, Gérard Grisey, etc.), and also with music of their American cousins, the just-intonation composers (particularly La Monte Young, Harry Partch, Ben Johnston, etc.). Both schools are involved with microtones. Generally, the spectral composers derive vast harmonic complexes from analyses of real-life timbres; usually these complexes are variations (distortions) of the overtone series, although occasionally they experiment with inharmonic timbres (such as that of a cymbal). The just-intonation composers derive their pitch material directly from the *pure* overtone series, but unlike the spectralists, they transpose the tones, with octave duplications, to form scales. (Generally speaking, recent European composers tend to regard the idea of using a scale—especially over a large span of time—as an old idea; musical passages based on scales aren't found in very many current European scores.)

For this piece, then, I decided to combine these ideas: I would derive scales, but from analysis of a real-life sound, rather than from the pure overtone series. The real-life sound I chose was an instant from a popular song. The frequency analysis of the "snapshot" is shown in figure 9, along with four of the scales derived from it, which I used in the piece. (The chord derived from this moment also appears in the piece, explicitly as a harmony, towards the end of the work.)

Figure 9: "Ur" chord and derived scales from *Ooogaaah: Dungeony Specimen Spaceship.*



In this piece, sound material is created using the many different computer music techniques at my disposal. Concrète material is mostly limited to extremely scratched-up LP records from my childhood. Synthesized material was created with well-worn techniques: as I mentioned earlier, my intent was not to present "new" sounds, but to present old sounds in new, complex combinations. Hence, in this piece I used plucked-string imitations, bell-like timbres produced with frequency modulation, and many samples of pitched instruments, including my own voice.

Integrating the less obviously pitched concrète material with the overtly pitched material was done with several simple techniques. The first was to use the noisy concrète material in a traditional, adjunctive manner (i.e., as percussion, to mark off phrases or sections), to add "unsolicited commentary" in the name of humor (most of the concrète material consisted of text fragments, noises, and sound effects—all masked by a large sheen of noise arising from the scratched surface of the LPs), and occasionally to mark metrical rhythms.

The other method of integration was to process the concrète sounds to bring out inherent pitches within them, which could interface with the pitched elements of the rest of the musical context. Usually this processing involved fairly straightforward filtering—emphasizing partials of the sound that matched those of the reigning harmony at a given musical moment. For examples of this, as well as the idea of transferring gestures from the choreographer's ideas to music, I will now speak about some of the events in the first minute of the work, the most gesturally frenetic of the piece.

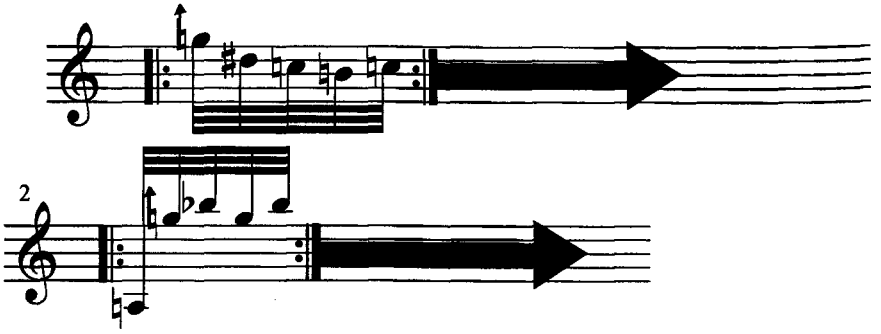
Ooogaaah begins with an introduction of several text fragments, followed by approximately three seconds of a machine-like texture, which consists of several noisy text fragments, looped in different tempi, in counterpoint with one another. This "machine texture" was in fact inspired by machine-like, repetitive, mechanistic gestures on the part of the dancer.

The next gesture in her choreography sequence consisted of a repeated leaping motion; I matched this musically, introducing the first bit of pitched material into the piece, derived from a small cut of the original harmony (see fig. 10).

I realized the pitches with samples of a piano. Since the instrument I recorded was already badly out of tune, I decided to take advantage of the computer's capabilities and have the tuning of the piano samples waver with each repetition of the gesture. The machine-like gesture/texture then appears again, but this time, as I hinted previously, filtered by the first of those scales listed above.

This alternation between the "machines" and the "leaping" continues, but the textures themselves begin to develop. For example, the leaping ideas become more complex in terms of contour. More complex contours

Figure 10: "Leaping" gesture derived from "Ur" chord.



were produced with the aid of a (very rudimentary) computer "improvisor" programmed in the computer language LISP. The process, or algorithm, followed by this improvisor was something like the following:

(1) A set of contours to choose from:
(numbers indicate # of scale-steps)
+1 +1 +1 +1 −1 −1
−1 −1 +2 −1
+1 +1 +1 −3 −4 +2 −1 +2 −1
etc.

(2) A set of rhythms to choose from:
(duration/attack-distance in units of pulse)
2 1 2 1 2 1 1 1 1 1 1 3 1
1 2 1 2 3 1 1 1 2 1 1 2 3 1 1 1.5
3 1 1 2 1.76 1.35 1 1 1
etc.
(decimal fractions add a "micro-rubato")

(3) Produce a line of pitch contour from strung-together random members of the set provided above.

(4) Do the same for rhythm.

(5) Match up rhythm and pitch, and have the contour "play through" the reigning scale that is being used in whatever portion of the piece we're in at the moment.

(6) The composer edits the results, removing unsuccessful, or drab, portions of improvisation, and places the excerpts in appropriate musical contexts (that is, in a rhythmic relation with other elements of the mix to produce the most interesting musical result).

Having finished *Ooogaaah,* I moved on to write several instrumental works. However, during this time, I continued to think about some of the questions raised by my computer music endeavors, especially by the more concrète-based *Duude* and *Ow.* I wanted to get back to "achieving gesture X to fit context A" rather than making gesture X from randomly selected materials and then "shaping context A to fit gesture X." I wanted to accomplish this with collections of raw, unprocessed found sounds.

Much of the computer music world is concerned with processing a sound until it becomes unrecognizable. Recognizability and association may result in an affect that is too sentimental or "cheesy." This happens when the most relevant thing (or even the only thing) that the listener hears in the individual sounds in a mix are their associations. In other words, the listener thinks only, "Huh . . . these are pots from Christopher Bailey's kitchen"—not, perhaps, the most "musical" reaction. This is a worst-case scenario, and because of even the shadow of this possibility, many computer-music composers are driven to "hide" their sounds behind a wall of processing and transformation. This "safety procedure" does not interest me: I do not want to rid the sounds of all recognizability and therefore all associations; instead, my goal is to produce music where overall gestural shapes and phrases take precedence over the autonomy of the individual sounds, where the individuality of the sounds is sacrificed to these greater musical wholes—and yet, those individual associations and references are still there. This leads to a multilevel musical experience: structural musical listening (in terms of how a phrase or sentence works) *and* associative listening ("this finely crafted phrase . . . just so happens to be made of pots from Christopher Bailey's kitchen").

In order to produce a "finely crafted phrase" out of found sounds, we first describe the phrase as a sequence of events, each of whose parameters can be specified exactly. We store information about all the sounds in our source collection in a database. We can then ask the computer to search the database, matching the specified parameters of an event against the parameters of sounds in the database, thereby ultimately retrieving an appropriate sound for each particular event. What would such a database look like? Figure 11 shows a portion of one that I'm using for a current work-in-progress.

Each sound is described in terms of 11 parameters. The first, *filename,* is simply information about where the sound-file lies on the computer disk. *Duration,* measured in seconds, is self-explanatory. *Pitch* indicates one or more strong pitches or partials in the sound—most often, the fundamental or first harmonic. (It is indicated here in MIDI notation, where middle C = 60, C♯ = 61, etc.) Of course, some sounds have no clear pitch, and

Figure 11: Portion of a found-sound database.

filename	duration	pitch in MIDI format	loud-ness	attack hard-ness	bangs list	noisiness/ harmonic	color	agitation	material/ category	tessitura/ register
("ds4.pan.rhythm"	1.619	(63)	5	6	(0.057	0.31 0.52	0.695 0.857	1.464)		
						4	5	7	("metal" "rhythm")	5)
("ds4.pan.scr.rhythm"	1.995	(63)	5	6	(0.066	0.499 0.938	1.677)			
						3	5	7	("metal" "scrape")	5)
("fs.pan.drum"	0.570	(66)	6	7	(0.0)	3	6	2	("metal")	4)
("fs4.cowbell.MONOIZE"	0.722	(66)	4	7	(0.0)	1	6	2	("metal" "glass")	4)
("fs4.jarscrape.RIGHTIZE"	0.737	(67)	6	4	(0.0)	5	4	5	("glass" "scrape")	5)
("h.creak.2"	2.32	()	2	2	()	6	5	6	("creak")	5)
("h.creak.3"	1.052	()	2	2	()	3	6	4	("creak")	6)
("h.cup.klink.4.RIGHTIZE"	0.66	(83)	5	7	(0.0)	3	7	2	("glass")	6)
("h.cymbal.pan.2.MONOIZE"	1.827	()	7	6	(0.009)	6	7	2	("metal"}	7)
("h.glass.bnk"	0.264	(84)	3	6	(0.0)	4	7	1	("glass")	6)
("h.hit.jiggle"	0.556	()	5	5	(0.1)	7	6	6	("blech" "metal")	5)
("h.jar.balls.shake"	4.169	()	4	3	()	7	7	7	("blech" "crunch")	6)
("h.klingk.2"	0.18	(95)	2	5	(0.0)	4	7	2	("metal")	6)
("h.klingk.gk.2"	0.295	(88)	3	5	(0.0)	3	7	4	("metal")	7)
("h.klingk.gk.complex"	0.643	(88)	4	5	(0.0 0.420)	5	5	5	("metal")	6)

therefore this parameter is left empty. *Loudness* is not about sheer amplitude or volume, but rather perceptual loudness—a light whisper is a qualitatively soft sound even when highly amplified. This parameter is measured from 1–7, as is *attack hardness,* describing the "violence" of the beginning of the sound—whether it fades in, enters with a bang, or something in between. The 1–7 range applies to many of the parameters.

The reader might recall, from the discussion of *Ow, My Head,* the idea of "lining up attack-points between different sound objects" (see fig. 3). The *bangs list* is a list of those attack-points. Later, we can use this information to have the machine line up those points automatically.

Noisiness/harmonic is also more or less self-explanatory: a voice or a bell would be a harmonic sound (value of 1); crumpling paper would be noisy (value of 7). Rubbing a washboard, producing both a pitch and a fair amount of noise, would be somewhere in between. *Color* describes whether the sound tends toward being "dark" (value of 1) or "bright" (value of 7). *Agitation* describes the internal state of the sound during its duration: is there much movement and change (for example, vigorous rubbing or scraping) (value of 7) or is there simply a decay (a bell rings) (value of 1 or 2), or something in between? *Tessitura/register* describes the general pitch register of the sound (even if it is too noisy to have an exact pitch), from low (1) to high (7).

Finally, *material/category* remains as a sort of catch-all "semiotic" parameter, describing associations, concepts or words that the sound brings to mind. Thus, often it is simply a matter of material (e.g., "metal," "glass") or action ("creak," "scrape"); sometimes it describes some important musical characteristic of the sound (e.g., "rhythm" if the sound is "rhythmic").

Measuring some of these parameters from 1–7 might seem very crude, but the crudeness is appropriately matched to the extreme heterogeneity of the materials. For example, what would be softer, a whisper or a recording of soft, distant ocean sounds? The question is a bit silly, yet we'd all agree that they are both soft sounds. Thus, 1–7 seems like a reasonable compromise.

You might imagine how this database would be used. As I began to describe above, we can essentially think of a musical gesture as a sequence of events, each event being described in terms of one or more of the above parameters.

Thus, a simple gesture might be: three short, high sounds, with hard attacks, descending in register, made of glass or metal; a couple of simultaneous, longish (two or three seconds), highly agitated mid-register sounds, slamming down into a low metallic sound, with a hard attack, not agitated but with a very long decay (see fig. 12 for a quasi-pictogram of the gesture). To the computer, we feed a quasi-spreadsheet of the same gesture (see fig. 13).

Figure 12: Quasi-pictogram of a simple gesture.

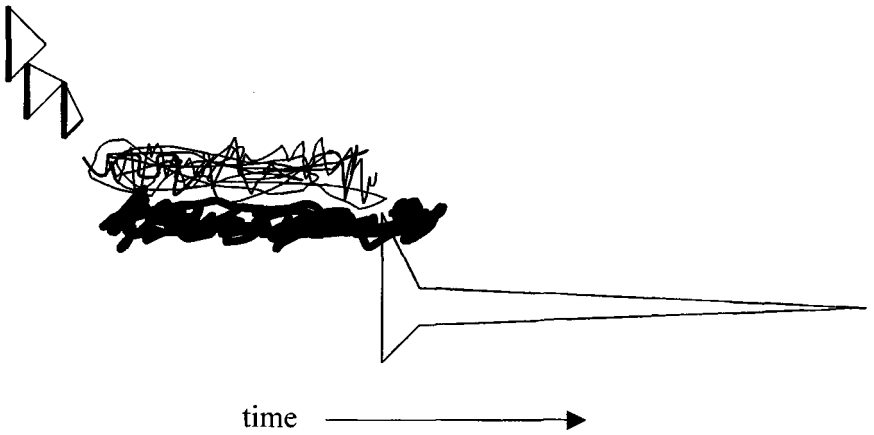


Figure 13: Quasi-spreadsheet of a simple gesture.

sound number	1	2	3	4	5	6
duration	0.0–0.2	0.0–0.2	0.0–0.2	2.3–2.7	2.3–2.7	4.0–6.0
perceptual loudness	6–7	6–7	6–7	6–7	6–7	6–7
hardness of attack(s)	6–7	6–7	6–7	any	any	6–7
how many bangs	any	any	any	0	0	1
noisy-harmonic	5–7	5–7	5–7	1–3	1–3	5–7
agitation	2	2	2	6–7	6–7	2
words	"metal"	"metal"	"metal"	"blech" "scrape"	"blech" "scrape"	"metal"
tessitura/register	7	6	5	3	3	1
start time for given sound	0.0	0.13	0.18	0.25	0.25	2.75

time

The computer, when fed the "spreadsheet," looks at each column, figures out what parameters a sound would need to have to satisfy the criteria of that column, and grabs a random sound from the collection that satisfies those criteria. It then places the sound in a mix (as in fig. 2), in which the composer may modify the order of the sounds, delete sounds, etc. Furthermore, it is easy to generate ten or twenty versions of a given gesture—each a different attempt by the computer to realize the specified gesture with a different combination of sounds—so that eventually the composer can get, more or less, the gesture he or she had in mind.

(Another possibility, of course, is that the computer will come up with something pleasantly unexpected.)

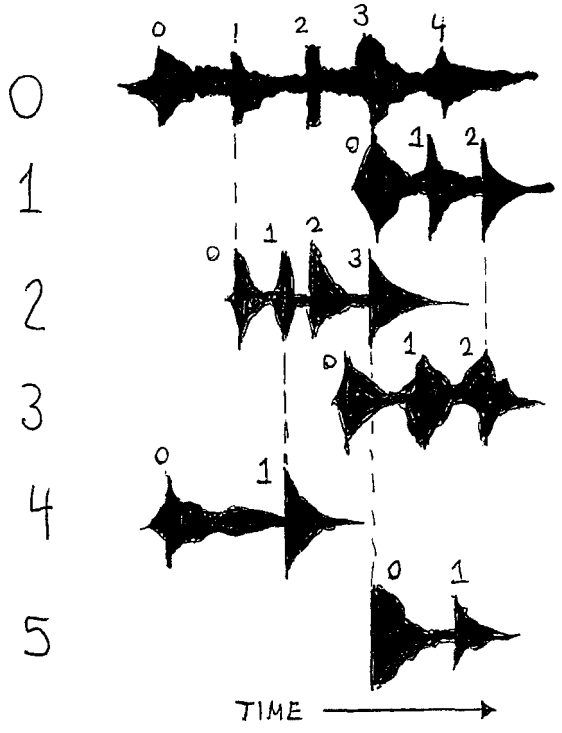
Finally, it is also possible to specify what I call a *bang tree.* This is a special rhythmic specification that arises from the *bangs list* parameter mentioned earlier. Let us begin with the pictogram shown in figure 14.

You can see that the idea is one of a gesture whose sounds relate rhythmically through their common peaks or attack-points—as discussed in *Ow, My Head.*

We can then feed to the computer a list of the qualities of these sounds (as in the example above) together with a bang tree: a list of how the bangs in the sounds relate in time. A bang tree takes the following form:

```
(mother-sound    (child-sound mother-bang child-bang)
                 (child-sound mother-bang child-bang))
(mother-sound    (child-sound mother-bang child-bang)
                 (child-sound mother-bang child-bang)). . . . . etc.
```

Figure 14: Sounds relating via "bangs."



Thus, in fig. 14, sound 0 is the "mother" of sounds 1 and 2. Then, in turn, sound 2 is the mother of 4 and 5, and so on. 1, a "child" of 0, attaches its bang #0 to sound 0's bang #3. Sound 3 attaches its bang #2 to 1's bang #2, and so on. Thus we get, as the whole tree:

(0 (1 3 0) (2 1 0))
(1 (3 2 2))
(2 (4 1 1) (5 3 0))

The computer's task is to find sounds with the appropriate number of bangs (as well as any other qualities we care to specify), and mix them as we request, placing them in time so that the appropriate bangs line up.

* * *

The idea of the gesture, its origination in the creative mind, and the way it shapes itself in the process of composition are, for me at least, very deeply intuitive processes, which seem at once too simple to even merit discussion ("you want it to go *oomph*? just write *oomph*!") and at the same time ultimately elusive. I hope I have made some tiny scratch on the surface of the understanding of how these things happen.[1]

Note

1. I am grateful to Professor Bradford Garton of Columbia University for suggesting the topic of this article, which was given initially as a talk in his Advanced Computer Music seminar.

Reference

Bailey, Christopher. 1997. *Megalomaniac* performance instructions.

middle/ground

By Martin Brody

Almost by chance, I met Stefan Wolpe shortly before he died. I was finishing college but only beginning to try my hand at composing. I'd seen no scores of Wolpe's music and had heard only a few of his pieces—the catalogue of his recorded music was pretty thin at the time. But what I had heard had produced an immediate spark of recognition. There was a sense of portent in the music. It foretold solutions to not-yet-identified problems.

My connection to Wolpe was Alfred Leslie (a bona fide New York School painter who had, fortuitously, decamped from the City for a brief residency and the prospect of a large, rent-free studio at Amherst College—to him, an absurdly rural location). Alfred was a conspicuous presence at Amherst. Planning a monumental painting of the car crash that killed Frank O'Hara, he had contrived to hoist a jeep through the second floor window of his studio, right in the center of campus. (This, it turned out, wouldn't be easy—for the better part of two days, the jeep dangled incongruously, an imposing, surrealist sitework, just outside the studio window.) However, few students were interested in Leslie's work itself or his journey from abstract expressionism to neo-realism. To me his avant-garde credentials were intriguing, and we began to meet up regularly to drink beer in the student center. Like Wolpe, Alfred had been part of the 8th Street scene, and, like Wolpe, he lived in the artists' co-op building, Westbeth. When I mentioned my inchoate fascination with Wolpe's music, he suggested that I head for Westbeth immediately. Against my protests that I was a rank beginner, unprepared for an exchange with a composer of Wolpe's stature, Alfred insisted: Wolpe was already ravaged by the effects of Parkinson's disease and confined to his apartment on the Lower West Side. It would be now or never.

Several days later, I took the bus to New York. As I'd been warned, Wolpe's physical impairment was severe. Breathing, let alone speaking, was difficult—he could only squeak out a few words at a time, making an effort that clearly required enormous stamina and focus. But the fierce intellect and mordant humor were intact, and he marshaled his words to startling effect. "Tell me," he demanded, immediately (and unforgettably) after I showed him the brief pieces I'd written during a year of erratic, indecisive work: "Do you think you're responsible if you've been misled?" The request was exhilarating—cryptic and perhaps even somewhat miscellaneous, but utterly incisive and illuminating. I had to wonder how many

times he'd used the line before. Still, the question, like his music, portended other, as yet incipient questions and answers. I took the occasion to declare my independence: "I'm responsible for myself now"; but I had no idea from or to what. Wolpe died several months later.

In relating this story, I don't mean to cast myself as symbolic son to Wolpe's father figure. The Wolpe atelier was already overstuffed with artistic progeny, and I had (and would continue to have) my own mentors. Besides, Wolpe wasn't the father figure type. Telling tales about a musical patriarchy or an ascendant artistic lineage probably would have seemed like a pedestrian enterprise to him—perhaps worse, a crypto-fascist exercise. Even terminally ill, Wolpe remained more of a dada than a father figure. However, I do want to suggest the haphazard but propitious quality of my encounter with Wolpe and his question. It hardly felt like a passing of a torch or lighting of a path. But it was, explicitly, an incitement to change direction, to move—to take the proverbial leap of faith. The immediate sensation was of *transport,* a movement across a divide, provoked not only by a question, but also by an enigmatic aesthetic experience and a compelling personal encounter. But shortly after taking the plunge, I realized that I had landed in a poorly marked territory. Mapping the space has turned out to be a big part of the ensuing artistic enterprise. This task has been difficult enough that I've come to feel that the imagery of "mapping," "leaps," and "faith" itself is suspect (overblown, underdetermined), even if it captured the vertiginous feeling of weightless movement I experienced with Wolpe. "Place," itself, has turned out to be an uncertain figure. Had I leaped from "neo-classicism" to "avant-gardism"? From a hobby to a profession? From scales to sets? Was it a shift in ideology, aesthetic, identity? However pertinent, these terms, too, seem elusive, insufficient.

What I'm laboring to describe was probably not that unusual an experience for composers who came of age in the '70s. I imagine that other middle-aged, mid-career composers could describe a comparable initiation rite or "horizon experience," an indispensable but at first only dimly comprehensible meeting with unfamiliar music or a charismatic composer. But such experiences might have complicated repercussions. My deepening involvement with Wolpe's music focused my perception of the precarious position his compositional practice occupied within the larger field of cultural production and reception. Initially, this awareness wasn't all that abstract; it emerged from very basic questions: Why was there no consensus about Wolpe's importance? Why didn't more people want to write, play, and listen to music like Wolpe's?

The concrete questions, however, led to more abstract and generalized answers—and then on to even more general but inescapable questions. Looking back, I would now say that Babbitt's discussion of "contextuality"

provided the most useful model of the situation.[1] But Babbitt's term and his description of a shift in compositional procedures—away from the communal and toward more self-referential aspects of music—only complicated matters. "Contextuality" named a generalized condition and a precarious situation, a high-stakes game with serious risks (unintelligibility, incoherence, solipsism)—not a clearly defined place or a stable practice.

For Wolpe, whose compositional maturation occurred so shortly after the emancipation of the dissonance, taking on the risks of contextuality might seem inevitable and even heroic. The music of his that I first encountered engaged the problematic of self-referentiality head-on, postulating an expressively powerful, internally coherent, and comprehensively elaborated musical "universe." In its specificity and its interrelatedness with other forms of cultural production, it did indeed portend a sense of place.

There was, of course, a proliferation of such places during the postwar period (think of *Le marteau sans maître, Williams Mix, Zeitmasse,* the Carter Double Concerto, Coleman's *Shape of Jazz to Come,* the Barraqué Sonata . . .). But which of these could a fledgling composer inhabit in 1971? At the time of my initiation to Wolpe, the structuralist part of the enterprise had, of course, come into its own in academe, but the utopianism and the broader cultural and ideological frameworks were largely obscured. And by then, the cultural milieu had begun to shift in ways that Wolpe could not have anticipated and would not live to see. By the early '70s, to be drawn into a new "musical world" by the force of an aesthetic or personal encounter might have felt like a leap, but not exactly from one place to another. You didn't have to leave the old place behind; the conversion experience wasn't necessarily absolute. Engaging with the risks and opportunities of contextuality decidedly did not seem inevitable or heroic. By then (*already* then, apparently the heyday of the New Left), the lynchpins of what we now summarily call postmodernism had fallen into place. We had already begun to grapple with our unstable, hybrid identity categories, our post-analytic epistemologies and post-historical politics, our global culture and global capitalism—even if the analytical vocabulary for analyzing such things was still rudimentary. Already, metaphors of physical topography didn't work very well to describe the mutating, virtual spaces in which we lived our mercurial musical lives and declared our engagement with, or allegiances to, different kinds of music or modes of musical experience.

From my youthful point of view, there was a palpable tension between a (neomodernist) impulse to stake a claim to what still seemed a vital ideology and musical idiom, and an incipient (postmodern) awareness that the ideology was disintegrating and that the idiom could (even more, *should*) not be privileged. The compositional practice and *modus vivendi* inscribed

in Wolpe's music, his writing, and his still-robust presence at a time of grave illness could be comprehensively admired but not entirely recuperated —certainly not generalized into a common practice.

Still, you have to start somewhere—and, more to the point, get somewhere. However difficult it may be to escape the feeling (and imagery) of being multiply located and of having no fixed position, it seems crucial to try—to stake a claim to a position. And music, which at least begins and ends but can move from beginning to ending in so many different ways, seems an especially appropriate medium for exploring paradoxes of cultural location and dislocation. And so, I'll return briefly to my encounter with Wolpe's music, to say a bit more about how the issues of responsibility and direction that he raised have come back to haunt me. It was difficult to chart the area that Wolpe had led me to, but, in exploring it, I eventually reached what seemed to be a border—and an opening into a different place.

* * *

The initial effect of Wolpe's stunning question has been re-sparked for me countless times in experiencing the unsettling events of his music. The music's constantly morphing spatial configurations and rude gestures (set off by compulsively measured, ametrical, microseconds of silence, so often shorter than an intake of breath, more like the breathless onset of a thought) provided an ever-varied, entirely pleasurable, aestheticized electric jolt. The music not only incited a jump into something new and not yet very intelligible, it even seemed to be about jumping—leaping from one stark gesture to another, with no mediating transitions. The effect was (is) magically fresh in each reiteration; and the notes themselves were (are) full of hints about how my own music might go. The first pieces that I wrote that seemed to have any clear intention took off from compositional ideas in Wolpe's *Form* (for piano), *Chamber Piece No. 1,* and his strangely magisterial essay entitled "Thinking Twice." In these, I found ideas about spatially projecting unordered pitch-class sets, linking intervals with musical behavior, modes of expanding and contracting the pitch-class field, and so on. More generally, though, Wolpe's gestures seemed to be saying: *No uncritical thinking.* This was a provocation: I had set out composing (like many others, I suppose) as a knee-jerk neoclassicist, guided (misled?) by intuitions of taste and sensibility. It took a while for me to feel the force of an aesthetic problem, to understand musical expression in terms of compositional method—more generally, to sense that charting new ways to interconnect musical details, design, "language," and ethos could be transporting (or, conversely, to experience the feeling of crashing and burning when these things were out of sync). I sensed only

gradually, for example, that there might be an incongruity between the distinctively nontonal sounds to which I was drawn and the tonal voice-leading techniques and phrase shapes to which I was habituated. (*Tell me, do you think you're responsible if you've been misled?*) Wolpe's disjunct gestures, expanding and contracting in time and space, broke through the cautious contrapuntal configurations of my fledgling efforts, dislodging already complacent, if immature, compositional habits.

And so, the critical corollary: *No halfway solutions.* I may have read that Schoenberg was dead, but for me there was little experiential charge to (or critical perspective on) Boulez's severe polemic until I experienced the electricity of Wolpe. The music affirmed its own self-referential principals, rejecting any and all attempts to jerry-rig a bridge to tonality. It distanced itself as much from "idea" as from "style." (In this respect, too, it constituted a "place" with no access roads. You had to take a leap to get to it.) You would find here no effort to recuperate tonal norms through twelve-tone properties, nor any ad hoc forms of neoclassicism. Wolpe found any number of ways to describe positively the method that emerged from these negations, but his most succinct phrase was "lost gradualness." His constantly shape-changing pitch-class collections generated no structural bass lines, no set hierarchies or fixed-order properties, no balanced phrasing, no harmonic rhythm, no recovery of classical forms, no pretty consonances resonating through the foreground flurry of activity—in short, *no middleground* mediating between a hyperactive musical surface and an often sluggish, inert, or erratically changing pitch-structural background.

Of course, Wolpe's was not the only music that influenced me, but it provided the most efficacious models during the years that I was beginning to find myself, compositionally speaking. Over time, however, the integration of detail, design, language, and ethos that I had modeled on Wolpe began to unravel. I hadn't become disenchanted with his music, but I struggled, especially with what I had come to think of as the signature aspect of his musical universe: the elided middleground. I experimented with unsystematic voice-leading techniques, chord voicings, and doublings that I had previously cast off in favor of Wolpe's systemic discontinuities. There was no new revelation or conversion experience to precipitate the change—no decision to make an aesthetic overhaul. Rather, I felt a strong, untheorized urge to reassert a mediating level between the active, mercurial musical surfaces of my music and its static background structures. The impulse to regain gradualness was baffling but ineluctable.

Eventually, though, I did come to some terms with the compulsion; again, Wolpe provided a clue. I had already realized that the music of his that I loved most and that had moved me the furthest from where I started

was rooted in radical cultural politics—i.e., his experiences with the Berlin dada movement, the Novembergruppe, and the Bauhaus, as well as his brutal, political exile. However, while the flames of avant-garde aspiration may have been rekindled in the '60s, they had gone cold again by the end of the Reagan-Thatcher and Bush (*père*) era. By then, Wolpe's evocation of an alternative world and the utopianism it foreshadowed seemed remote.

I became aware of this while writing a chamber opera based on Mikhail Bulgakov's *Heart of a Dog,* a wild novella satirizing the Russian Revolution and its failed project of radical social and subjective transformation. The story provided me with characters that embodied radically different subject positions—Bolshevik revolutionaries, *ancien régime* reactionaries, and an antihero narrator, a dog turned human and back again by a Frankensteinian scientist. Only midway through writing it did I realize that I had been drawn to Bulgakov's story at least in part to examine my own compositional situation. Adapting Bulgakov provided a way to "sound out" the question of cognitive and social transformation through music, in parallel play with the novella's satire of scientific socialism. In the opera, the story of a failed experiment in individual and collective transformation was linked to the gradual liquidation of compositional materials and procedures that for years I had called my own—now identified with operatic characters who perpetrated and suffered the experiment.

Giving away (to my characters) what I had thought of as my own seemed appropriate, theatrically and symbolically, but it left me in a difficult place—briefly, it left me nowhere, compositionally speaking. (I hadn't anticipated the opera's outcome, so I wasn't prepared to find an alternative.) Fortunately, though, some of my other characters gave me their music, as if in exchange. That is, I could let go of one mode of musical production by embodying it in my characters; but I could also experiment and identify with other compositional modes through a complementary process, one of allowing a character to suggest the musical idiom. But, just as the story provided no winners, no triumphant outcome, the opera privileged none of the characters' music. Its more conventionally continuous music was as ironic and unsettled as the parodied avant-garde discontinuities of its revolutionaries.

The outcome of *Heart of a Dog* (opera and novella) was bleak. Since writing it, I've been searching for less ironically charged attitudes toward musical continuity—and also an alternative to operatic impersonation or pastiche. In a very broad sense, my project has slowly moved from one of asserting a fixed contextualist aesthetic to one of projecting a satiric struggle between distinct musical idioms to one of musically enacting the process of searching for a stable artistic "place." The formal and narrative

dimensions of the music seem to follow. However, I continue to feel that any integration that ensues should incorporate an awareness of its own provisionality. I now see the problem in terms of steering a path between the stark contingencies of Wolpe's "high" contextuality and the hasty triumphalism of some of the recent attempts to reclaim musical universals, tonal or otherwise.

* * *

I suppose that there's no need to emphasize the provisionality and open-endedness of these comments themselves. To say that I've left out just about everything is simply to acknowledge how multifaceted and unyielding the compositional process is. But however tentative or incomplete the answers may be, it still seems urgent to pose the questions and define the project. In this regard, it now seems to me crucial to knock through the barrier between discussions of compositional "technique," "craft," or "expression" and of constructed (musical) identities and unstable cultural formations. However fragile the connections that emerge, Wolpe's own insistent question and his oracular music still seem pertinent. It still seems meaningful to ask ourselves if we're being responsible, if we've been misled.

Note

1. Babbitt discusses "contextuality" most explicitly in the last of his Madison lectures, but the theme runs through much of his writing. See the final chapter in Babbitt 1987.

Reference

Babbitt, Milton. 1987. *Words About Music.* Edited by Stephen Dembski and Joseph Straus. Madison: University of Wisconsin Press.

Transformations and Developments of a Radical Aesthetic

By Earle Brown

Why is there any interest in "creating" nothing and in signing one's name to it? . . . The most "skillful means" to the least relevant ends is beside the point. ("If there were a point, this would be beside it.") If beside the point is the point, it takes extremely skillful means to maintain the "no" position. If that is not the point then it all comes to the same thing—everything is possible and there is no way to maintain that position. Needing a way to maintain that position is to again create the "problem"—and the circle begins again at no particular point.

—E. B., Place de la Contrascarpe, Paris

Aesthetic Bio

I have admired and enjoyed writing in all styles, but I am mostly impressed by the impermanence of styles and "ideas of order" . . . in one moment defended and in the next moment offended by the natural process of cultural re-vision. At its best, "order" seems to be an individual matter, relative to personal "vision." By the time it has become public enough to be taught as an academic acquisition it has lost the special uniqueness that was its initial expressive urgency.

This preoccupation with impermanence has meant that I do not have a particularly reverent attitude toward my own or anyone else's rules. It seemed to be a matter of moment rather than a momentous matter. I am not at all convinced that the twelve-tone approach to order is "a factor ensuring coherence," and least of all convinced that coherence is necessary, or "ensurable" *if* necessary. Relative to inertial listening habits, one century's chaos is another century's coherence. I was especially annoyed by the idea that, in twelve-tone counterpoint, one avoided consonances. I liked the idea of "the liberation of dissonance" but did not agree that it should mean the enslavement of consonance: the substitution of one prejudice for another, a malady that is characteristic of most innovation, and which only results in a new academicism. What I did accept is that a tone row is an efficient means of distributing the twelve available tones in a context, which, by my choice, was not dependent upon a hierarchy of pitch and interval values. I quite literally accepted the "equality" of the pitches and thought of "coherence" as contextual rather than hierarchical.

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A good part of my impatience with the conceptual inflexibility of historical rules was due to my involvement with Schillinger techniques (from 1946 to 1950), which, if nothing else, exposes one to an extremely iconoclastic, mathematically analytical, and constructivist point of view that has no truck with the "loose thinking" of historical practice . . . a rather extreme but assimilable and valuable approach if the "mathematical" aspect doesn't induce panic at first encounter. The empirical, "no nonsense" approach to art, based as it is on the quantitative and qualitative analysis of sound, the physical material of art, and the suggestions of innumerable bases for "objectively" controlling and generating the material with whatever "aesthetic" context one chooses, is still the most reasonable and complete mental and technical approach available—a "structural functions of sound" approach.

I subsequently discovered that such Schillinger concepts as the coordination of time structures, generation and variation of rhythmic groups, density as a primary determinant, distribution in strata fields, and the so-called "total" organization of all of the characteristics of sound—all somewhat parallel the techniques taught by Messiaen (Schillinger died in 1943). These principles are largely responsible for the serial basis of much twentieth-century European music. As with serialism, the strict application of such procedures can be highly, if not overly, mechanistic—extremely rational, logical, and materialistically "coherent," but not necessarily "to the point" (whatever that may be).

In spite of all of these technical resources, the earliest, and still the predominant influences on my conceptual attitude toward art, were the works of Alexander Calder and Jackson Pollock, which I remember first seeing around 1948 or 1949: the integral but unpredictable "floating" variations of a mobile, and the contextual "rightness" of the results of Pollock's directness and spontaneity in relation to the materials and his particular image of the work—as a total space (of time).

Aspects of these two kinds of work have been integral to my own work since 1950. In Calder, the construction of units and their placement in a flexible situation that subjects the original relationships to constant and virtually unpredictable, but inherent, change (the movement of the units as well as the movement of the viewer) led me to construct units of rhythmic groups (with assigned intensities but "open" timbre possibilities subject to an independent timbral-density plan), modify them according to previously mentioned "generative" techniques, and assemble them rather arbitrarily—accepting the fact that all possible assemblages were inherently possible and valid. This is, in general, the technique used in three serial works written between 1950 and 1952. *Music for Violin, Cello and Piano* is the second work in this group (the last of which is *Perspectives,* whose title

refers to the concept of using rows and Schillinger "serial" principles but no other rules of twelve-tone writing).

In highly experimental works from 1952 and 1953, collected and published as *Folio and Four Systems* (subtitled "experiments in notation and performance process"), the Alexander Calder–inspired "mobility" finally found a practical (for *me*) notational expression. The scores were in different invented notations of a highly ambiguous graphic nature, subject to a number of different—but all inherently valid—realizations.

I felt that the realizable concepts of physical and conceptual "mobility" in relation to the graphic input by *me* was a practical and creatively ambiguous stimulus to performer involvement and sonic creativity. This is not an abandonment of composer responsibility but the musical result inherent in a provoked, multicreative, "synergistic" interaction of the composer's concept, the graphic score, the performer's realization, and the audience. Not one of them is independent of the others; there exists, rather, a truly collaborative, creative *synergy* ("Synergy" is the subtitle of *November 1952,* from *Folio*).

The notation used for *Music for Cello and Piano* (1954–55) is developed from the graphic experiments of *Folio.* It is highly composed and notationally explicit, but is written in what I call a "time notation" because of its lack of dependence on any rational metric system, and its reliance upon the performers' actions, relative to their "time sense" of the visually ambiguous graphic relationships. The notation intentionally encourages varying realizations of the given material—between the instruments in any one performance, and from performance to performance—while at the same time presenting the performers with an unequivocal basic graphic situation. It is now usually called "proportional" notation.

There are two very different notations used in *Hodograph I.* The first is the "time notation" of *Music for Cello and Piano,* called "explicit" in the preface to the work (explicit insofar as frequency, intensity, timbre, modes of attack, and *relative* duration are given). The second notation is called "implicit," in that it *implies* the amount and character of activity—all of the above characteristics of the sound—by means of line drawings. There are three fifteen-second "implicit" areas in the score, which sporadically interrupt the "explicit" areas. The use of line drawings in my work goes back to my attempts in 1950 and 1951 to produce pieces in which decisions as to the validity and rational function of details, such as pitch and vertical correspondences (in general, the editorial aspects of composing), were minimized as much as possible, and qualities of spontaneity and immediacy were considered to be the most direct and essential aspects of the work. It was an attempt to realize graphically the essence of the piece, the initial intuitive conception, before it was molded to conform to technical and

aesthetic concepts of structure, form, continuity, art, beauty, and other acquired habits and prejudices of taste and training. These pieces (for piano and string quartet) are in standard notation and are to be performed as is usual, but were written in an extremely rapid, direct, and intuitive manner: the entire piece would be sketched within a few moments (relative frequencies, intensities, durations, and contours) and then notated, or "punctuated," as music. It was an attempt to bring the time needed to compose the piece closer to the time needed to perform the piece. Similar graphic "generalizations" are the first stages in most of my works. In *Hodograph I* the "implicit" areas are sketched by me in much the same way (different in every area in every printed score) but are "punctuated" and realized in sound by the performers. The juxtaposition of the two notations produces a result that is a spontaneous correlation between the performers and their individual responses, and the varying degrees of ambiguity in the notations.

My interest in notational ambiguities, mobile scores, spontaneity in the compositional and performance processes, "objectively" acquired structure, and the use of what has been called the "inarticulate, transitive" sounds of instruments, grows out of a larger interest in hearing the tentative and unforeseeable situations that may occur in a relatively unconditioned event involving sounds in an implicit context. A totally unconditioned event is probably not possible: one's first impulse and first actions inevitably condition the work to some extent, but the conditioning of subsequent compositional actions can, to varying degrees, inhibit or release the work as an entity. What interests me is to find the degree of conditioning (of conception, of notation, and of realization) that will balance the work between the points of control and noncontrol. At that point, the work, the performer, and I will most clearly exist—both as entities and identities.

* * *

A meeting with John Cage in 1951, in Denver, was of considerable importance to me. It was my first contact with anyone else who was consciously working in what I felt to be the "poetic atmosphere" of the Calder and Pollock work. Cage at this time was composing *Music of Changes,* and using chance as a technique for constructing the work. This was a striking confirmation to me that the arts in general were beginning to consciously deal with the given materials and, to varying degrees, liberate them from the inherited "functional" concepts of control . . . the affirmative act of "relinquishing the initiative to the words themselves," as Mallarmé suggested . . . the experience of the results being an affirmative act of appreciation, and not dependent upon logical context. It is a vague, general

realization by artists such as Joyce, Gertrude Stein, and many painters and poets, that no two people experience or understand the same artistic information in the same way. "Multi-ordinal" creation, understanding, and appreciation are indigenous to the human mind. Artists began to approach ambiguity and abstraction in reaction to this realization.

Although I am in complete sympathy with the utilization of so-called "chance"—as in some painting, dance, and music—I am personally much more inclined to utilize procedures in which spontaneous and immediate involvement spontaneously condition and uncondition the result.

Early Twelve-Tone Works

Three Pieces, for piano (1951), *Perspectives,* for piano (1952), and *Music for Violin, Cello and Piano* (1952), all composed in Denver, Colorado, are works that use twelve-tone pitch rows and "serially" composed rhythmic groups. This juxtaposing of tone rows and rhythmic figurations, with virtually infinite possibilities of integral extension and variation, was first suggested to me during my studies of Schillinger techniques, but is also similar in concept to old techniques of "isorhythm(ic)" composition. I later discovered that Schillinger "rhythmic groups" are what Olivier Messiaen called "cellules" (which, as the word suggests, refers to cells—subject to subdivision, multiplication, expansion, permutation, etc.).

Apart from these rather technical procedures, I composed form, dynamics, melodic trajectories, and densities very subjectively and spontaneously. My "subjective" personality tended to avoid the rather "dark" qualities of much twelve-tone music of the time.

M*usic for Violin, Cello and Piano* is a kind of study in color and in wide, vertical extensions of instrumental registers. Having been a trumpet player, I was fascinated, when I first started to compose, by the possibilities of the wide range of color that stringed instruments are capable of, and I still like the quick, highly detailed juxtaposition of instrumental colors and frequencies. I think that my early influences from painting and sculpture—Pollock, early Guston, Calder, and others—are in there somewhere.

Notebook Excerpts

~Chaos is a state of *seeming* unrelatedness. . . . Actually, there is no such thing as chaos except as a saturation point of comprehensibility, which is somewhere between here and infinity . . . and always sliding about between.

~By the act of choosing, the not chosen is rejected. The basis for this rejection is the function or "use" to which the chosen is to be put. Function and usefulness being eliminated as inconsistent with the nature of the medium (sound), the act of choosing (rejecting) (negating) comes to be

Figure 1a: *Music for Violin, Cello and Piano* (1952), mm. 1–6. ("Twelve-tone 'Schillinger serial'")

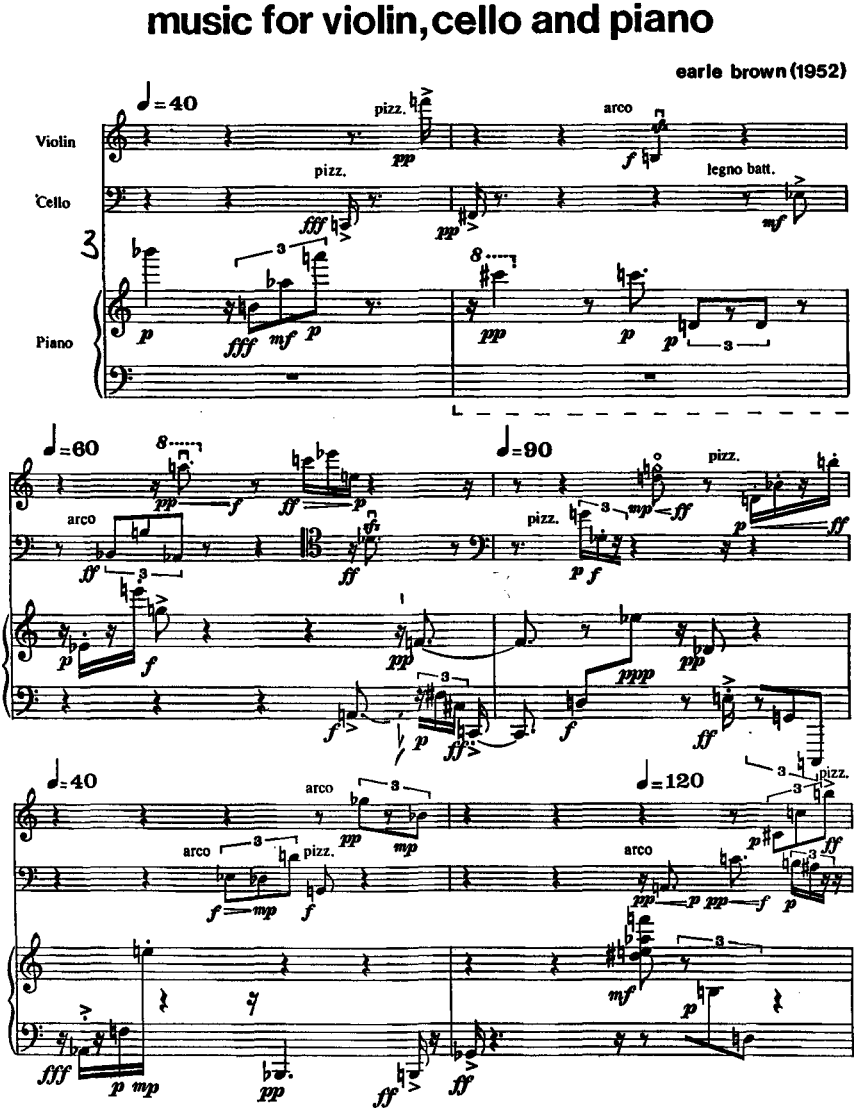


Figure 1b: *Music for Violin, Cello and Piano* (1952), mm. 19–24.

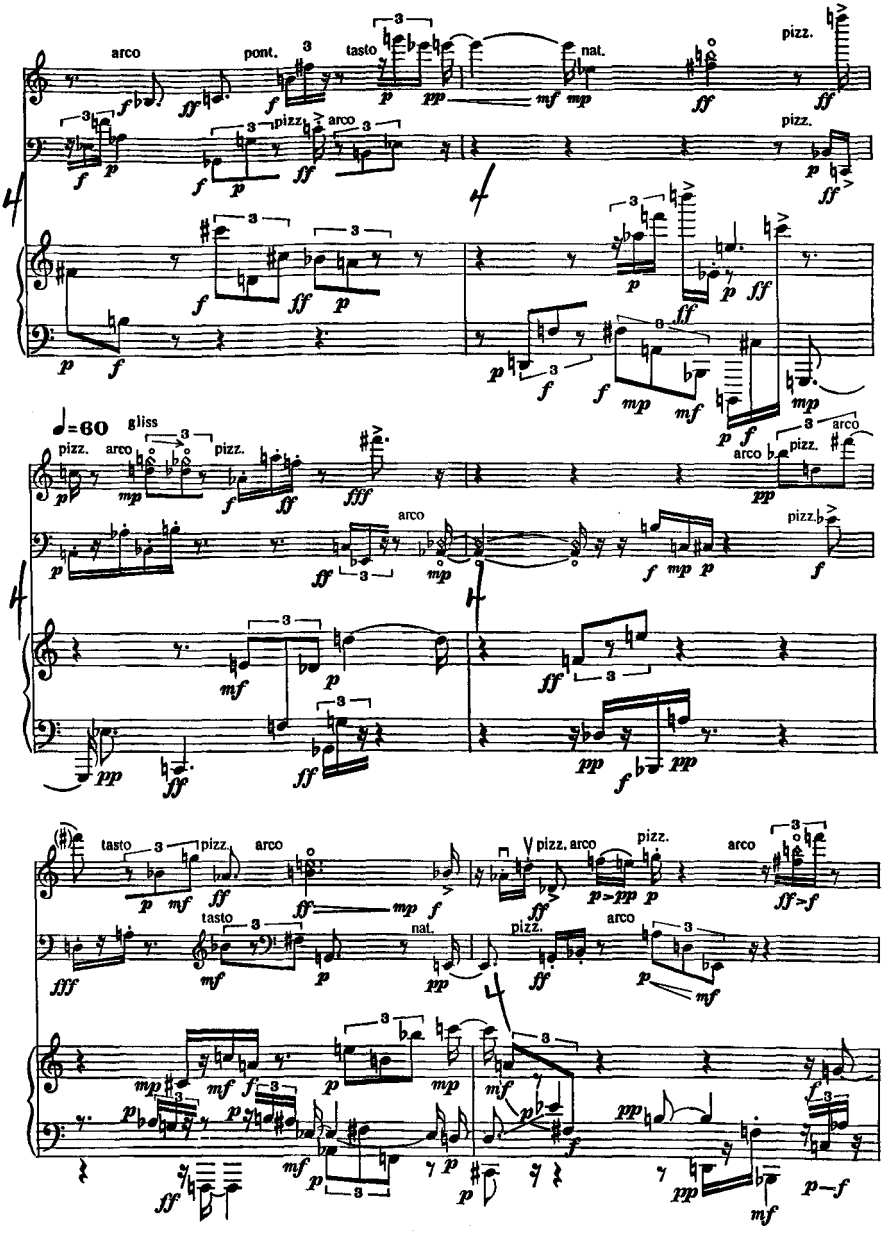


Figure 2a: *Special Events,* for cello and piano (1999), page 3. ("No calculations—totally intuitive—spontaneous")

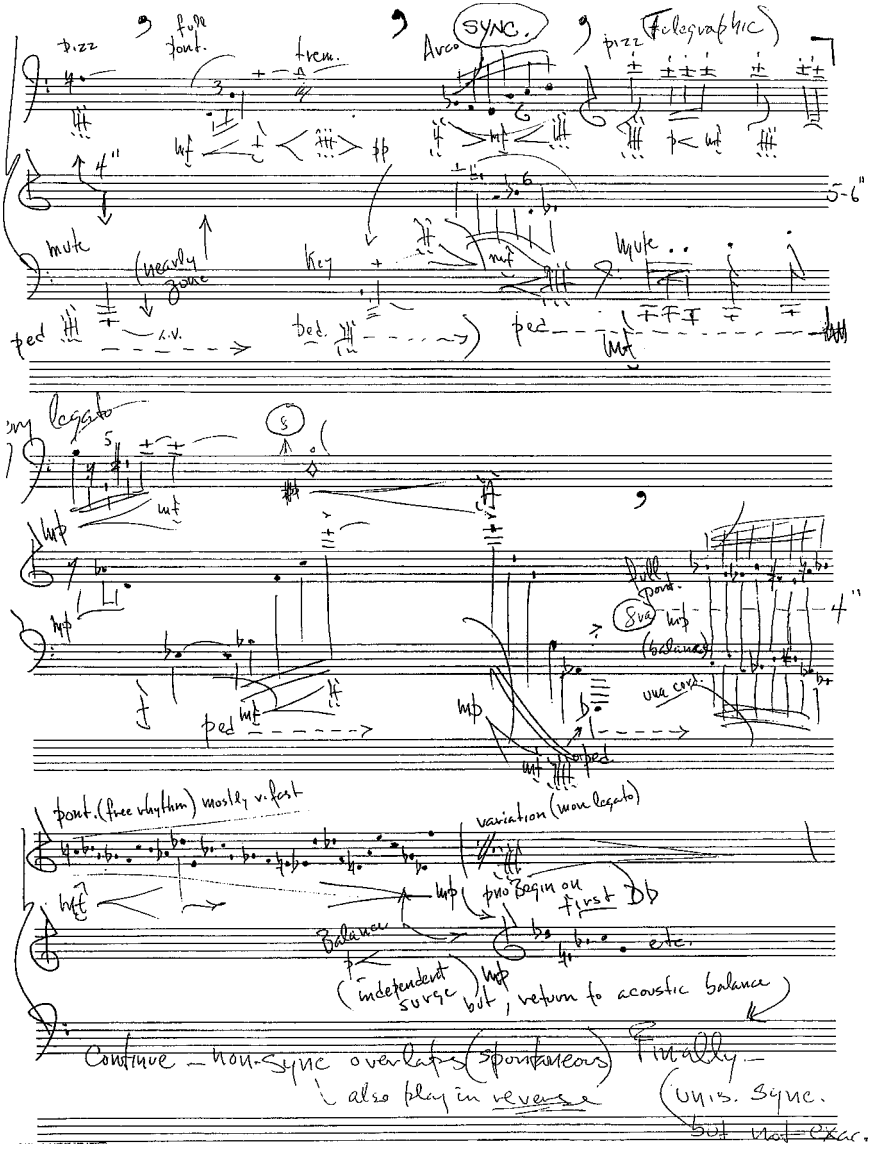
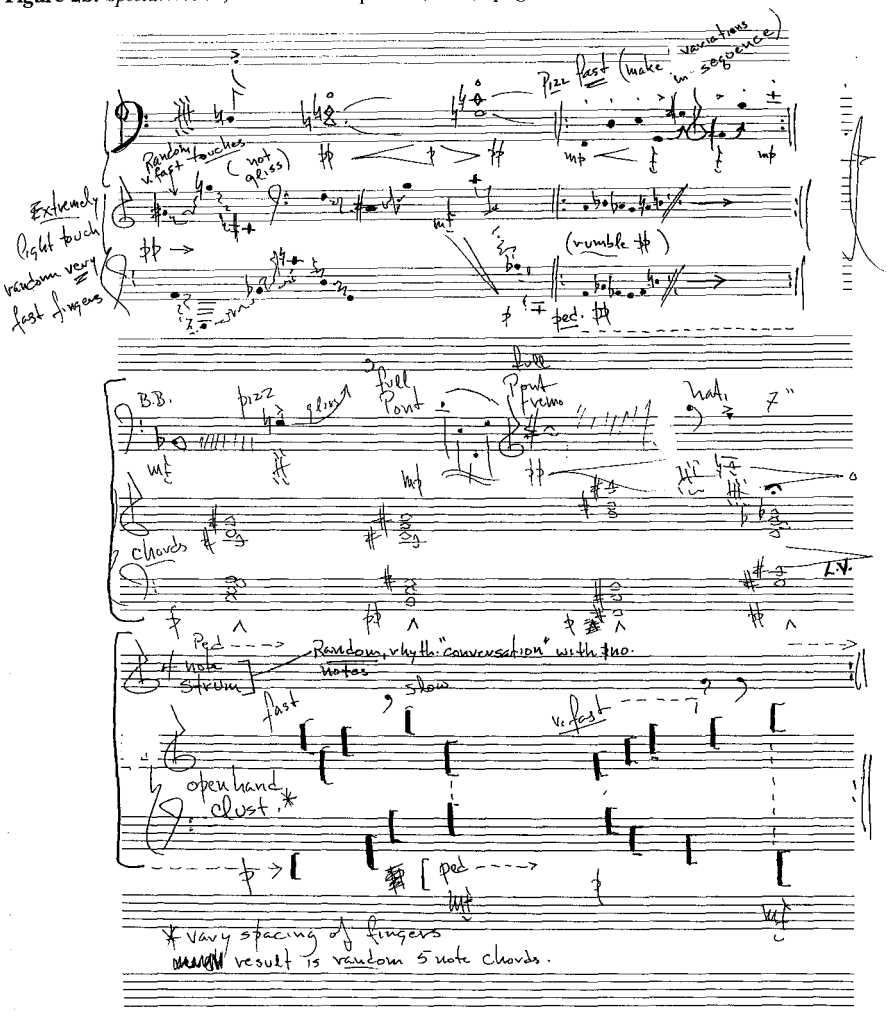


Figure 2b: *Special Events,* for cello and piano (1999), page 4.



unnecessary. Not choosing becomes then a nondualistic act of affirmation. The affirmative act of not choosing is attacked as negativistic on the basis of art as functional . . . it *can* be or it need not be. I admit the former and choose to work on the basis of the latter. (By my choosing not to choose, I have, by my own line of reasoning, become dualistic in rejecting the possibility of choice. The statement, however, has to do with the nature of the medium relative to choice rather than to the nature of the artist relative to choosing.) To imagine meanings for sound and insist on the universality of the delusion may be amusing but . . . this is not the only valid approach.

~Causality is beside the point.

~The affirmation of no-thingness (nonparticularity) is neither nihilistic nor negativistic. It is a conscious, positive involvement and acceptance of the intuitive, non-logical, poetic significance of all things prior to rational selectivity of "the useful," "the beautiful," etc.

~The only way for the point of view to be no point of view and independent of independence and self and ideas is to defend and deny any and all possibilities with equal avidity and intensity, and with the most rational intellectual sensitivity and cunning.

~The only revolution that is now urgent is the revolution against revolt and for no-thing . . . no "thing" as *fixed* object.

~Egotistical concepts of *knowledge* must give way to spiritual affirmation and acceptance of the infinite nature of the physical world and the limitless scope of the human mind. . . . Artists are the first to feel the movement within their time and are the most severe critics of society. They can do this because they are on intimate terms with the mystery and transitory nature of concepts. They accept not knowing . . . and if they are true artists they are familiar with the dangers of self-delusion, and are severely critical of this within themselves. They understand the way of acting, with humility, on the basis of intuitive belief . . . but that is the way it is and one must have the strength to act under those conditions. Act with the utmost intensity and conviction with nothing more than intuition as a guide.

~This (proportional) notation and how it can go together with time is sufficiently and excitingly mysterious to me. I have considerable difficulty in imagining the sound when seeing the piece of paper. This in itself is a delightful place to be.

~Not to try to understand but to realize the lack of need to understand —which is all the understanding that is necessary (the understanding which surpasseth all love) . . . the lack of understanding which puts one back into the flow of anything . . . the natural continuity of everything is incomprehensible from any point of view and is only comprehensible in the state previous to any point of view. Understanding (knowledge) is an

isolated set of approximations settled for out of either indolence or ego. The unity lies in the conception.

~There is no such thing as irrationality or incongruity in music, other than the mathematical or associational . . . only associational if one is listening historically. There is nothing rational in music because there is nothing to be known about any sound except to hear it . . . which has become difficult because of the arbitrary assignment of theories to what is natively meaningless. To work with the meaninglessness is to work with meaning in its true light of infinity. Apart from the general prevailing indolence, the difficulty people experience in experiencing this music is directed expectancy . . . which is, to a degree, natural.

~I have always found that the most enlivening thing about art, or anything else, is its mystery and its being beyond my particular experiential conditioning and, therefore, understanding. There is, of course, no such thing as complete understanding but there comes to be a familiarity and acceptance of something that one spends time with, which might as well be called understanding. When this occurs, the mystery and the real poetic life go out of it . . . not out of the work but out of my response to it . . . and what is left is the form, the technique, and a poetry that is no longer vital. There is a great deal of admirable form, technique, and nonvital poetry that I can admire as such, intellectually, but find completely unrewarding poetically.

~With *Folio* I intentionally extended the compositional aspect and the performance process as far out of normal realms as I could . . . just short of producing nothing at all. Within the same year I wrote works having extremes of finite control and extremes of infinite ambiguity, knowing full well that what I was looking for lay somewhere in between. (I wrote a note to myself at that time, which was to the effect that truth lies at a point somewhere on the arc stretched between two extremes of a paradox, and that point is always fluctuating . . . as I was.)

Instructions for *Twenty-five Pages*

The twenty-five pages may be played in any sequence; each page may be performed either side up; events within each two-line system may be read as in either treble or bass clef; the total duration of the piece is between 8′20″ and 25′, based on probable but not compulsory extremities of 5″ and 15″ per two-line system. A time structure in terms of seconds per two-line system may be preset by the performer, obtained from the composer, or arrived at spontaneously during the performance. The indicated note durations are precise relative to each other and to the eventual time value assigned to each line system.

Figure 3: *Twenty-five Pages* (1953), page 5.

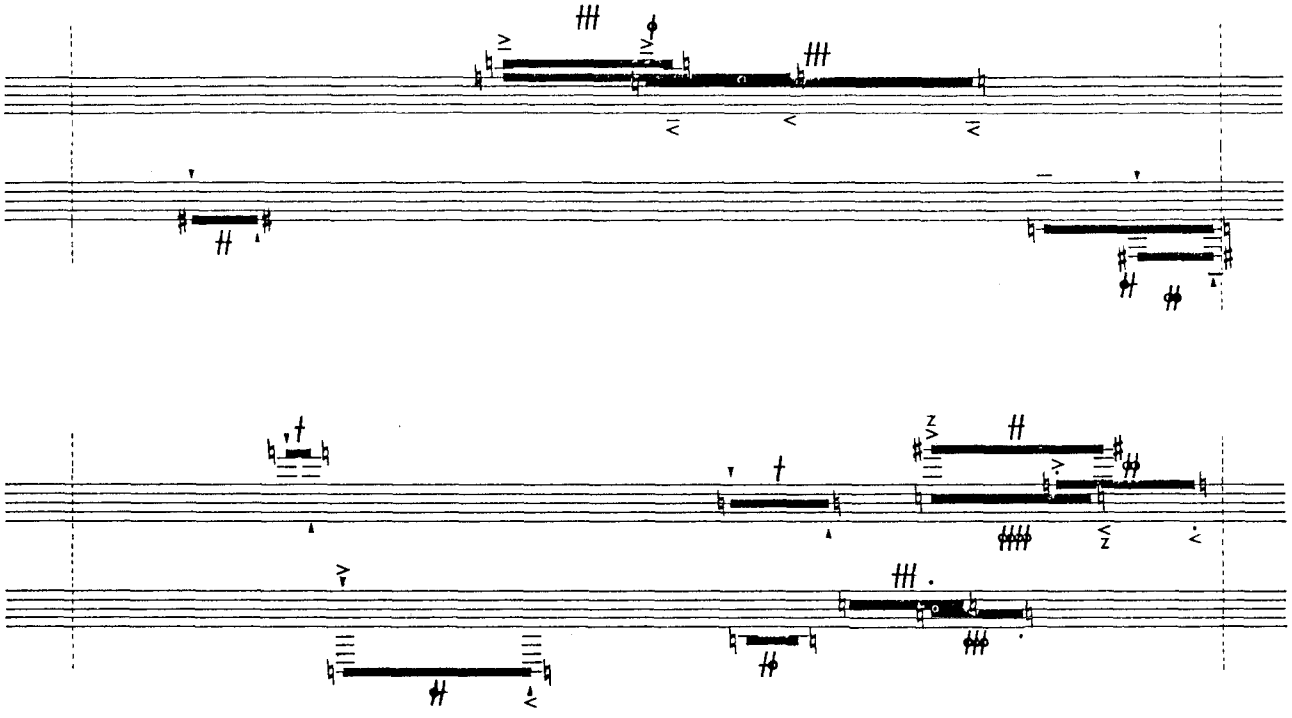
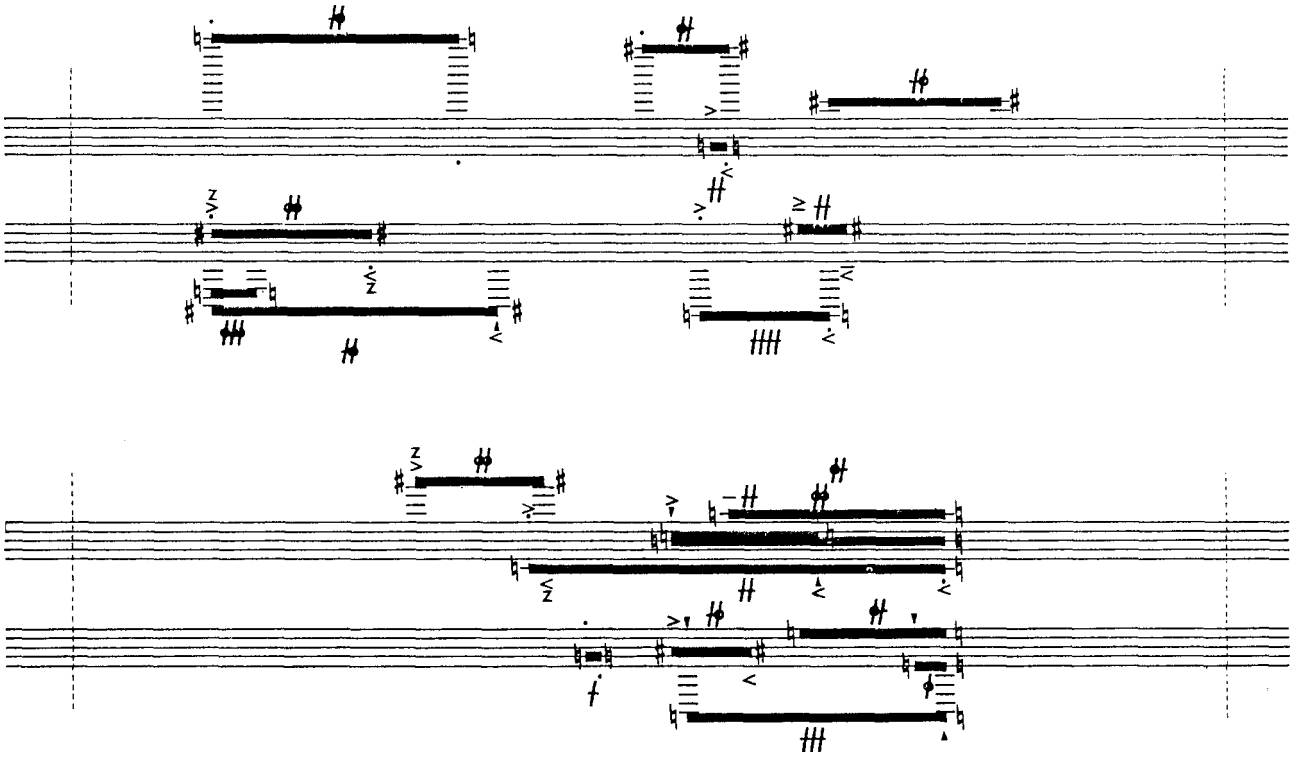


Figure 3 (cont.)



"Impossible" hand spreads may be broken, arpeggio-fashion, and played as rapidly as possible, from top to bottom, bottom to top, from the center outward or from the outward extremes to the center.

Indicated tones that are below the keyboard range may be considered as, in fact, unplayable, and omitted if that particular event is played as being in the bass clef. Another arrangement of the pages may find these notes again within the range of the keyboard.

It will be seen that the basic "mobile" elements of the piece (page sequence and inversion, clef disposition and time) admit of a considerable number of different presentations of this material. All of these possibilities are valid within the total concept of the work, provided that once a selection from the range of possibilities has been made it be executed with devotion and accuracy in regard to the durations, attacks, and intensities. The variable factors are to be dealt with to any degree of simplicity or complexity interesting to the performer.

The piece may be played by any number of pianos up to 25.

The General Movement

The general movement, in all the arts, is toward the presentation of an "actual" event rather than a remembered or "representational" event. The materials become progressively more freed from subservience to the "history" of their usage and less dependent upon the inherited semantic function (a function based on the commonly understood and accepted habits of the past). The presentation of an "actual" event attempts to bring the "audience" and the work together in/at the same "time"—to close the gap between art (reflection) and life (*being* . . . in the moment and not somewhere else).

This development has made a lot of people very nervous because of their experience of not being able to control or foresee or accept the *non*-control and the *not*-foreseen as it happens to them every day (it is understandably nerve-wracking in daily life if you have an inflexible attitude and a certainty as to the functional and useful purpose of your activities as they (should) march convincingly toward your goal). A certain type of artist has accepted such goal-oriented functionalism, and it is an honorable endeavor but it is based on an acceptance of the idea that we can know something and know how to make someone else know it. This kind of knowing that anybody can have just by deciding to. . . . There is variety in what various people decide upon knowing and it is sometimes interesting but never profound. "Do you know do you know or do you know because I tell you so?" (Gertrude Stein); "because I" or you or somebody else "tell(s) you so" is never enough.

The "freeing of the materials" has come about because of (some) artists realizing that the material *is* free and that any definition or condition that

is imposed upon it is only an imaginary and momentarily effective illusion. Much of art is based on such illusory thinking, and this is perfectly proper to art of the past or present that is illustrative of exterior "reality" and based upon a currently acceptable vocabulary of "expressive," inherited concepts of "reality," and conceivable relationships within observable limits. This is a functional, useful, consciously communicable, "common denominator" approach to art, and may actually be the true, or at least the original, description of "art"—the involvement of an imaginative artisan wishing to produce an object that would function usefully and/or poetically as a "finely wrought" example of skill, taste, intellect, and imagination.

The more recent developments in art find the artist no longer content with the inherited vocabulary nor with his ability to acquire skill in the manipulation of his "craft." There is a desire to remake or review the entire world of possibilities, from its primary components and qualities . . . to discover what is or might be possible rather than to condition the possibilities of discovery by imposing rational causality directives, as the artist understands them. This dissatisfaction with second-hand experience, the desire for "freedom from the known," is neither negativistic nor escapist but is, on the contrary, a commitment to the feeling (intuitive) that everything is meaningful and valuable (infinitely) if one is sufficiently unqualified by Pavlovian response patterns to experience the *now* of it!

Calder Piece

This piece was first conceived and "designed" in the spring of 1963, when I was in Paris finishing work on *Times Five,* commissioned by the Service de la Recherche of the French Radio (ORTF). At this time, Diego Masson, percussionist and now also conductor and music director of various groups in Paris, was forming the "First Percussion Quartet of Paris," and commissioned me to compose a work for the group.

Those who are familiar with my work are aware that the original impulse and influence that led me to create "open form" musical works (which, in 1952, I called "mobile compositions") came from observing and reflecting on the aesthetic nature and lifelike qualities of the mobiles of Alexander Calder. (I first met Calder in 1953 at his home in Connecticut —introducing myself and Pierre Boulez, at the suggestion of John Cage— and therefore Sandy learned of my work and my indebtedness to his concept and work.)

In Paris (in 1963) I began the work for the Quartet with the idea that it would be "conducted" by a mobile in the center of the space, with the four percussionists placed equidistantly, in four corners, around it; the varying configurations of the elements of the mobile being "read" by the performers, and the evolving "open form" of each performance being a function of the movements of the mobile, and subject to the scoring and "choreography" of

Figure 4: *Calder Piece,* for four percussionists and mobile, page 7.

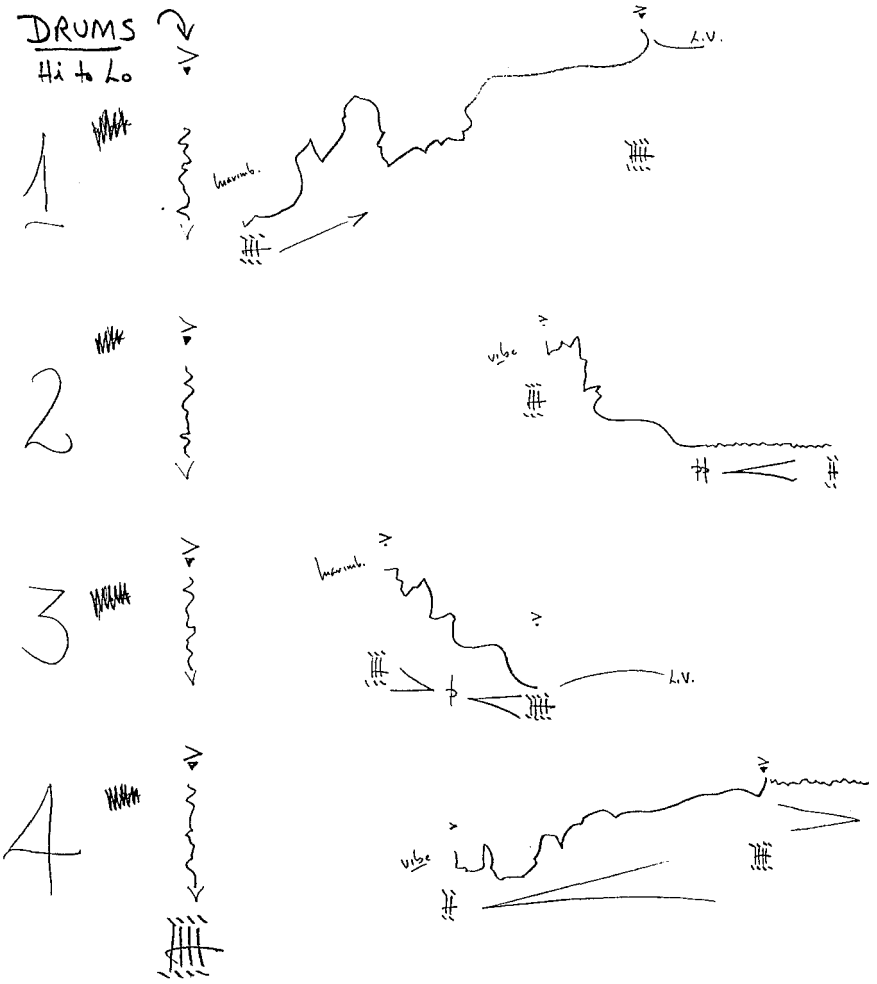
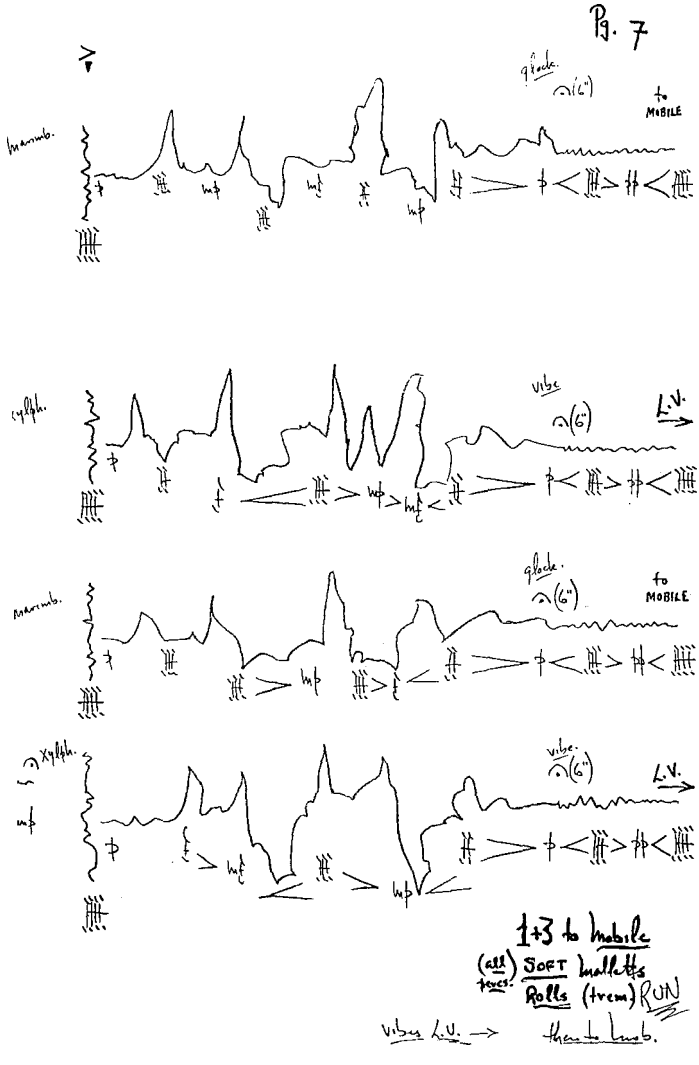


Figure 4 (cont.)



the performers' movements. It is a very intricate "feedback" condition between the mobile, the score, and the performers.

The practicality of this whole thing was of course dependent upon the hope that Calder would find this collaboration interesting and create a mobile for it. I knew that Calder was at his home in Sache, France, and so we phoned, and Diego and I drove to Sache.

Sandy was immediately intrigued and excited by the idea, and after a marvelous lunch by Louisa, much wine, a few games of billiards, and fixing a flat on Sandy's Citroen, everything was happily agreed to. (Calder had once helped me to repair something on my old Porsche during a visit to him in Connecticut—the same car we had driven to Sache—so our collaborative potential already had a history of at least automotive success.)

The final scoring of the piece had to wait for the mobile to be finished because various aspects of the score and performance were directly based on the number and color of the elements and their physical placement in the structure of the mobile (however, it turned out to be "Calder Red," which called for some hasty rethinking on my part). It was not until 1966 that everything came together and the work was finished. Sandy named the mobile "Chef d'Orchestre."

Calder Piece was first performed at the Théâtre de l'Atelier in Paris early in 1967. In addition to the mobile functioning as a "conductor," the scoring calls for the musicians to actually use it as a featured percussion instrument. One is not conditioned to tolerate the striking of a Work of Art, and the sounds of breath-holding could be heard in the audience when the musicians first approached and played on the mobile. (It just occurred to me that striking a conductor is not very traditional, either.) Sandy and Louisa were in attendance, and seemed to enjoy the performance very much. (It is extremely dramatic to see the mobile and more than 100 percussion instruments in four groups, when properly staged.)

The piece has toured extensively in Europe and America but obviously cannot be published in the usual way that a musical work is handled. It is "one of a kind," and that score is forever integral to the mobile.

Calder Piece is my very deeply felt homage to one-of-a-kind Sandy Calder and to his life and work.

Further Thoughts on Calder

In recognizing the bottle drier as a beautiful "work" (author unknown), and accepting it as Art, Duchamp began a tremendously important aesthetic transformation—not destroying Art but adding profoundly to the expansion of the Art mentality, as Calder did. The acceptance of diverse elements, created by the artist, situated in a spatial relationship, subject to unforeseeable but necessarily relevant and integral variations of

that original relationship (a condition of "mobility"), is a profound realization that a "work of art" must not necessarily be static, but through the artist's foresight and acceptance of lifelike-ness in the initial conception of the work, all unforeseeable transformations of the relationships in that unique "mobile" construction are valid. This is an enormous revelation . . . it brings the heretofore static visual art experience into a vital relationship to the "time arts" . . . theatre, music.

Calder establishes a general density of
motion for each mobile, then
he leaves it on its own.

The objects inhabit a halfway station
between the servility of a statue
and the independence of nature.
—Jean-Paul Sartre

Brown establishes a general density of
potential for each composition, then
he leaves it on its own.

The sonic elements inhabit a halfway station
between the servility of form
and the independence of nature.
—E. B. (excusez-moi, J.-P.)

Tradition and Creation

By Chen Yi

I think that contemporary society is like a great, complex network of attitudes, values, and worldviews, in which everything exists within different cultures and environments. This network keeps changing at every moment, with different parties interacting with each other, so that each experience that we come across can become an exciting source and medium for creation. As for music composition, it is the precipitate of a composer's cultural and psychological background. A serious composer should learn to establish some relatively stable principles on which he or she can base creative work. Because I believe that language can be translated into music and because I speak out naturally in my mother tongue, there are Chinese blood, Chinese philosophy, and Chinese customs in my music. However, because music is a universal language, I hope to capture the essence of both Eastern and Western cultures, and to write more compositions that embody my own temperament as well as the spirit of this brave new epoch. I hope to improve the understanding between people from different cultural backgrounds and to further the peace of our new world.

My Musical Background

I was born into a family of doctors who had a strong interest in music. I had trained as a classical violinist since I was very young, and had played through almost all the major European classical violin repertoire before I really started composing seriously. When the Cultural Revolution overtook China in the 1960s, I tried hard to continue my music studies, practicing violin at home (with the mute attached), playing the piano (sight-reading score collections with a blanket hung between the hammers and the steel soundboard inside of the piano), and listening to record collections (with all the windows shut) before the Red Guards came to search our home and took all of them away. As a teenager, in 1968, I was sent to the countryside for two years of forced labor (with a hundred pounds loaded on my back, climbing to the top of mountains, and working sometimes twelve hours a day). I took my violin along, however, and, sometimes after hard labor, played simple songs interspersed with excerpts taken from my standard repertoire to local farmers. A positive aspect of this experience was the wider knowledge I gained of the life and music of my motherland and its people. I started thinking about civilization, and about the value of the individual's life and the importance of education. I even tried to educate

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the poor kids in the village. The more I "touched the ground," the more I learned from the common people, who have carried on the rich Chinese culture for thousands of years.

When I was seventeen, I returned to my home city, Guangzhou, and served as concertmistress and composer with the Beijing Opera Troupe Orchestra (a 35-piece ensemble consisting of an enlarged single-wind Western orchestra and a Chinese traditional instrument ensemble). At this time I began my research of Chinese traditional music, as well as of Western and Chinese music theory in my spare time—research that occupied me for eight years. When China's school system was restored in the late 1970s, I became one of the top applicants admitted to the Beijing Central Conservatory, where I began an eight-year, systematic study of Chinese traditional music, as well as strict training in Western classical music techniques (advanced ear-training, a heavy load of piano lessons, harmony, counterpoint, music analysis, and orchestration) and music history (both Chinese and Western). The required courses of Chinese traditional music included Chinese folk songs (from all provinces and ethnic groups, in local dialects), traditional instrumental music (including plucking, bowing, blowing, and percussion instruments), local operas (history and the styles of singing, as well as reciting, acting, accompaniment, makeup, costume, stage setting, etc.), and narrative music (*Qu Yi,* which is musical storytelling that is half spoken and half sung). We also went to the countryside every year to collect folk songs (for five years in the undergraduate program, plus three years in the Master's program). I could see what is natural—it's so close to my native language and the customs of my daily life! I felt that if I were to create my music in a language with which I am most familiar, using logical principles that are related to nature, then my compositions would be very natural in emotion and powerful in spirit. This is my ideal. With my String Quartet and *Duo Ye* (for solo piano) winning the top prizes in China's composition competitions, I obtained my Master of Arts degree in composition in 1986. That year, a whole evening concert of my orchestral works was presented at Beijing Concert Hall, which included my Symphony No. 1, Viola Concerto *Xian Shi, Duo Ye* (for chamber orchestra), *Sprout* (for string orchestra), and *Music for Two Ensembles of Wind and Percussion.*[1]

Duo Ye: A Piano Piece from a Field Trip

Duo Ye, for solo piano, was written in 1984, and has been performed in recitals and piano competitions by numerous pianists throughout the world. It has also been adapted for chamber orchestra, for pipa solo, and rewritten for full orchestra (*Duo Ye No. 2*).[2] Duo Ye is a form of age-old traditional song and dance of the Dong minority nationality in the Guangxi

Zhuang Autonomous Region of China. In Duo Ye, people stand in a circle with a bonfire in the center, and dance in slow steps toward one direction while singing a short phrase—"Ya Duo Ye"—in chorus, in response to a lead singer (often the tribune of a village), who stands aside and extemporizes the words of a song made with improvised short tunes, extending a warm welcome to guests or for celebrating a happy occasion. "Ya Duo Ye" are nonsense syllables; the phrase is sung as a refrain in the traditional dance Duo Ye, with intervals of a minor third, perfect fourth, and major second (see fig. 1). I traveled to the district of the Dong and Yao ethnic groups in Guangxi province with a group of composers from the Central Conservatory of Music in 1980. The warm scene left such a deep impression on me that I wrote the piano solo piece *Duo Ye* as a result of this field trip.

In *Duo Ye,* I took the pitch material (the three intervals) from the original refrain (pitch material "a" in the treble clef; see fig. 2) as the melodic motive to develop, and also used it to make up the dancing rhythmic chorale (pitch material "b" in the bass clef) as the accompaniment. In the beginning of the middle section of the piece, the "c" material is brought in (see fig. 3). It is developed from "a," but imitates a Beijing Opera tune (which represents my feeling as a visitor to the region).

The material is set homophonically or polyphonically. In presenting the singing style of the high-pitched mountain songs, I used many grace notes to decorate the basic notes of the melody. At the same time, I created hidden layers, with the same primitive pitch materials as in the repeated twelve-note rhythmic pattern that serves as the dancing accompaniment. The melodic contour of the pattern in the bass clef comes from material "c" (C, B♭, G, F, E♭, D, B, G♯), while the first, fourth, and sixth eighth notes are taken from the intervals of "a" and "b" (see fig. 4).

The overall rhythmic arrangement in the entire piece is dominated by an application of a telescopic principle originating in *Shifan Luogu,* a type of traditional percussion ensemble music in southeastern China. In *Duo Ye,* the combinations and contrasts between high and low parts, the design of the meters, and the numbers of groupings of notes, are all inspired by the original rhythmic organizations called "The Sum of Eight" and "The

Figure 1: Melody in the refrain of Chinese folk dance Duo Ye.

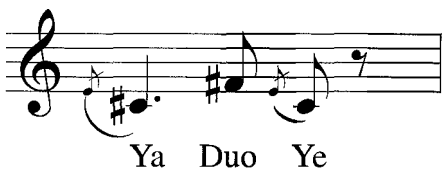


Figure 2: Pitch material "a" and "b" of *Duo Ye* (for solo piano).

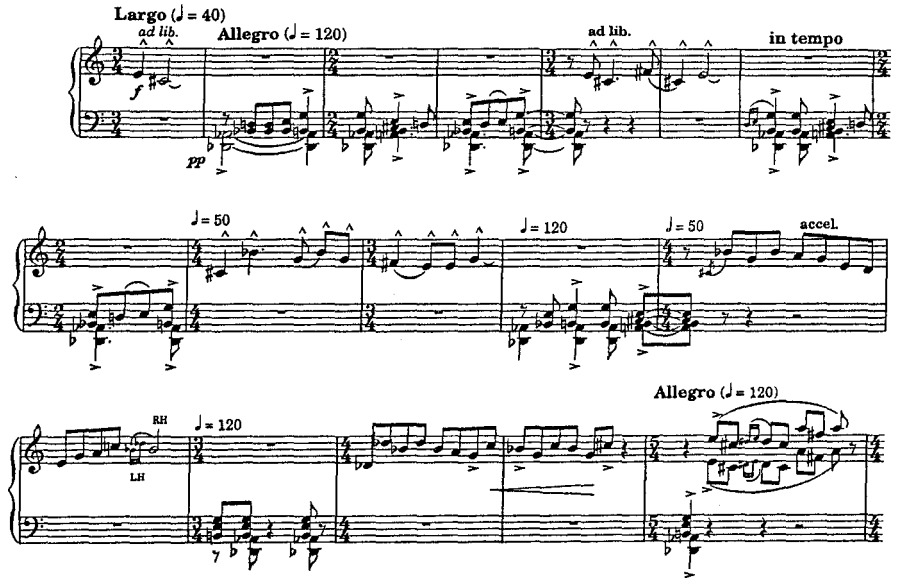


Figure 3: Pitch material "c" of *Duo Ye* (for solo piano).

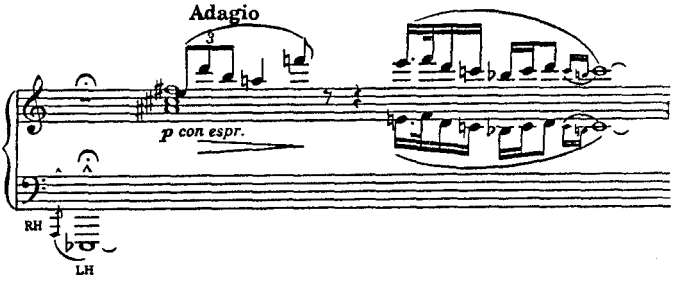
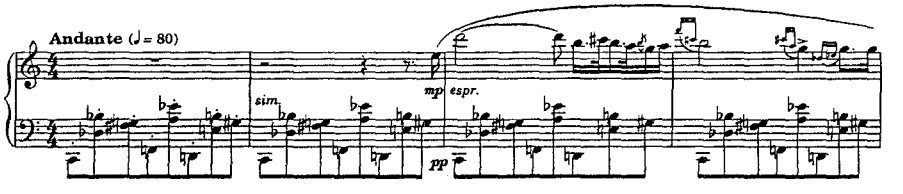


Figure 4: The twelve-note rhythmic pattern in *Duo Ye* (for solo piano).

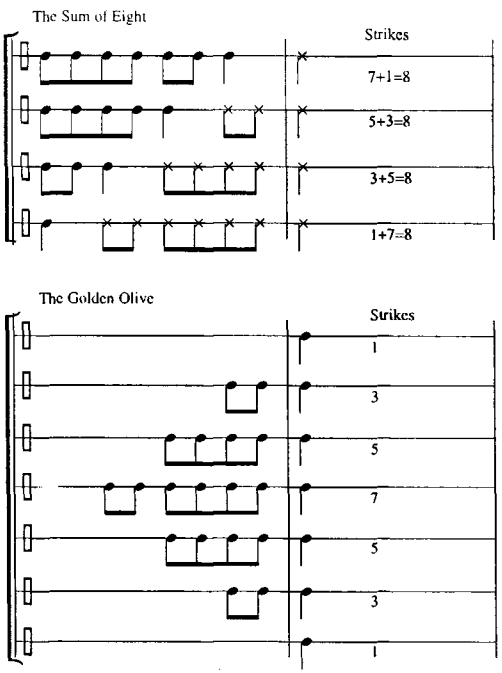


Golden Olive," from the Shifan Luogu (see fig. 5). The power of the primitive imagination, the highly energetic spirit, and the charming folk-singing are represented in the composition as the soul of the music.

* * *

Going to New York to study was an extremely interesting experience. I went to the music library at Lincoln Center to study new scores (written in many different styles), and attended numerous concerts, in small and large concert halls, clubs, churches, parks, subway stations, and on the streets. My mentor at Columbia University, Chou Wen-Chung, gave lectures on new music as well as on research in ethnomusicology, and analyzed many of his compositions with me in detail (culturally and technically). Mario Davidovsky taught me extensively in the areas of musical concepts, construction, and orchestral writing (as well as in electronic music composition). I also learned a great deal from my twentieth-century music theory course with George Edwards, from an early music course with Pat Carpenter, and from the Contemporary Music Practice course given by musicians of Speculum Musicae. These courses gave me the

Figure 5: Rhythmic structures from Chinese percussion-ensemble music Shifan Luogu.



ability to consider music not as new versus historical, nor as Eastern versus Western, but rather to consider the fact that human thought goes into all of these musics. I began to see similarities in musical styles, aesthetics, customs, feelings, and principles. As I considered composing in my own unique language, in my most natural voice and style, I began to be inspired by what I had learned from various cultural traditions, and even from scientific principles.

The Points: A Pipa Piece from Chinese Calligraphy

In 1991 I wrote *The Points,* for solo pipa, which was premiered by Wu Man at Columbia University, and presented by the New Music Consort in the NEWworksOCTOBER series.[3] The pipa (a four-stringed Chinese lute in the shape of a pear) is held in a vertical position and played with a plucking technique, using picks that are worn on all five fingers of the right hand. It has a wide range, which covers almost all chromatic notes from A2 to E6. There are more than seventy techniques for the left and right hands, which include a variety of ways of producing tremolo, vibrato, glissando, pitch inflection, and harmonics.

In the formative stages of this piece, I researched the traditional pipa repertoire extensively (most pieces are classified strictly into either lyrical music or martial music categories), learning all methods and principles of fingering (applied to both hands), and listening to the "inner voice" from various schools of pipa performance, in order to get myself really familiar with the language of the instrument.

The structure of *The Points* comes from the eight standard brushstroke movements of the Chinese character *yong* [eternal] in *Zhengkai* calligraphy (see fig. 6); the melodic material comes from *Qinqiang* music (a type of *Qu Yi* popularized in Shaanxi province). In this work, I integrated the essence of the traditional lyric and martial techniques; but its unique structure, melody, and basic tunings—I retuned the strings from A2, D3, E3, A3, to B♭2, E♭3, E3, A3, in order to easily meet the needs of playing the Qinqiang music material and the dissonant chords—were worlds apart from the traditional. The title refers to the contact points between brush and paper where a stroke commences, as well as to the characterization of the eight strokes, which have sensitive articulations and gestures (each stroke starts with a point—a unique touch to make its own shape—and

Figure 6: The Chinese character *yong* [eternal] in *Zhengkai* calligraphy.

goes continuously in a designated direction in order to complete the whole stroke). *The Points* also aptly captures the nature of plucked string music: the melody is created out of the musical "points" plucked forth by the fingers.

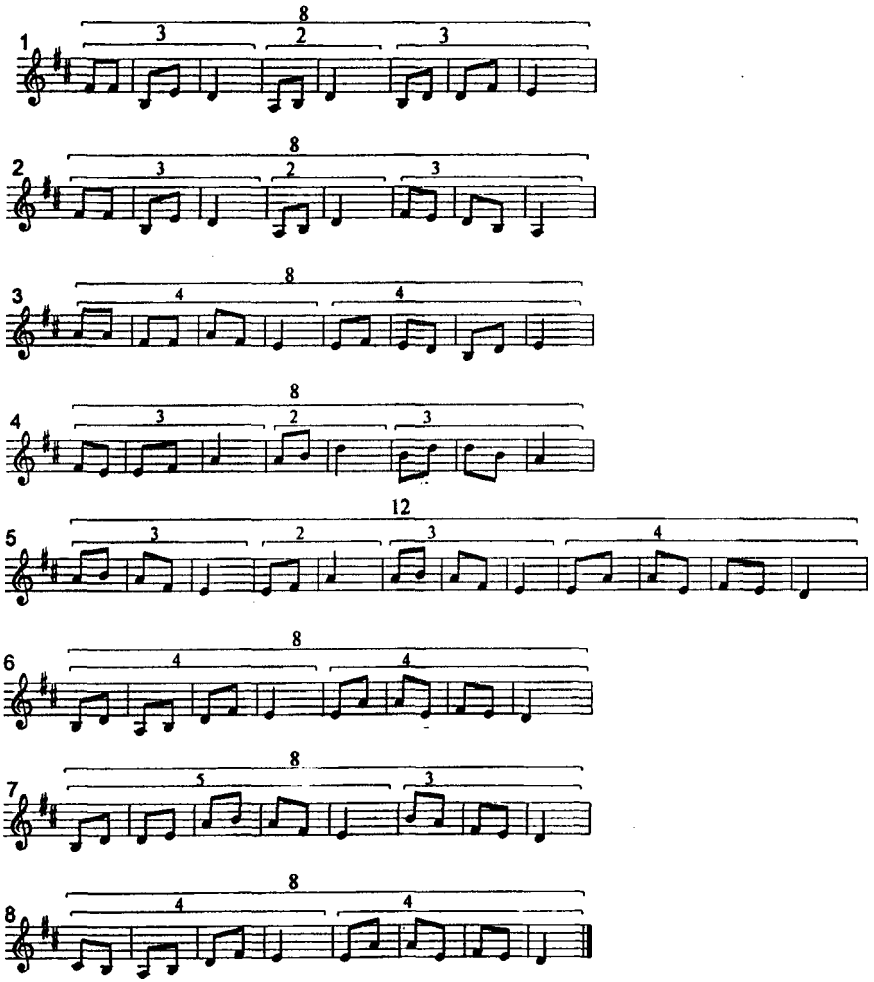
Since all eight strokes have different shapes, they need to be drawn carefully, with different gestures and speeds; sometimes the ink should be dark, sometimes faint; heavy or light. There is balance in the whole picture but there are different spaces between the strokes. By translating the concept into music, I constructed the whole piece based on the method of drawing each stroke of the character, one after another in order. In different sections, there are gripping portamenti, colorful vibratos, and vigorous strumming. There is one section in which an initial thick, humming-male vocal sound suddenly becomes a subtle yet bright soprano sound. I also use nontraditional position-jumps and string-spanning techniques borrowed from my Paganini violin repertoire, which allows greater flexibility for executing rhythms, dynamics, and melodic shape (with wide-range jumps between the lower and upper registers). There is also a forceful section that culminates in the major climax of the piece, which calls for sixty measures of extremely fast-moving sixteenth notes (inspired by a famous line from the poem "Song of the Lute" by the great poet Bai Ju-yi, who lived during the Tang Dynasty: "Like a pouring of large and small pearls into a plate of jade"). The concluding section is tranquil, simple, and lyrical, yet each note carries deep emotion, with subtle fingering variations and different types of harmonics, which make up the gradations of dynamics and timbres. The work ends with the sudden appearance of the *lun zhi,* a type of tremolo produced by using the five fingers of the right hand to pluck the strings rapidly, creating a strong, high tone, sustained for 36 beats. The last brush stroke comes as a finishing flourish. I hope that this work's conceptual daring, structural integrity, technical complexity, and rich "folk flavor" all help me to share my creative experience with my audience.

Sparkle: An Octet from the Form of a Folk Tune

After *The Points,* the New Music Consort commissioned me to compose the octet *Sparkle,* with funds provided by the Mary Flagler Cary Charitable Trust.[4] Pitch, rhythm, and form materials of *Sparkle* are drawn from the traditional Chinese *Baban* [Eight Beats] rules of the grouping of notes (see fig. 7).

With 68 beats in the entire piece, the original Chinese folk tune Baban consists of eight phrases; each phrase has eight beats (eight quarter notes) except the fifth phrase. Four quarter notes are added to the end of the fifth phrase. If we multiply 68 by the ratio 0.618 (the Golden Section), we

Figure 7: The Chinese folk tune Baban.



get 42.024. This point—the Golden Section—is right in the middle of the additional four quarter notes. There are five phrases before these four notes, and three phrases after them. The ratio in the Baban form is 5:3, a ratio that occurs in the Fibonacci Series. Alternatively, if we reverse the order of the phrases, the Golden Section will lie between the two highest pitches in the piece.

The Golden Section and the Fibonacci Series are found in both nature and human society. One can find the ratio in the proportions of the human body and in the leaves of some plants, as well as in human construc-

tions such as the designs and floor plans of some buildings, and in ancient Chinese theories of mathematics —even in the sizes of sheets of paper in the contemporary world. Because it reflects natural beauty and proportion, it is applied extensively in every field. In the course of several generations of performances of Baban, folk musicians must have transferred this natural feeling of balance from the visual arts and natural sciences to the form and rhythm of the music.

There are four kinds of groupings in the eight phrases of Baban. In the first kind, used in the first, second, and fourth phrases, three groupings are arranged as 3, 2, and 3 quarter notes; in the second kind of grouping, used in the fifth phrase, a group of 4 quarter notes is added to the end of the first kind of grouping; in the third kind, used in the third, sixth, and eighth phrases, two groupings are arranged as 4 and 4 quarter notes; and in the fourth, used in the seventh phrase, there are two groupings, arranged as 5 and 3 quarter notes.

Excluding the additional four beats at the end of the fifth phrase, there are eight beats in each phrase that belong to the first and second kinds of groupings, and the sum of each neighboring two numbers of beats (2 or 3) in the first two kinds of grouping is five. The relations between groupings represent the figures from the Fibonacci Series: 2, 3, 5, and 8. The relation of 3, 5, and 8 is also reflected in the fourth kind of grouping.

By contrast, the third kind of grouping is in a square structure, 4 + 4 = 8, and is balanced symmetrically. The symmetrical phrases (including the fifth phrase) are contrasted with those related to the Fibonacci Series. They form the basis for the changes, contrast, and balance for the entire piece. Among those four phrases, the third, fifth, and eighth are also in positions that are in accordance with the Fibonacci Series. In Chinese mythology, the form of Baban can be considered a parallel of a "seamless heavenly robe" (an idiomatic expression, meaning "flawless").

In the Chinese tradition, people favor the number 8—the sound "ba" (the number 8) also symbolizes good fortune—which indicates the number of the most famous mountains, the directions of the compass, the divisions of the agricultural seasons in the lunar calendar, the principal syndromes in traditional medicine, the sounds of musical instruments as classified by their physical sound-producing materials, the standard strokes of the character "yong" in calligraphy, the Eight Diagrams in Taoism, and so on. The folk tune Baban has become the maternal melody and model of many Chinese traditional music pieces throughout China. According to my extensive research, the variation methods used in all of these pieces include melodic decoration (adding grace notes and complications to the rhythms of the main melody), note borrowing (using some notes to replace the original, which may cause the mode to change), structural changes

(adding bridges), and enlarged form (expanding the original form without completely changing the structure of the original tune), or simply using the original melody as a framework for improvisation. In ensemble music, heterophonic variation is also used in different instrument parts, based on these instruments' special performing techniques. After years of serious study of Chinese traditional music, I have applied all of these methods, together with my knowledge of Western classical and contemporary music, to create my own musical works.

Written for flute (doubling piccolo), E♭ clarinet, two percussionists, piano, violin, cello, and double bass, the octet *Sparkle* is an eleven-minute *moto perpetuo*–like ensemble piece, expressing my impressions of sparks—everlasting flashes of wit, so bright, nimble, and passionate. I constructed it into a composite ternary form with parts arranged in a symmetrical design (A, A1; B, C, B1; A1, A). There are two pitch sources. One is taken from the pentatonic folk tune Baban (mm. 37–44, 168–79, 281–88, and 305), and the other is a twelve-tone row (A, E♭, C♯, D, A♭, F♯, G, F, E, B, C, and B♭, from m. 117). They are integrated with each other horizontally and vertically throughout the piece. The meter design in part A and A1 is based on the grouping principle in Baban (6, 4, 6; 6, 4, 6; 4, 4, 4, 4; 6, 4, 6; 6, 4, 6; 4, 4; 4, 4, 4, 4; 5, 5, 6; 4, 4, 4, 4). General impressions of the style of Chinese mountain-song singing and Chinese instrument playing also influence the sounds that are heard in the textures of the ensemble.

Qi: A Mixed Quartet in Proportion

After writing some orchestral and choral works[5] for the Women's Philharmonic and the vocal ensemble Chanticleer during my residency, supported by Meet The Composer's New Residencies program, I composed a mixed quartet entitled *Qi* (for flute, cello, percussion, and piano). I wrote *Qi* for the New Music Consort, San Francisco Contemporary Music Players, and Los Angeles Philharmonic New Music Group, with a grant provided by the Meet The Composer/Readers Digest Consortium Commissioning Program.[6]

In *Qi* (the Chinese character means air, breath, energy, and spirit), I tried to use a combination of Western instruments to create the sound from the East, as well as to express my feelings of the Qi: It is untouchable and mysterious, but very powerful; it melts into air and light; it's like the space in Chinese paintings; it fills in the space between the dancing lines of Chinese calligraphy; and it's the spirit in the human mind. In this composition I translated my general feeling of the Qi (i.e., nature) into my musical language, in a free and slow tempo. There are also exaggerated textures that are full of tension; through them I tried to sound the inner voices and spirit of human beings, to experience aurally this eternal power. Inspired by the form of the Chinese folk tune Baban, I used the Golden Section theory extensively in the creation of *Qi*—for the hier-

archical design of the structure, texture, timbre, tempo, dynamics, and rhythm.

Qi has two parts that have exactly the same duration (part I is from A to the end of E, part II is from F to the end of M), plus a small coda (N; see fig. 8). The duration of the total 201 measures, all in 4/4 meter, is about ten minutes. The work is in binary form with a recapitulation (J to M in part II). Measure 71 stands right in the middle of the two parts. The major Golden Section is located in G (m. 85), where the tempo is doubled from 56 beats per minute (mm. 1–84) to 112 bpm (mm. 85–196). In order to make the length and timing of the music equivalent during analysis, the previous measure numbers should be counted twice. Thus, $70 \times 2 = 140$ constitutes part I; $(14 \times 2 = 28) + 112 = 140$ yields part II (the first 14 measures are in the previous tempo). If we put the two parts together as a whole ($140 + 140 = 280$), we get the Golden Section at the beginning of m. 85 ($280 \times 0.6 = 168$; $168 \div 2 = 84$). According to the Golden Section theory, the big proportion is from A to G (mm. 1–84); the small proportion is from G to N. $85 \times 0.618 = 52.53$; thus, the first secondary GS (positive) is on E (m. 53). $112 \times 0.6 = 67.2$; $112 - 67 = 45$; thus, the second secondary GS (negative) is on J (m. 130, the 45th measure from m. 85).

In part I, A (mm. 1–12) and B (mm.13–24) are put together as an introduction, which exposes all the basic pitch and timbral materials. The same length (12 mm.) is used in both A and B, which anticipates the binary form of the whole piece. Furthermore, the opening phrase in the solo cello introduces all the major pitch materials developed in the entire piece. Material "a," the opening tritone, is taken from the oldest folk song that I heard during my field trip to Guangxi province. (This song was sung by the head of a Yao ethnic-group tribe, and tells of how, in Chinese myth, the giant Pangu created heaven and earth.) The major and minor seconds of "b" are taken from the intervals used in the cadences of most choral folk songs of the Zhuang ethnic group. The "c" material, a set of fast notes at the end of a phrase, is my imitation of the shape of mountain song-singing, which is close to the sound of speech (see fig. 9). The Golden Section method is introduced for the first time in the ministructures. In m. 8 of A, the sudden loud sound is "punched in" with a combination of bongo, crotale, and a screaming high note on the flute. The loudest point occurs at m. 21 of B, where the whole ensemble is playing.

Let's look at the music from C to F (mm. 25–70, the end of part I). When we put C and D together as the big proportion (mm. 25–52), and leave E as the small proportion in the section (mm. 53–70), the small GS starts right at E with a pizzicato cello solo. Synchronously, m. 53 is the point of one of the secondary Golden Sections (from A to G) of the piece as a whole.

Figure 8: Structure of *Qi*.

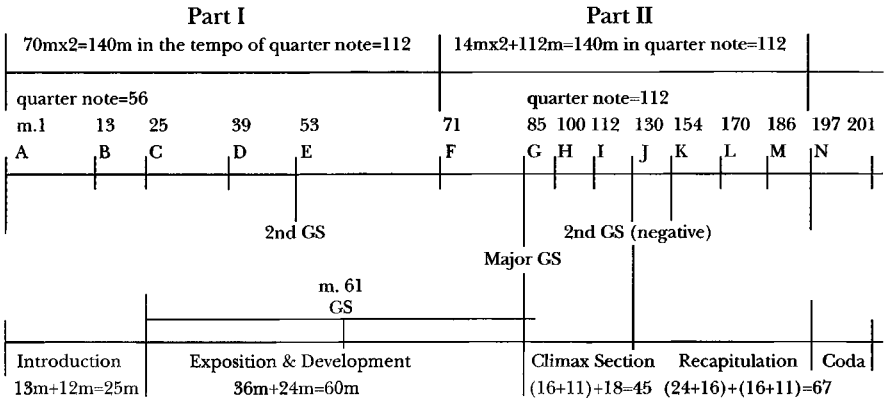
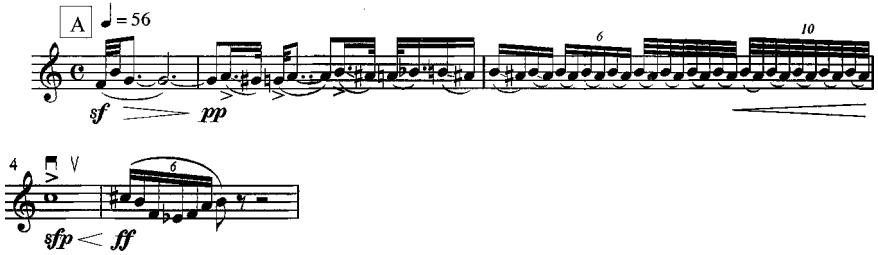


Figure 9: Melody of *Qi*, mm. 1–5.



Now we will take a closer look at C (mm. 25–38), where the music is lined up with the number of groupings on the piano part: 13 + 1, 11 + 1, 9 + 1, 7 + 1, 5 + 1, 3 + 1, and 1 + 1 (reducing the beats of quintuplets, plus one beat of septuplets inserted). The telescopic rhythmic arrangement is inspired by the Chinese traditional percussion-ensemble music Shifan Luogu, described above (see fig. 5), although one more important aspect I should mention is that no matter what rhythmic pattern the ensemble plays, the accented ending note is emphasized by tutti (which inspired me to have the logical single beat inserted with a sudden faster pattern). D (mm. 39–52) again has the same number of groupings: 13 + 1, 11 + 1, 9 + 1, 7 + 1, 5 + 1, 3 + 1, and 1 + 1—this time in the cello part (double sextuplets).

On the other hand, if we take the 70 measures of part I as a whole (from A to F), the negative GS falls in m. 25, where C starts. There are 46

measures in the later and bigger portion (mm. 25–70); the GS falls in m. 53, where E starts. Subsequently, there are 28 measures in the subdivided bigger portion (mm. 25–52), and the smaller GS falls in m. 39, where D starts. As for the 18 measures in the subdivided smaller portion (mm. 53–70), the smallest GS falls in m. 64, where the maracas are brought in again to echo the opening timbre and end part I.

After we reach the end of part I, there are 14 measures (same length as C or D) from F to G (mm. 71–84) to bring the music to part II. The percussion carries over the pulse from the previous fast-moving patterns in the piano and cello, which become soft, low, non-pitched quintuplets. The tension is increased, and we arrive at G (m. 85), where the tempo becomes faster, and the high tom-tom sixteenth notes are equivalent to 32nd notes (in the previous tempo). Although F delineates the midpoint of the whole piece, the music can't stop there but has to go on to G. Interestingly, if we exclude the introduction (mm. 1–24), and count from m. 25 to m. 84 (a total of 60 measures), the (positive) GS is located in m. 61 ($60 \times 0.6 = 36$), which is the softest point in part I!

Now we'll take a look at the structure from G to the end of M (mm. 85–196) in part II. There are 112 measures in the same tempo (112 quarter notes per minute). Since $45 + 67 = 112$, the small proportion is from G to the end of I (15 [G] + 12 [H] + 18 [I] = 45). This is the biggest section of the piece, which lasts for 45 measures (mm. 85–129). $45 \times 0.6 = 27$, and the 27th measure from bar 85 is the beginning of I (m. 112). $27 \times 0.6 = 16.2$, and the sixteenth measure from the beginning of bar 85 is the beginning of H (m. 100), where the percussion starts a cadenza.

As for the big proportion of 67 measures (from J to the end of M), 40 (J and K) + 27 (L and M) = 67. The beginning of J (m. 130) is the secondary (negative) GS of the entire work and the beginning of the recapitulation. L (m. 170) is the point where the melodic theme returns in a duet between flute and cello. $40 \times 0.6 = 24$; thus, 24 (J) + 16 (K) = 40. Measure 154 (K) is the point where the piano solo starts, and it lasts for 16 measures. $27 \times 0.6 = 16.2$; thus, 16 (L) + 11 (M) = 27, and m. 186 (M) is the transition part, which lasts for eleven measures before the coda begins. As a short conclusion, the coda lasts for five measures in the primary slow tempo (56 quarter notes per minute). In *Qi*, again, the grouping method based on the Baban form (see fig. 7) is used rhythmically in two places: mm. 117–28 in the percussion part, and mm. 157–68 in the piano part.

As usual, I hear Chinese instrumental sounds when I compose, even when using Western instruments. For *Qi*, I was asked to feature each of the four musicians in the ensemble; I could write anything I wanted, both musically and technically. I wrote the percussion part with the sound and rhythmic patterns of Beijing Opera percussion ensembles in mind (a muffled sound in the Chinese cymbals; a set of gongs, cymbals, and a big

drum used in the cadenza; etc.). The pizzicato cello imitates the Chinese plucked-string instruments as well as the sound of the *erhu* in the high range; the flute is played with the tone quality of a *dizi* (transverse bamboo flute), and also imitates the weeping sound of a *xun* (a wind instrument made from clay) in the low register; the piano has the gestures of a *zheng* (zither) and other plucked instruments. I use all four instruments carefully to hit certain points, to form the lines and textures horizontally and vertically, and I wrote the parts in various registers and for various tone qualities. All the instrument parts are formally and structurally functional, and express the emotions I felt. In *Qi* all four musicians are treated as soloists, though at the same time, the combinations between all instruments are sensitive, colorful, and powerful.

* * *

I am grateful to Dan Thompson and *Current Musicology* for providing this opportunity to share my creative experiences. I look forward to future opportunities to write about the creation of my orchestral and choral works. In doing so, I hope to make a contribution to our new culture and society.

Notes

1. A collection of these pieces was released by the China Record Corporation (AL-57).

2. *Duo Ye,* for solo piano, is published by Theodore Presser (110-40728), and recorded by Shi Shucheng on China Record Co. Guangzhou (CCD 90-088). *Duo Ye,* for chamber orchestra, has been released on China Record Co. Beijing (AL-57); *Duo Ye,* for solo pipa, has been recorded on CRI (CD 804) and on Avant (AVAN 021) by Min Xiao-fen. *Duo Ye No. 2,* performed by the Women's Philharmonic, and conducted by JoAnn Falletta, appears on New Albion (NA 090).

3. *The Points* has subsequently been performed worldwide, and recorded on Nimbus Records (NI 3568) by Wu Man, as well as on CALA Records (CACD 0504) by Min Xiao-fen. It is published by Theodore Presser Company.

4. The piece was premiered on 21 October 1992 at the Borden Auditorium, Manhattan School of Music. The work has been performed subsequently by many excellent chamber ensembles in the United States and Europe, and recorded on CRI (CD 804) by the New Music Consort, conducted by Claire Heldrich, and is published by the Theodore Presser Company.

5. *The Music of Chen Yi,* orchestral and choral works recorded on New Albion (NA 090); and choral works included on the CDs *Wondrous Love* and *Colors of Love* (1999 Grammy Award) on Teldec (16676-2) and (3984-24570-2).

6. *Qi* was premiered in 1997 and recorded on CRI (CD 804), published by Theodore Presser Company (114-40901).

Listening and Composing

By Jason Eckardt

Long before I was a composer, I was a listener. Listening has always shaped my compositional decisions, and it has always been the primary influence on the evolution of my compositional techniques. The intense investigation of the nature of listening—in particular, trying to comprehend how I understand the music that I hear—has most powerfully molded the way that I write music.

The music I like to hear is music that surprises and beguiles me. It is music that is unpredictable and volatile, and that resists easy categorization. While the immediate features of the music I write intentionally embody the above qualities, I am deeply concerned with establishing a subtle, underlying continuity in my works. Specifically, I seek to imbue my compositions with a sense of harmonic relatedness. One way in which I achieve this is by imposing limitations on ways in which the pitch materials are organized.

In tonal music, the perception of harmonic relatedness is linked to several phenomena: fixed intervallic structures of scales, invariant pitch-class content within each individual scale, and different harmonic functions of scale degrees and chords in tonal progressions. My music, which is atonal and chromatically saturated, does not maintain the invariant pitch-class content of scales, nor does it exhibit the harmonic functions characteristic of progressions in tonal music.[1] What my harmony does share with tonal music, however, is interval-class invariance. In tonal music, one can modulate from one key to another and maintain a sense of harmonic relatedness. While some tonal modulations result in little pitch-class duplication between keys, these keys are still harmonically related, due to the invariant interval vector of identical pitch-class set types that comprise their respective diatonic scales. A harmonic relation that results from shared intervallic properties of pitch-class set types informs the harmonic organization of my music. Harmonic relatedness is achieved through the articulation of parametrically defined musical segments comprised of identical unordered pitch-class set types and their unordered subsets or supersets.

My works explore microtonal harmony, using an aggregate that divides the octave into twenty-four equidistant pitch classes. A twenty-four pitch-class octave, notated in quarter tones, facilitates my use of set-theoretical techniques (adjusted to mod 24).[2] Composing for acoustic instruments in

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the mod 24 environment presents particular challenges. In musical situations with certain acoustic instruments, passages using quartertones may be difficult or impossible to perform in some registers or in rapid gestures. Instruments limited in their pitch production to only semitonal pitches (when used idiosyncratically), such as piano and pitched percussion, present additional limitations.

To address these practical considerations, I developed a harmonic system that combines two kinds of unordered pitch-class set-types: quartertonal and semitonal. These two kinds of sets are interchanged depending on the musical context, allowing me to compose a greater variety of instrumental gestures while still incorporating quartertones.

In my composition *Polarities,* two unordered pitch-class sets, one quartertonal and one semitonal, are used as the set-types from which other subsets and supersets are drawn. They are [0,1,2,7,8,12] and [0,2,4,6,12,14].[3] The choice of the [0,2,4,6,12,14] was prompted by its inversionally combinatorial property, which enables me to form the semitonal aggregate using the transpositional/inversional operation T22I. Additionally, these two set-types share set type [0,2,8,12] (fig. 1),[4] a tetrachord that contains all of the semitonal interval classes, allowing maximal intervallic variety within gestures to be composed with the set-type. (Generally, pitch-class set-types with the greatest variety of interval classes were chosen as subsets, for the reason stated above.) By exploiting this shared subset, and others like it, I create harmonic relatedness between sets.

From these [0,1,2,7,8,12] and [0,2,4,6,12,14] hexachords, particular subsets are derived (see fig. 2a).[5] All pitch-class set-types share some subset with some higher cardinality set of their own kind (semitonal or quartertonal). For example, [0,2,4,10] is embedded within [0,2,4,10,12], which itself is embedded within [0,2,4,6,12,14] (fig. 2b). Similarly, [0,1,6,8] is embedded within [0,1,2,7,8], which is embedded within [0,1,2,7,8,12] (fig. 2c). These subsets themselves also share subset relations between semitonal and quartertonal set types. For example, [0,2,4,10] and [0,1,2,7,8] share a [0,2,8] trichord subset (fig. 2d), while [0,2,4,10,12] and [0,1,2,7,8,12] share [0,2,8], [0,2,12], [0,4,10], and [0,4,12] trichord subsets (fig. 2e).

These pitch-class set types are used as the pitch material for the parametrically defined segments. Segments consisting of different multiplicities of pitch classes are derived as subsets of the two source hexachords. Quartertonal passages appear simultaneously with semitonal ones, all harmonically related by shared subsets. Figure 3 illustrates a representative passage from *Polarities,* where quartertonal and semitonal sets are used. The tetrachordal gesture in m. 26 is pitch-class set-type [0,1,6,8]. The

Figure 1: Shared [0,2,8,12] subset between [0,1,2,7,8,12] and [0,2,4,6,12,14].

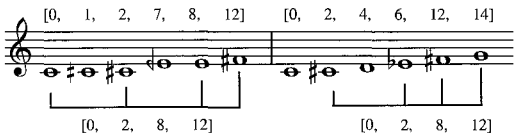


Figure 2a: Subsets derived from [0,1,2,7,8,12] and [0,2,4,6,12,14] hexachords.

Subsets derived from [0,2,4,6,12,14]:

Cardinality	*Pitch-class set-type*
3	[0,2,4], [0,2,8], [0,2,10], [0,2,12]
4	[0,2,4,10]
5	[0,2,4,10,12]

Subsets derived from [0,1,2,7,8,12]:

Cardinality	*Pitch-class set-type*
3	[0,1,2], [0,1,6], [0,1,8], [0,3,10]
4	[0,1,6,8]
5	[0,1,2,7,8]

Figure 2b: Subset relations among semitonal pitch-class set-types.

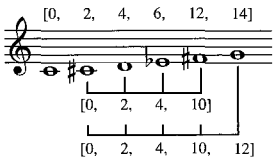


Figure 2c: Subset relations among quartertonal pitch-class set-types.

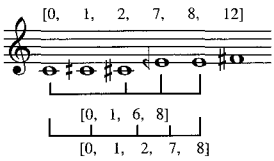


Figure 2d: Subset relations among quartertonal pitch-class set types.

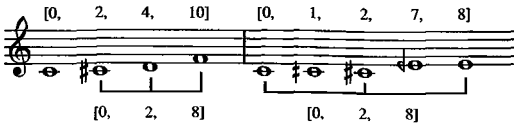
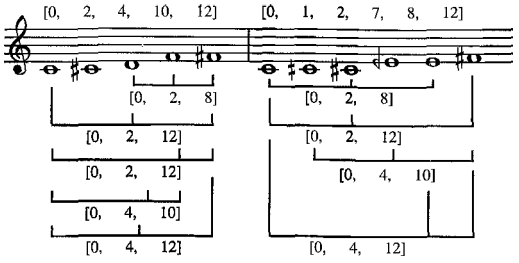


Figure 2e: Subset relations between [0,2,4,10,12] and [0,1,2,7,8,12].



three gestures that follow, form, respectively, [0,2,12], [0,2,4,10], and [0,1,2,7,8] pitch-class set-types (all subsets derived from either the [0,1,2,7,8,12] or [0,2,4,6,12,14] hexachords). They share multiple subset relations. The [0,1,6,8] tetrachord type in m. 26 is embedded in the pentachord type [0,1,2,7,8] in m. 27. Both share [0,2,8] with the [0,2,4,10] tetrachord type in m. 26, and all share [0,2] with the [0,2,12] trichord in m. 26.

For segments comprised of pitch-class sets with a cardinality greater than six, a pitch-class set with a cardinality of six or less, taken from the hexachord or subset types listed in figure 2a, is intersected with some other pitch-class set-type from figure 2a by using a transpositional/inversional operation. This operation yields some multiplicity of intersecting pitch classes whose cardinality is less than the cardinality of the larger set, producing a pitch-class superset with a cardinality greater than six.[6] In figure 4a, the middle gesture is comprised of a [0,2,4,6,8,12,14,16] octachord surrounded by trichord gestures that contain pitch-class set-types [0,2,10] and [0,1,8], respectively. The [0,2,4,6,8,12,14,16] octachord is a superset yielded from intersections of the pitch-class set-type [0,2,4,6,12,14] and a transposition of that hexachord by a minor second (fig. 4b). Through pitch-class set-type inclusion, the adjacent [0,2,10] and [0,1,8] pitch-class set-types are related to the [0,2,4,6,8,12,14,16] octachord through subset content. Additionally, the octachord is also related to pitch-class set-types

Figure 3: Adjacent semi- and quartertonal pitch-class sets, mm. 26–27 (clarinet).

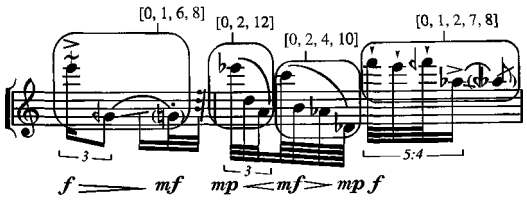


Figure 4a: Pitch-class superset, mm. 131–32 (cello).

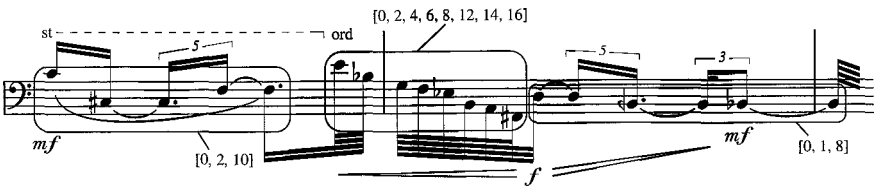
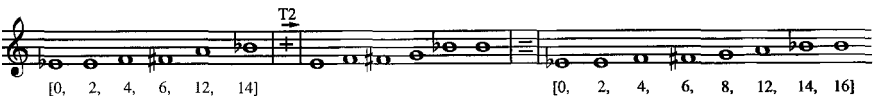


Figure 4b: Superset formation.



with a cardinality of six or less, and supersets derived from them, that characterize the harmony throughout the composition.

Thus far, pitch-class set-types have been discussed with regard to their subset and superset relationships. What is equally important to me are the pitch-class sets' pitch-class relationships to one another. To maintain a chromatically saturated environment, I use transpositional/inversional operations that yield little or no pitch-class intersection from set to set, determined through the use of T and I matrices.[7] These operations are applied to provide the transpositional/inversional levels of successive pitch-class sets. Figure 5a illustrates two adjacent segments that share no intersecting pitch classes. If C = 0, the first segment, a [0,1,2,7,8] pentachord, can be represented as the unordered pitch-class set {2,3,4,9,10}, or at transposition level 2 (T2). The following segment, a [0,1,2] trichord, is presented at T19, or {19,20,21}. The transpositional relationship between these unordered pitch-class sets may be described as T17 (fig. 5b). T17 was chosen as the pitch-class operation because it yields no intersections between the

Figure 5a: Adjacent gestures sharing no pitch classes, mm. 110–11.

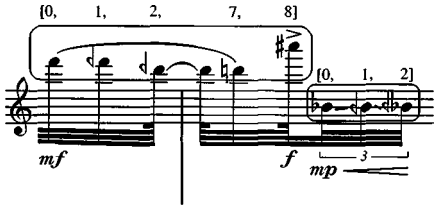
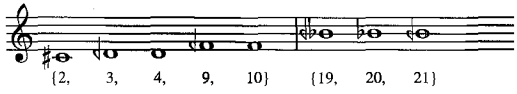


Figure 5b: Transpositional relationship between sets.

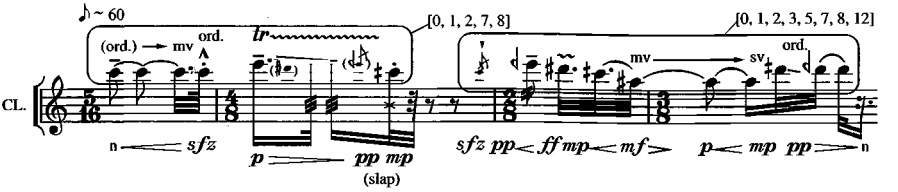


two pitch-class sets. As a result of this transformational strategy, the harmonic environment, while not necessarily aggregate-forming, nevertheless supplies the degree of chromatic saturation I seek.

There are several other pitch-class set operations that also yield no pitch-class intersections. Which specific pitch-class set operation to use is not formalized. Rather, I make these decisions contextually, since different pitch-class set operations yield different pitch classes. Most often, the avoidance of pitch-class repetition in a passage composed of several pitch-class sets is the primary factor influencing my decision of which pitch-class set operation to use. Not every situation calls for minimal pitch-class intersection between pitch-class sets. In some contexts, I use the T- and I-matrices to provide transpositional/inversional levels that generate pitch-class sets with partial or maximal pitch-class intersection between them. Figure 5c illustrates two pitch-class sets with maximal pitch-class intersection. The first gesture is comprised of the pitch classes C, E, D♯, E♮, and C♯, forming the [0,1,2,7,8] set-type. The second gesture adds three new pitch classes, A♯, D♯, and D♮, to the previous five to form the [0,1,2,3,5,7,8,12] pitch-class set-type.

Crucial to the deployment of the harmonic materials in my music is the manner in which these pitch-class sets are articulated within the music. I conceive the musical surface as the succession of the local, moment-to-moment events that constitute the musical flow. While I seek to establish continuity through my harmonic resources, I also try to encourage perceptual segmentation, the mental "breaking up" of this flow into smaller

Figure 5c: Maximal pitch-class intersection in adjacent gestures, mm. 1–4 (clarinet).



parts, through parametric manipulation. The harmonic motion of the musical surface, for example, is characterized by distinct harmonic areas that move at various rates; but as subset- and superset-related pitch-class sets are used to define harmonic groupings and events, the beginning and ending of these groupings is defined by parametric changes in the musical surface. By parametrically differentiating groups, I articulate the aforementioned pitch-class sets as perceptually discrete, independent local structures. I intend that the listener infer patterns and invariances among these structures, ultimately leading to the inference of middleground and large-scale formal divisions.

Recent work in music theory and cognitive psychology supports my intuitions regarding how various parameters, in collaboration, encourage perceptual segmentation. In their writings on the contemporary repertoire, Tenney and Polansky, Uno and Hübscher, Berry, Nonken, and Lerdahl and Jackendoff concur that changes in individual parameters on the musical surface contribute to cognitive grouping structures.[8] These scholars agree that the strongest factors for grouping are proximity (in time) and similarity (in all other parameters). The determination of structure in atonal music may be linked to the comparison of patterns and processes inferred from the characterization of the musical surface. It is through these comparisons that a listener defines musical event groups as similar or dissimilar to one another, and then posits segmentation boundaries in the music.

The importance of parametric change in the perception of atonal music has also been supported by empirical studies. Work by Clarke and Krumhansl (1990: 213–52) suggests that when listening to atonal works, listeners rely heavily on parametric characteristics to accurately encode, organize, and remember musical details. In an experiment conducted by Deliège (1989: 213–39), listeners, regardless of degree of experience listening to atonal music, appeared to privilege the attributes of timbre, texture, and density to insert perceptual "cues," the mental markers that delineate perceived structural boundaries at points of parametric change. Perhaps most importantly, Krumhansl has shown that listeners are able to

extract characteristics from the musical surface of an atonal work and generalize insightfully about its musical materials.[9]

To encourage the perception of the segments as distinct from one another, I manipulate parameters of the musical surface: pitch, rhythm, timbre, articulation, register, and dynamics. The temporal proximity of event groups is perhaps the most important factor contributing to the segmentation of the musical surface. Where I place event groups temporally within a work is not determined systematically; this is usually dictated by processes of accretion or degradation that characterize the background structure of large sections of a composition. I also take into account temporal segregation, in terms of whether groups are temporally adjacent (one directly following the other, without pause) or temporally non-adjacent (separated in time by some kind of pause, but not interpolated with other events). Similarity between groups may be inferred from comparisons of the groups themselves. The degrees of similarity or dissimilarity are not quantified. This is a contextual decision that is often related to the articulation of phrases (middleground segments consisting of several event groups) in individual melodic lines. My techniques only suggest ways in which I might use individual parameters operating on a musical event group to encourage the perception of boundaries between a musical event group and the groups adjacent to it. More specifically, I endeavor to make event groups dissimilar enough to be perceived as separate local units.

Non-pitch parameters contributing to the perception of musical event groups as distinct from one another are outlined below. These parameters are variously applied in order to articulate groups, as exemplified by my composition *Polarities.*

1. *Rhythm.* Musical passages in this piece may be characterized as rhythmically regular or irregular. Regular rhythms can be defined as at least three consecutive attacks characterized by the same temporal interval between each attack; for example, three adjacent eighth notes in succession possess, contextually, a high degree of regularity. An irregular rhythm is characterized by different temporal intervals between successive attacks in a single melody. A shift from one to the other contributes to the perception of a boundary between the two segments of a passage. A change in the speed of a regular rhythm to another regular rhythm can also encourage the inference of a perceptual boundary at the point of rhythmic acceleration or deceleration. Figure 6a illustrates three shifts in rhythm from irregular (C, C♯, F, in three different durations), to regular (a descending sixty-fourth-note figure), and back to irregular (D, B♮, B♭, in three different durations).[10] In figure 6b, two adjacent gestures are characterized

Figure 6a: Events differentiated by changes from irregularity to regularity, mm. 131–32 (cello).

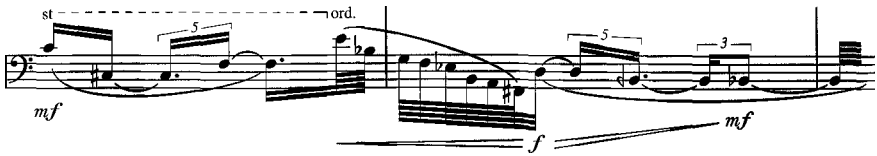
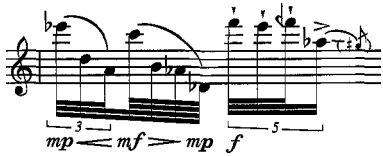


Figure 6b: Events differentiated by change in speed of regular rhythms, m. 27 (clarinet).



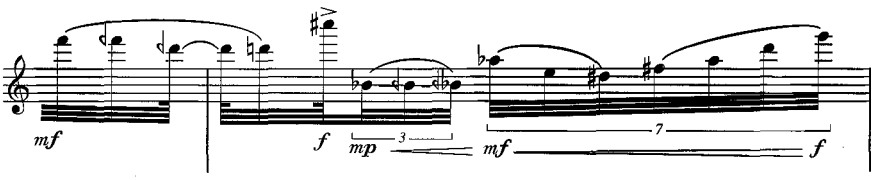
by their regular rhythms moving at different speeds. A gesture featuring regular thirty-second-note triplets precedes a gesture consisting of four consecutive sixty-fourth notes. The relative changes in either regularity or speed between the gestures in these two examples distinguish them as separate, to some extent, from one another.

The change in speed between one regular rhythm and another, as well as the shift from regularity to irregularity or vice-versa, may only be perceived retroactively. The temporal space between two rhythmically contrasting event groups that are regular and irregular is construed as a continuation of the former gesture until the latter's rhythmic identity is recognized. Similarly, two gestures that are rhythmically periodic can only be identified as different rhythms after the later gesture has been rhythmically established, since the temporal space between the two groups is only an indication of the final duration of the former group's rhythm.

2. *Register.* The register in which an event or group is presented can distinguish it from other events or groups around it, particularly if there is a large registral space between one event or group and the next. In figure 7, the flute moves between two distinct registral areas. The first gesture is stratified in the registral area between D♮6 and C♯7.[11] The following gesture is placed in a noticeably lower register, from B♮♭4 to B♮4. The final gesture ascends to the two octaves above that range (D♯5 to G6), representing a return to the registral area of the first gesture.

3. *Articulation.* Articulation can be defined as a particular kind of musical enunciation that a performer affects in the musical realization of a sound. I manipulate articulation to facilitate the perceptual segmentation

Figure 7: Events differentiated by register, mm. 110–11 (flute).



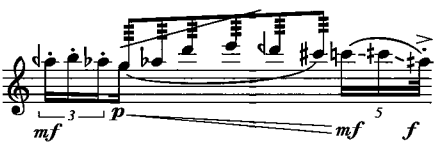
of the musical surface. Figure 8 depicts changes in articulation. The triplet marked staccato is contrasted with the slurred grace-note passage that follows. These two gestures can be interpreted as distinct from one another because of their change in articulation.

In addition to the changes noted above, the grace-note gesture exhibits another shift in articulation: fluttertongue. Fluttertongue is distinct from the staccato/legato shifts in articulation in that, like tremolo-bowing on string instruments, it is really a change in rhythm, one whose individual attacks are too rapid to be perceived as such. Other interparametric articulations include glissando and vibrato. Glissando is a manipulation of pitch, in which one pitch does not discretely move to another. This type of change in pitch is articulated in infinitesimally small increments between one pitch and another. Vibrato is a combination of either pitch (alternating movement above and below a primary pitch and other pitches) or dynamic (alternating movement between amplitude levels) and rhythm (the rapidity and periodicity of the pitch deviation or dynamic flux).[12] I consider these types of performance realization to be "articulations," in the sense that they are modes of sound production that are probably closer to the staccato/legato continuum of musical perception than to the other parameters mentioned.

4. *Dynamics.* Dynamics, relative degrees of amplitude, enhance the perception of segments on the musical surface. Two types of dynamic change are represented in figure 6b. The first is a direct shift from one dynamic to another. At the close of the sixty-fourth-note figure, the dynamic level has reached *mezzo piano.* The quintuplet gesture that follows suddenly increases this level to *forte.* The second type of dynamic change is gradual: crescendo and decrescendo. The thirty-second-note triplet begins at *mezzo piano* in figure 6b, then witnesses a steady crescendo to *mezzo forte,* which in turn decrescendos over the course of the sixty-fourth-note gesture to *mezzo piano.*

What differentiates this latter type of parametric transformation (a gradual shift of a parametric identity over time, as opposed to a sudden parametric change) is that the process itself internally defines the segment in which it occurs. In my music, the initiation and termination of these processes starts or ends at the beginning or end of a musical event group

Figure 8: Events differentiated by changes in articulation (clarinet).



whose boundaries I mean to articulate. Because of their transitory nature, crescendi and decrescendi as indicators of change to aid in segmentation are probably weaker than immediate changes in dynamic. It is my perception that any gradual transition from one parametric state to another is weaker than a direct shift in that parameter.

5. *Timbre.* Timbre may be one of the strongest factors to signify change on the musical surface. My music does not generally exhibit direct changes in timbre in their most blatant form; I generally do not distinguish gestures by shifting from one instrument to another in a single melodic line. Instead of this overt change in timbre, I use subtler types of timbral change to articulate gestures, often by manipulating the timbre of an individual instrument, usually in relation to shifts in articulation. In figure 8, the grace notes are articulated as a fluttertongue; the addition of the fluttertongue articulation clouds the partials of the clarinet's pitches, resulting in a less timbrally coherent sound[13] and a distinctly different timbre. This shift in clarinet articulation is therefore heard as a change in timbre, related to a string instrument switching from bowed to plucked, or a percussion instrument being struck with mallets of different hardnesses.

The strongest boundaries between event groups posited by timbral change result from one unchanging timbre suddenly changing to another. Additionally, a steady transformation of timbre over time from one kind of timbre to another, like a steady increase or decrease in dynamic, also indicates parametric change between segments. Like gradual dynamic transformations, I use timbral transformations that start at the beginning of the event group and finish just before—or arrive at—the beginning of the next event group to define boundaries. Figure 9 illustrates a gradual timbral transformation, a transition between bow positions on the strings of the cello. The first double-stop (C–E) is sounded *sul ponticello.* It then moves steadily to *sul tasto,* with the completion of the glissando from E to E♭. Finally, the bow movement reverses its trajectory to arrive at the normal bow position *(ordinario)* at the shift from E♭ to E♮. Similar timbral transformational effects could be produced by changes in bow attack position *(col legno* to *ordinario),* or changes in bow pressure (*ordinario* to "crunch" bow).

Figure 9: Events differentiated by timbral transformation, mm. 26–29 (cello).

6. *Segregation.* Perhaps the strongest indicator of a segment boundary in music is segregation: a perceptible pause, or temporal space, between event groups.[14] Event groups that are temporally adjacent, where one event group begins just as the previous group ends, are less strongly perceived as two separate segments. Figure 10a shows two temporally non-adjacent event groups. While both segments feature multiple types of articulation, dynamic, rhythm, and timbre (in the fluttertongued and slap-tongued pitches), they are clearly separated by the silence between them, which facilitates their perception as separate event groups.

The listener can infer pauses in the music without absolute silence. If an event group ends with a sound whose duration is significantly longer than other durations in the event group, that long duration may play the role of a silence in aiding segmentation. A space between two event groups, even in the context of multiple events occurring simultaneously, could be understood as nearly equal to silence. Figure 10b shows two clarinet gestures separated by a rest, while the cello simultaneously holds a double stop throughout the clarinet pause. While there is not complete silence, the space created between the two clarinet gestures encourages the hearing of the two gestures as separate. There are many reasons why the clarinet takes perceptual precedence. The clarinet is much more active—both in its internal parametric changes and in the number of elements that comprise its gestures—and could be said to be in the musical foreground. The cello is static by comparison, directing the listener's attention toward the clarinet. Further, the relegation of the cello to the background may encourage the listener to hear the two clarinet gestures as separate segments, and to emphasize the musical rest between them, since the cello is clearly playing a secondary role.

As previously suggested, rhythm, register, articulation, dynamics, timbre, and segregation are closely related. For example, register affects timbre: the timbre of the flute changes as its pitch moves from the lowest register to the highest. Similarly, certain types of articulation affect the perception of timbre or loudness (for example, an accent mark increases loudness, and may affect the timbre of a violin bowed more strongly to facilitate the accent, which subtly changes the bow pressure, bow position,

Figure 10a: Events differentiated by segregation, mm. 1–4 (clarinet).

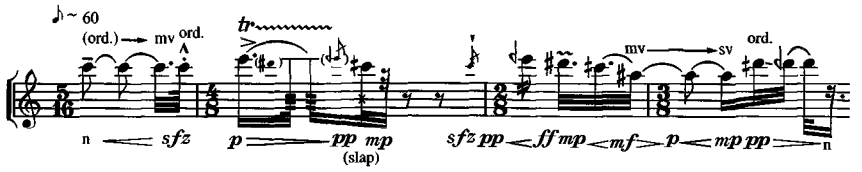
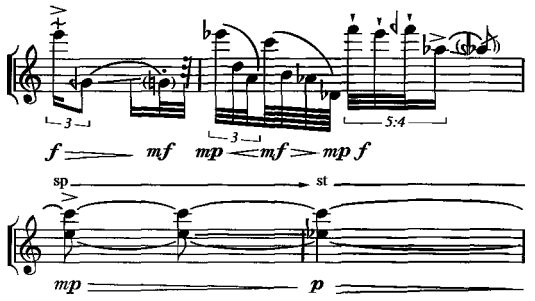


Figure 10b: Groups differentiated by segregation during multiple simultaneous events, mm. 26–27 (clarinet and cello).



and angle of attack on the string, as well as right-hand finger pressure on the fingerboard). For my purposes, the more overt characteristics of parameters are assumed to be more perceptually relevant than the subtle, simultaneous parametric characteristics with which they are intertwined.

As several theorists have noted,[15] not all parameters influence the perception of change on the musical surface equally. For example, segregation by rest is probably the most important factor in perceptual segmentation. But the contextual relevance of changes in some parameters cannot be underestimated. One can imagine a work that exhibits a particular trait in some parameter over a long period of time. If this parameter were to suddenly change, that change might be more perceptually salient (and might more strongly contribute to segmentation) than it would be in a context in which that parameter was in a perpetual state of transformation. Additionally, degrees of change within parameters can be major factors in perception. For example, a dynamic change from *mezzo piano* to *mezzo forte* may not be as perceptually salient as a change from *pianissimo* to *fortissimo.* To accommodate such differences in context and scale, one would have to develop elaborate systems of parametric weighting to be applied in compositional situations. Such an undertaking would have to

consider the difficult issue of quantitative or quasi-quantitative values of parameters in different contexts.[16]

The relative strength or weakness of a boundary encourages the mental establishment of grouping structures at hierarchically higher or lower levels. Neither gestural similarity nor higher levels of grouping structure, however, are subject to systematic organization in my compositions. The gestural similarity of two segments, particularly in the domains of pitch and rhythm, can weaken the boundary articulated by the repetition of material; repetition that suggests segmentation on a local level may suggest a larger grouping at a higher level. Figure 6b illustrates such a relationship: both slurred gestures feature gestural contours that are unidirectionally descending, rhythmically regular, and begin with the descending interval of a minor ninth. The quintuplet figure that follows is marked with a *martellato* articulation, is registrally invariant, and is sounded with a much louder, *forte* dynamic. Therefore, the boundary between the quintuplet gesture and the two gestures preceding it might be stronger than the boundary between the first two gestures because the first two gestures are parametrically and gesturally similar and adjacent.

All of the examples I have given, excluding figure 10b, are monophonic. As presented here, my compositional techniques address only the segmentation of single lines of music, or "streams."[17] An exception is the presentation of a registral compound line, a single melodic projection that alternates between discrete registers, which may be perceived as two simultaneous lines, providing that the registral area is not significantly deviated from in each registrally stratified submelody. Two separate melodies, while part of one larger melodic line, are implied through their registral disparity. Figure 11a illustrates such a compound line. The notes above the staff, E♭6, A♭5, and E6, are registrally distinct from the simultaneous lower line, an ascending figure of D4, G4, C♯5. Despite the identical staccato articulation and *forte* dynamic, these two submelodies of the larger gesture may be perceived as independent.

Different types of melodic separation within a single melodic line may be articulated using parameters other than register. In figure 11b, the clarinet projects two distinct lines through differences in articulation (*martellato* marks on the attacked grace notes {C, E, B♭}, opposing the unmarked measured notes), dynamic (*sforzando* markings on the grace notes opposing the *piano* crescendoing to *mezzo piano* markings on the glissandi notes), and rhythm (short grace notes opposing longer measured notes). Timbre may also distinguish a submelody in a larger melodic line. Figure 11c illustrates a long line articulated by clarinet slaptongues (marked by "x" on the note stem) within an extended phrase segment of non-slaptongue clarinet pitches.

Figure 11a: Events differentiated by compound line, m. 31 (clarinet).

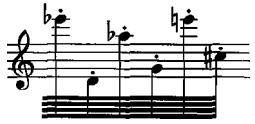


Figure 11b: Events differentiated by articulation, dynamics, and rhythm, m. 8 (clarinet).

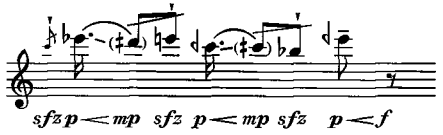
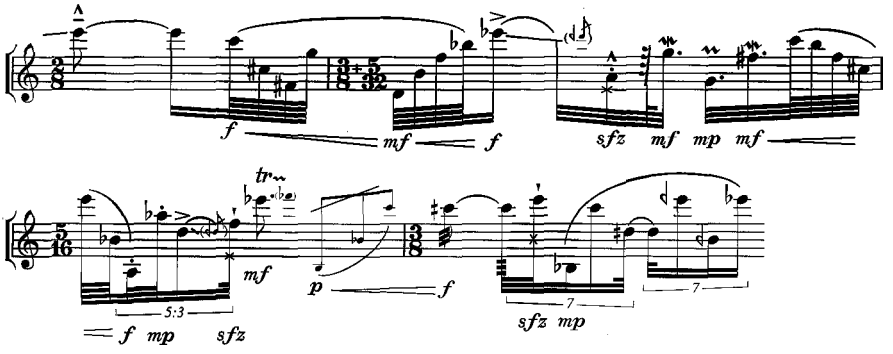


Figure 11c: Events differentiated by timbre within a phrase, mm. 33–36 (clarinet).



I do not endeavor to formalize a model to predict the apprehension of multiple segments simultaneously. However, the perception of multiple simultaneous segments is of great interest to me, as is evidenced by the polyphonic density of my musical textures. I believe that it is possible for a listener to segment multiple streams simultaneously. Just how many simultaneous streams can be perceived and remembered, with regard to my music, is a matter of compositional intuition. Further questions involve how multiple segments with overlapping boundaries are simultaneously perceived in my compositions. In figure 11d, the flute and violin participate in one melodic projection while the marimba, punctuated by rhythmic accents from the viola and cello, follows its own independent trajectory. Neither melody shares any rhythmic simultaneities with the other,

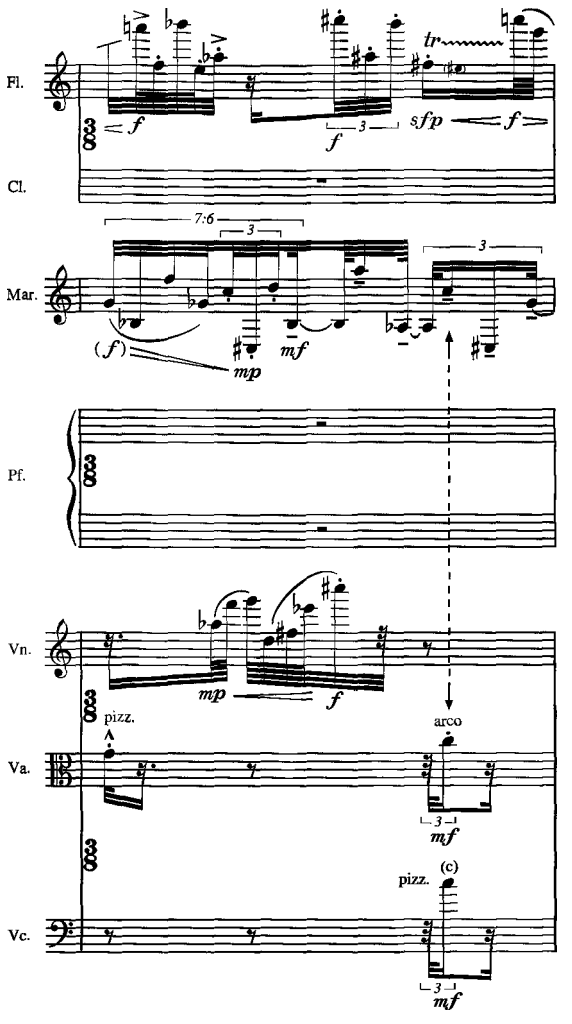
nor, since both are continuous melodies, do they share perceptible segment boundaries. Despite the increased perceptual complexity that results from nonsynchronic segment overlaps, such as those illustrated by the two instrumental groups in figure 11d, I think that it is possible to segment simultaneous streams.

A second type of overlapping occurs in figure 11d. The flute's first gesture ends on A♭, a pitch doubled in the same register by the violin. This A♭ is the first pitch of the violin's ascending three-note gesture. A four-note violin gesture follows, ending on C♯, a pitch doubled in the same register by the flute. The flute continues after the doubled C♯ with another gesture. The A♭ and C♯ doubled pitches in this passage may be perceived as members of both the flute and violin gestures resulting in segment overlaps. Since horizontally overlapping segments obscure the segment boundaries, I try to reinforce each segment's boundary, in this case by using timbral, articulative, dynamic, and rhythmic means.

My compositional techniques do not formalize the "vertical" harmonic relationships that result when segments are presented simultaneously. While my basic constraint is the avoidance of pitch-class duplication in simultaneous presentations of segments, the manner in which I combine these segments is an individual, contextual decision. While shared subsets within simultaneous horizontal and vertical presentations of pitch-class sets may generate a perceptible harmonic correlation, I do not prescribe any specific relationships of transposition/inversion between the two.

I am not attempting to create a music that is maximally cognitively transparent; this is not the kind of music that interests me. However, in seeking to locate an intriguing balance between continuity and disjunction in my music, I find myself continually evaluating and reevaluating the listening process itself. While the results of cognitive-psychological studies of atonal music are far from conclusive or comprehensive, my awareness of this research has greatly influenced my compositional techniques. It has helped me to create what I relish as a listener.

Figure 11d: Overlapping boundaries, m. 97 (flute, marimba, violin, viola, and cello).



Notes

1. Although still not resulting in tonal harmonic function, pitches could be stratified in atonal harmonic environments to give them contextual structural significance.

2. Using the integer model of pitch, modulo 12 has been used to describe octave equivalence of semitonal pitch classes, as opposed to the register-dependent definition of pitch. Modulo 12 may be defined as "two integers b and c are equivalent modulo 12 if and only if b = 12·n + c for some integer n." Octave equivalence

of pitch classes in a 24-tone octave may be defined as "two integers b and c are equivalent modulo 24 if and only if b = 24·n + c for some integer n." See Rahn 1980: 22–24; Forte 1973: 5–6.

3. All pitch-class sets from this point forward are notated in mod 24.

4. Other subsets are shared between the [0,1,2,7,8,12] and [0,2,4,6,12,14] hexachords. Only the subset with the highest cardinality, in this example and the others that follow, is noted.

5. Sets containing one or two pitch classes are not considered in the list of possible subset derivations. Derivations limited to one- and two-cardinality pitch-class sets seem too constrained and of little perceptual impact as a subset. I do not mean to imply that one- and two-cardinality pitch-class sets have no perceptual salience. However, because high numbers of interval-class types are present in the larger subsets, I do not believe that one- and two-cardinality pitch-class sets carry the same perceptual import as larger cardinality subsets. Multiple trichord derivations (as opposed to single subset derivations of pitch-class set-types with greater cardinalities) are employed to offer a wider range of trichord possibilities. Because of the high number of trichord derivations possible from the greater-cardinality sets, more trichord derivations are represented than in the subsets derived from greater cardinality sets.

6. "Superset" is used here to describe a pitch-class set in which a smaller pitch-class set is embedded in a larger set, resulting in an all-inclusive shared subset relation between the smaller pitch-class set and the superset of which it is a part. See Forte 1973: 25.

7. See Morris 1987: 70–73.

8. See Lerdahl and Jackendoff 1983: 297–98; Tenney 1988; Tenney with Polansky 1980: 205–41; Berry 1976: 37; Uno and Hübscher (n.d.); and Nonken 1999.

9. Krumhansl 1991: 401–11. This study documents responses to Olivier Messiaen's *Modes de valeurs et d'intensités.*

10. All segments represented in the examples that follow articulate some or all of the following: [0,1,2,7,8,12] and [0,2,4,6,12,14] hexachords, their subset derivations given in figure 2a, and supersets generated by pitch-class operations involving intersection.

11. The convention used to label the registral placement of pitch classes is suggested by the Acoustical Society of America. The number identifies the registral octave, based on the pitch class C in which the pitch class appears. Middle C is written as "C4," and each C above or below it is understood as beginning a new octave. For example, the octave that begins one octave above middle C is written as C5, C♯5, C♯5 . . . B♯5.

12. Gradual shifts in transformation, such as the ones discussed in the dynamic and timbral domains, might also be considered. However, the extremely limited capacity of acoustic instruments to perform these types of transformations (with exceptions such as a shift from *molto vibrato* to *senza vibrato*) does not make this type of change in articulation particularly useful for acoustic compositions.

13. Timbral coherence is defined by Bregman as a sound with a distinct set of partials that remain the same over time. Incoherent sounds are composed of a constantly shifting set of partials. See Bregman 1990: 104–06.

14. If all of the smallest local events on the musical surface are segregated, the size of the temporal space between events may become an important factor. Adjacent events that are close together might encourage the perception of them as being more connected than that of other adjacent events with larger spaces between them.

15. See Tenney with Polansky 1980: 208; Lerdahl and Jackendoff 1983: 298.

16. Weighting of parameters in analyses of post-tonal works has been applied by Tenney with Polansky 1980: 217–39; Uno and Hübscher (n.d.); and Nonken 1999.

17. See Bregman 1990: 642–54.

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The Disc Jockey as Composer, or How I Became a Composing DJ

By Kai Fikentscher

> Composition . . . *is the word used in Western culture for centuries to designate the creation of music in general. But the word has been mystified since the nineteenth century, such that it summons up the figure of a semidivine being, struck by holy inspiration, and delivering forth ineffable delphic utterances. Attali's usage returns us to the literal components of the word, which quite simply means 'to put together.' It is this demystified yet humanly dignified activity that Attali wishes to remove from the rigid institutions of specialized musical training in order to return it to all members of society.*
>
> —*Susan McClary*

> *Record art is, in brief, a composing of new pieces by means of available recordings.*
>
> —*DJ Westbam*

Only recently and somewhat reluctantly have DJs been accorded some degree of recognition in two musical worlds that rarely impinge upon each other: the music industry and the music academy. In both, DJs tend to be thought of as people who entertain audiences using mediated music, usually vinyl records or CDs, or who work as remixers or record producers by extending the commercial life of a pop song, thereby providing fellow DJs and dancers with music to liven up an evening of clubbing.[1] Some DJs (DJ Spooky or Christian Marclay, for example) have been critically acclaimed as cultural heroes of the postmodern age, cutting up and mixing various sources into collages of sounds that reflect our time—in which virtually any sound can be heard anywhere, divorced forever from the limitations of time and space. Other DJs (such as Rob Swift and Kid Koala) have abandoned the term "DJ" in favor of "turntablist," presenting the command of a set of turntables and a mixer as comparable to the mastery exhibited by virtuosos of conventional musical instruments. As professionals, some DJs now travel the world and enjoy an audience-appeal comparable to that of earlier or contemporary colleagues who were (or are) pianists, violinists, or guitarists. In the context of hip-hop and house music, deejaying is thought of mainly in terms of performance, which is understandable in view of the many other strands of largely orally transmitted, performance-based, African-American musical forms (such as work songs, hollers, blues, jazz, or gospel). In these forms, as much as in the context of deejaying, the focus

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appears to center primarily on the functional relationship between the music and its performance context. In other words, when performing, matters of time and space are crucial.

In contrast, the term "composition" is rarely encountered in the context of deejaying, perhaps because deejaying does not appear to be about composition in the traditional sense of the word. If we think of composing as an act of musical creation that is primarily concerned with the creation of a final and fixed musical work (i.e., a composition), then deejaying seems to be almost the opposite thereof. Deejaying, after all, involves making music by traveling in reverse. A DJ begins with fixed musical texts (compositions) and alters them in multiple ways, creating his or her unique performance (the mix) by undoing or "de-composing" finished compositions (in most cases, recordings not of one but of many performances mixed together to sound as one).

To speak then of deejaying as composing means to expand upon the traditional definitions of the concept of composing. Precedents for a more-inclusive definition can be found in traditions to which deejaying is conceptually related, where the word 'composition' has been used for quite some time already. In many streams of the African-American musical tradition (such as jazz and blues), where oral transmission is the general rule, the notion of composition has long been a part of the discourse, especially since the discourse of these genres has entered the academy. In contrast to jazz and blues, however, deejaying as performance art has a rather short history.[2] As a performing musician, the DJ has only recently entered the academic discourse. To refer to a DJ as a composer then may still sound rather odd or unusual to many at the beginning of the new millennium. However, if the history of the discourse of older African-American genres is any indication, this may change in years to come. A little more than half a century ago, who would have thought that music of humble, even controversial, beginnings, such as blues and jazz, would one day be hailed as America's only authentic musical contribution to the world—even as "America's classical music"?

Lacking the 50-year-plus hindsight advantage of a contemporary jazz or blues scholar, I have decided to discuss the DJ as a composer in autobiographical fashion. Having observed DJs close-up in many settings for more than a decade,[3] I have attempted to learn how to make music in DJ-specific ways by emulating those I studied, both in performance settings where observation was the prime method of investigation, and in formal and informal verbal exchanges where analytical and reflexive approaches amplified and fleshed out the behavior displayed in performance. Using Mantle Hood's concept of bi-musicality (1971) as an inspiration, this process included the acquisition of DJ technology, techniques, and repertoires early on, and has, spanning several years, involved me in practicing

various types of mixing and programming in both private and, more recently, public settings. The question of how a DJ composes is thus related to the question of how I, a formally trained jazz composer, became a composing DJ.

In New York, beginning in 1991, I entered DJ school. It was not a formal institution, but a school nonetheless. In my quest to better understand contemporary dance music, I was no longer content with merely collecting, or with listening and dancing to various kinds of dance music on record, such as hip-hop, house, disco, and reggae dancehall. Instead, I wanted to learn how to use the music on these records like a DJ, to better understand how DJs conceptualized music, dancing, and the relationship between the two. The method used to accomplish this was similar to the way musicians learn from their elders in many cultures around the world: by observing, witnessing, and emulating over long stretches of time—the way sons learn from their fathers.[4] Whenever I now program dance music at various kinds of establishments around New York City, I use the following considerations to select and organize the records I will use in performance.

1. How familiar will the audience be with a song? Drawing in an audience that came to dance means using music to which that audience can relate. Playing too much unfamiliar repertoire may be counterproductive.
2. How long have I owned the record? Does it still (or again) excite me? How long has it been since I last played it? How did my audience react then?
3. Does the record fit with others particularly well? It seems that certain records go well with certain others; I often learn this from listening to other DJs. Some records tend to form groups, by relating stylistically, thematically, or texturally to each other. Others have similar instrumentation, hooks, or voices, or share recognizable samples, phrases, or sounds.
4. Will the record add variety or monotony to the mix? With respect to the entire set of music, does the record keep, raise, or lower the musical energy level?
5. Will others in the audience be likely to be curious about the record, either because it's new or because it hasn't been played for a while?
6. Is the record in good condition? How will it sound on the PA system I will be using? What steps are necessary to ensure that it sounds as good as the previous or next record?

In addition to these considerations, composing dance music at a club involves the following in-the-moment decisions, which may be familiar to the improvising jazz musician:

1. How long should the record play? Is the audience getting more or less excited while the record is played through the sound system?

2. Is the texture "interesting" enough? Is the energy of one record compatible with that of the previous one(s) and/or the one(s) I want to play next? Let me consider texture, tempo, and maybe the key or mode.

3. What is the story I'm telling? To whom am I directing the music, the song? Whom am I trying to affect or move with the way I am putting together the music program?

4. How am I telling the story? What expressive means do I have at my disposal to be as compelling a storyteller behind the turntables as is possible? In other words, how do I compose as a DJ?

For the past thirty years or so, club deejaying has been an oral tradition, passed down from one generation of DJs to the next, with some DJs establishing themselves as more influential than others, becoming true master DJs in the process. Of all New York DJs, arguably the most influential DJ was Larry Levan. To this day, he is revered and remembered as the epitome of what a club DJ should be. The example he set in the DJ booth at Paradise Garage, a club that was open from 1976–1987 in lower Manhattan, is still held up as the one to aspire to, almost a decade after his death in 1992. As such, Levan is perhaps the ultimate DJ teacher.

What did someone like Larry Levan impart to his students? Having spoken to many of them, I'd like to suggest that he taught other DJs to compose. Rather than using the word "composition," however, he spoke of "telling a story with records," something he had learned from Nicky Siano at Gallery in the mid-1970s. Telling a story with records is a particular application of what others have called "programming," that is, choosing a certain quality and sequence of recordings which, when strung together in particular ways during a night of dancing, impart a sense of extreme satisfaction to those witnessing the performance, particularly the dancers. Composing in this way means returning to the original meaning of the Latin root: to put together.

On some weekends, Larry Levan's reputation turned Paradise Garage into a DJ seminar as much as a dance club. After a period of more than ten years as a visitor to many dance clubs in New York (and, later, DJ homes), I can say that I had the good fortune of having Larry Levan as the first teacher of many. In hindsight, I believe I had some of the very best in the trade, and it is with a great deal of gratitude that I refer to them individually below.

One thing I noticed was that while these DJs, some of whom now have worldwide acclaim, deejay in very different ways, they tend to use the same turntable model, a sturdy Japanese instrument made by Technics. In 1991, the acquisition of two direct-drive Technics SL-1210 turntables marked the beginning of my DJ apprenticeship. Victor Sanchez showed me where to shop for turntables (including the right needles) without going broke, and how to set them up. From Danny Tenaglia and Kenny Carpenter I

learned how to organize my growing record collection. From observing Tony Humphries and David DePino, I learned about pacing and programming and what's involved in "peaking a floor." From Basil Thomas I learned how, during programming, to think two records ahead (or more) instead of just one. Kenny Carpenter showed me that a DJ sometimes changes his mind at the last possible moment about which record to play next. From "Little" Louie Vega, David Camacho, and Tyrone Francis I learned about seamless beatmixing, using a so-called lollipop headphone for one ear and a monitor speaker for the other. From listening to David Mancuso and Larry Levan, I learned that beatmixing was not always necessary or desirable. Silences and changes in tempo had their place in a program, too. From Larry Levan and his mentor Nicky Siano I learned that DJs can tell a story by sequencing and mixing records in certain ways. From listening and dancing to Frankie Knuckles and David Mancuso, I learned to respect and use the power of a beautiful song, referred to frequently as a "classic." From Junior Vasquez and DJ Pierre I learned about the hypnotic power of an instrumental track, often lasting more than ten minutes on record and more than fifteen in performance.[5]

From talking to Victor Simonelli, Basil Thomas, Danny Tenaglia, Joaquin "Joe" Claussell, and Danny Krivit, I learned the importance of knowing the repertoire, as well as the stylistic categories used by record company personnel, DJs, and dancers. "Knowing the repertoire" also applied to the history of dance music and to the multiple versions of a song, often released years apart, and on different record labels. From Basil Thomas, Kim Lightfoot, and Ian Friday I learned more about the connections between dance music and other categories of music, such as jazz, soul, Afro-beat, or rock; and I remembered hearing Larry Levan playing British New Wave or German electronic music such as Manuel Göttsching's "E2-E4" at Paradise Garage. Observing Larry Levan, Frankie Knuckles, and David Morales spin at Tar Babies, Sound Factory Bar, and Red Zone, respectively, taught me the pivotal importance of adjusting and fine-tuning a large sound system. From talking to Louie Vega, Victor Simonelli, and Frankie Knuckles, I learned about the connection between playing and remixing records. David Lozada and Eric Clark advised me on how to select and pack records for upcoming DJ gigs. By observing Timmy Regisford and Joe Claussell I found out how certain records can be enhanced dramatically by using a three-way crossover unit.

Watching Kenny Carpenter and André Collins work, I learned that some, but not all, DJs dance in the DJ booth. Jeffrey Allen showed me how DJs play alongside musicians when he invited me to play guitar alongside his mix in the DJ booth at Limelight one night; from Louie Vega and Roger Sanchez I learned that some DJs play other musical instruments, such as Latin percussion or the piano. Tony Humphries and Johnny

Dynell taught me about the importance of humor in deejaying, and from talking with David Mancuso, David Lozada, and Francis Grasso, I learned about the pain of losing records through theft or fire.

Frankie Knuckles told me how, during the 1970s, he had learned some deejaying fundamentals from Nicky Siano, at Gallery. At the end of the conversation, he smiled and said, "Welcome to the family!"—thereby establishing, without naming it as such, the context in which we were talking: DJ school.

Subjectively speaking, graduation day at this school is far away. I consider myself barely an upperclassman and, at least at the time of this writing, tend to treat the questions and concerns addressed above as an ongoing process. Each deejaying experience, each exposure to a new record can offer a new perspective, a partial answer to a still open question. As is true of many other musical roads, this has certainly been an exciting one to travel. To those who say that every note has been sounded, every combination has been tried, and every aesthetic musical statement has been put forth, I say, "Try composing as a DJ for a while and see if you change your mind."

Notes

1. For a detailed discussion of clubbing, see Malbon (1999).
2. Note that here I am not considering the comparatively longer history of the *radio* DJ, as detailed by Passman (1971) and Poschardt (1998).
3. The results of those efforts are published in Fikentscher (2000).
4. DJ Larry Levan was given the nickname "The Father" because he influenced so many younger acolytes who would come to his club, Paradise Garage, not to dance but to observe him at work in his DJ booth.
5. Extending the length of a record is accomplished by overlapping the playing of two copies of the same record on two turntables.

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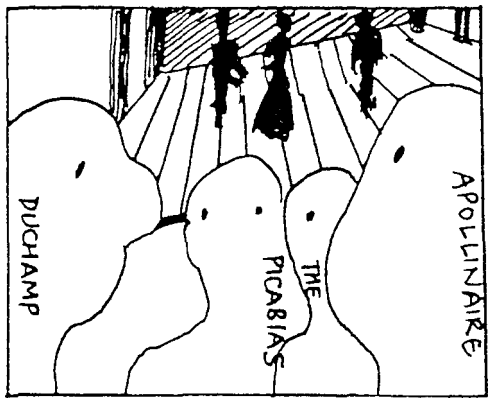
Westbam (mit Rainald Goetz). 1997. Was ist Record Art? In *Mix, Cuts & Scratches.* Berlin: Merve Verlag. Epigraph: "Record Art is, kurz gesagt, ein Komponieren neuer Stücke anhand vorhandener Platten." Author's translation.

Writing for the Gruppo Ferruccio

By Michael Finnissy

Sometime before Christmas 1999, Matthew Shlomowitz phones me to say some friends and colleagues at the University of Southern California (San Diego) will be forming an ensemble, and invites me to write a piece for their debut concert the following May. On 4 December I go to Strasbourg to give a recital with Chris Newman, and he makes me a present of a small "life in pictures" of Marcel Duchamp. One illustration particularly captures my attention, depicting Duchamp with Apollinaire and the Picabias at a performance of Raymond Roussel's *Impressions of Africa* at the Théâtre Antoine. I had bought Rayner Heppenstall's translation of Roussel's novel in 1967, the year after it was published by Calder and Boyars. Roussel's techniques of developmental montage, variously juxtaposing and revealing extraordinary, unpredictable, and often disconcerting connections between apparently unrelated words, ideas, and symbols, obviously influenced my own writing at a formative stage of its development.

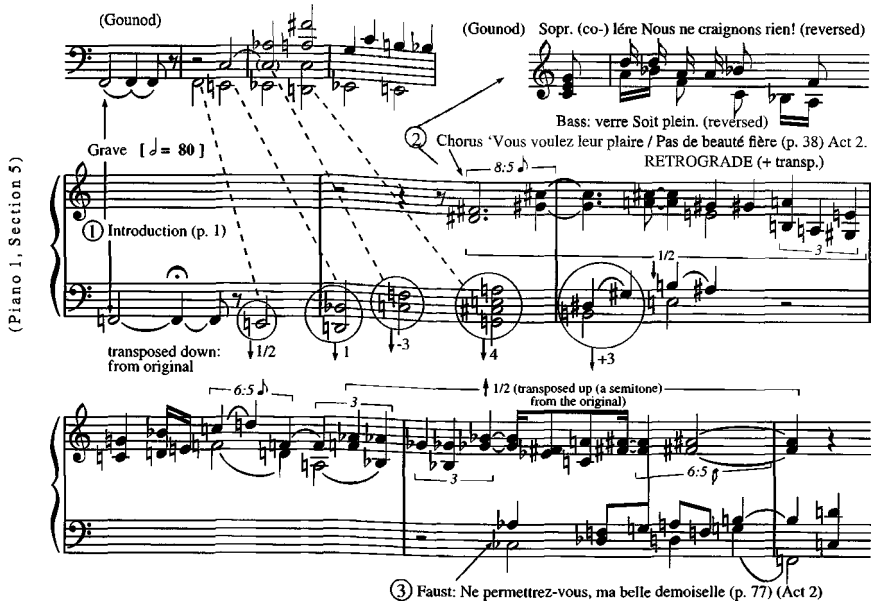
Figure 1



Early 1960s. Neither the school's Career Officer nor my family knows what "composer of serious music" means. It's not a job, even if it might be classified as a hobby, so maybe it's a "calling"—like the priesthood. They wisely recommend Teaching instead. I study hard, and am rewarded with dreadful and puzzling migraines. I also consider composition more closely and astutely: it seems to be all around me, all the time, in the street, in the classroom, on the playing field, everywhere—sound composing itself. One just needs to listen.

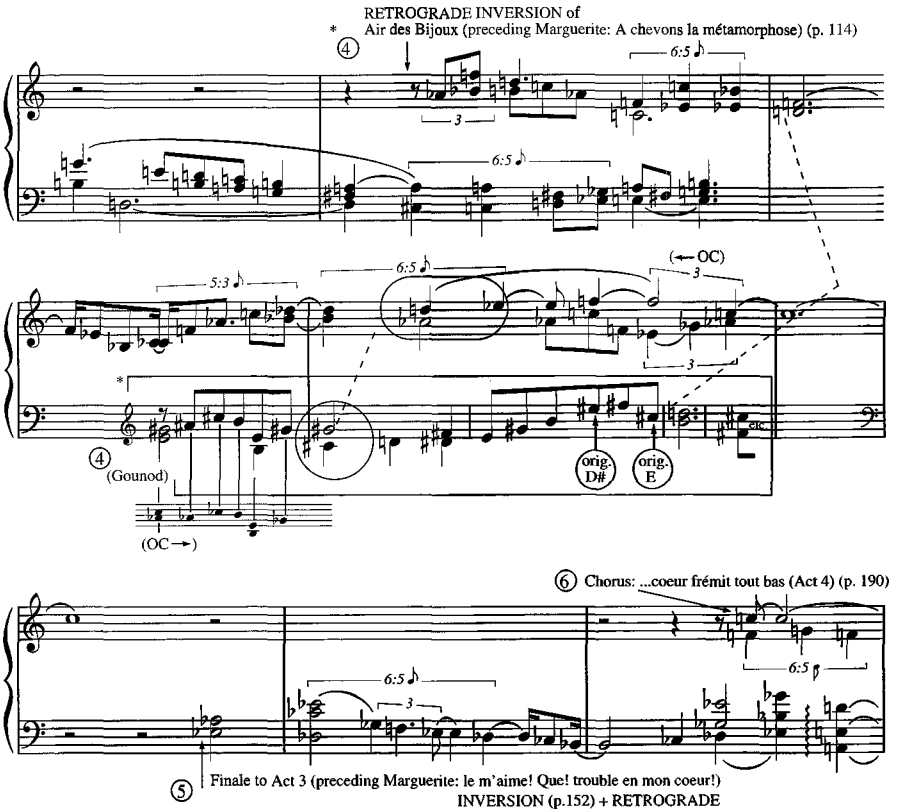
I eventually have some time to assemble ideas for this piece in late February. One of the pianos will represent the *Impressions* while the other instruments (flute, trombone, cello, a second piano, percussion) will variously stand for Duchamp, Apollinaire, Gabriele Buffet, and Francis Picabia individually responding to Roussel's drama. I've agreed to ten minutes as the duration, and set about selecting eight episodes from the novel (not the play). Eight seems like the right number. Starting from the beginning (page 9), I then move forward approximately 50 pages (to 56/57), another fifty (to 108), and so on (to 156, 207, 256, 279, and 316). Most of the episodes, by chance, involve music. Two of them mention the character Marguerite (in *Faust*). The episodes appear as spoken announcements between the (as yet unwritten) eight sections of music. I turn to Gounod's opera *Faust,* half wondering if I should limit my attentions to Marguerite's part (but I don't find sufficient interest there), or to diligently reproducing the events described by Roussel (funerals, earthworms playing the dulcimer, a 'Pas des Nymphes,' etc.) by finding "correspondences" in Gounod's opera. I eventually select eight fragments by dividing my Choudens piano score into eight, starting with the first bars, and ending with the final ones, with pages 38, 77, 114, 152, 190, and 228 in between. Each fragment lasts eight half notes. The actual "treatment" of this material takes many (frustrating) hours to get right—right in texture, tessitura, the appropriate degree of alteration and distillation (without chewing up the original to a featureless mush). A simple dialogue between the hands in which fragments overlap seems to work best. I adjust the rhythms more than the pitches. The proportion 6:5 becomes a supporting-determinant. The result eventually looks like this (see fig. 2; I have annotated the various manipulations).

Figure 2



Mid-1960s. I fail to make the grade at Teacher Training colleges. I'm not bright enough to go to university, though I win the William Yeats Hurlstone Memorial Trophy for Composition at the Croydon Music Festival, and then a foundation scholarship to continue my education at the Royal College of Music in London. My private philosophico-aesthetic musings aside, I've never pursued composition academically, though I've been writing music since I was four-and-a-bit years old. I've never heard of Palestrina or sixteenth-century counterpoint, or "species." I know about the moderns: Varèse, Satie, Cage, Webern, Stockhausen, Bussotti. I am a tricky and undisciplined student. At one of my first tutorials, Bernard Stevens asks if I come from independent means, if I have a wealthy family background. I don't. I think the winds of change are blowing in the Corridors of Power. My head is full of Socialist propaganda, the new deals and freedoms. I am outspoken (never such a good idea) and arrogant (or maybe just aggressive) but I am just another "oik." I leave college with another scholarship to study in Italy (with Roman Vlad; Nono has—unsuitably—been imprisoned for something) but with no certificates or qualifications. A veil is drawn over 1968, I am in Rome avoiding being sprayed with blue dye by the riot police, and the winds of change run out of breath.

Figure 2 (cont.)



Once this prototype is acceptable I make a "durational map" of it. As I do this I realize that I don't need the "contrasting material" I am wrestling to design. If I change the order of fragments (e.g., 3, 1, 7, 6, 2, 8, 5, 4), I can simply repeat the durations, and the pitch profile will change enough to make the repetitions interesting, even if the initial pitches remain unaltered—always beginning with a low F in the left hand, continuing with an F♯ in the right, then A♭, G♯, and so on. I try it, and like it. The durational map looks like this (see fig. 3).

Figure 2 (cont.)

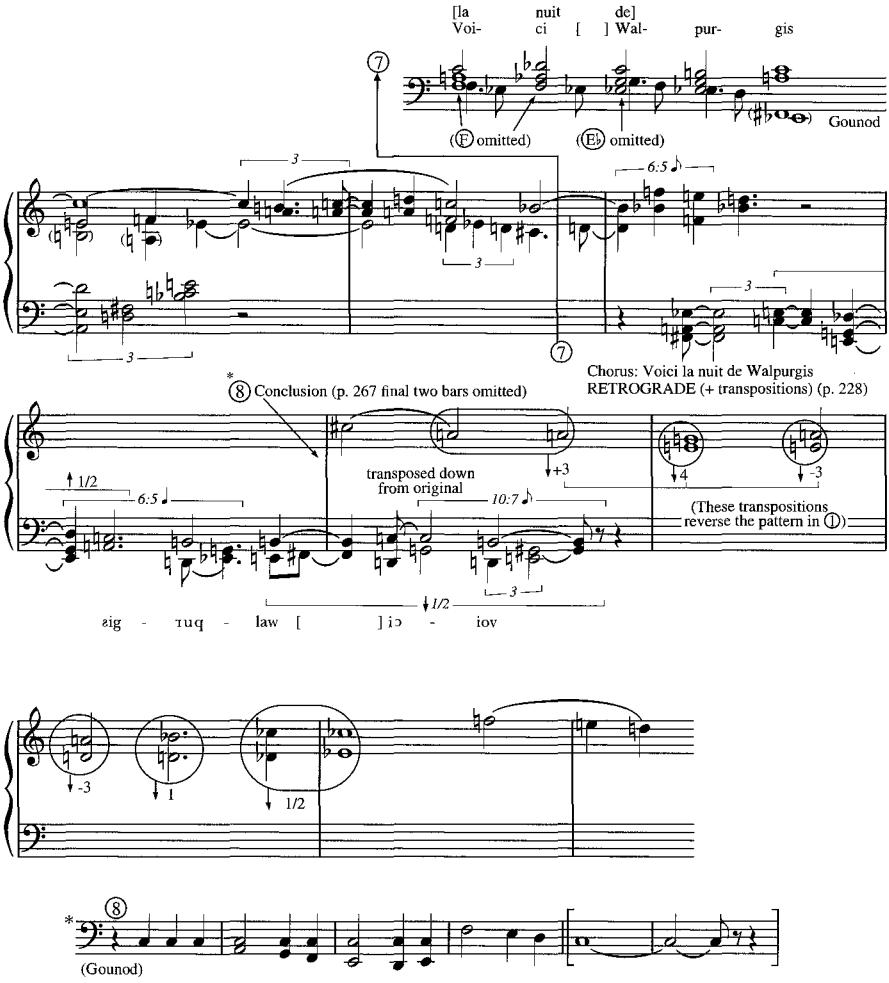
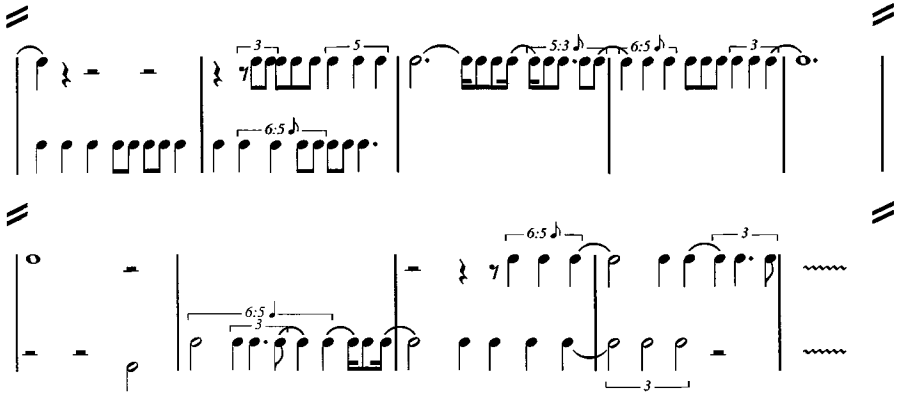


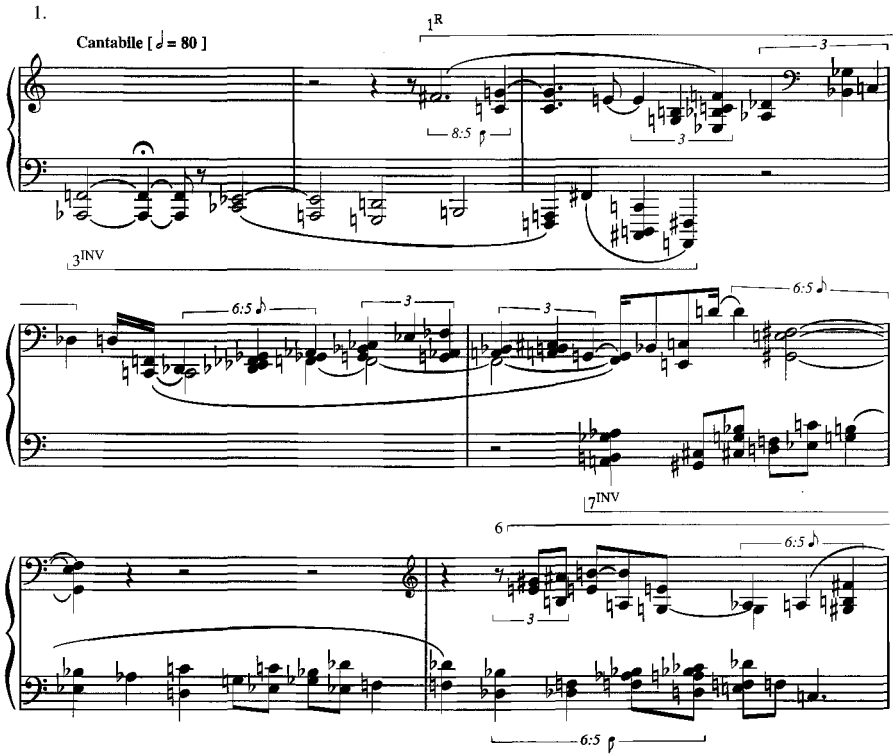
Figure 3



Early 1970s. I work as a pianist for ballet classes, and also accompany modern and jazz dance. I try my first teaching at the London School of Contemporary Dance—a sort of music appreciation associated with Nina Fonaroff's choreography classes. After five years of getting pieces played at Gaudeamus Music Weeks, Harry Halbreich (largely through the encouragement of Brian Ferneyhough) programs my work at the Royan festival, where one critic describes it—disparagingly—as "chocolate." I work in Ferneyhough's shadow, his second violin, reckoned by English specialist critics to be an inferior (bargain basement) version of a European original. I play Terry Riley's Keyboard Studies *and Stockhausen's* Plus-Minus *at the ICES Festival in London—for choreography by Richard Alston.*

The sections eventually get reordered, so that the first one does not present Gounod's relics in their original order, 1, 2, 3, 4, 5, 6, 7, 8. This prototype becomes the fifth section, and the first begins as follows:

Figure 4



Early 1980s. An old RCM friend, Richard David Hames, gets me some work—writing, coaching, advising young musicians, performing in Australia. I've just been thrown out by Universal Edition (London) and am physically sick with depression. Personal insecurity is at an all-time high. In London I have the option of continuing as a dance class pianist and occasional repetiteur.

In composing, the usual pattern of events runs: vision, notation (speculative), play-through at the piano (sometimes changing/adjusting), rewrite (developmental). Initially there are small amounts of material (one or two measures), then longer stretches (an hour to two hours' work—between four and sixteen measures, depending upon confidence). Making a kind of ceremony, or somehow ritualizing the composing-moment, is always beneficial. Trying to cram work into odd corners or spare moments is demoralizing and counterproductive. Working when tired or half asleep often releases more interesting ideas than does high-energy enthusiasm. I

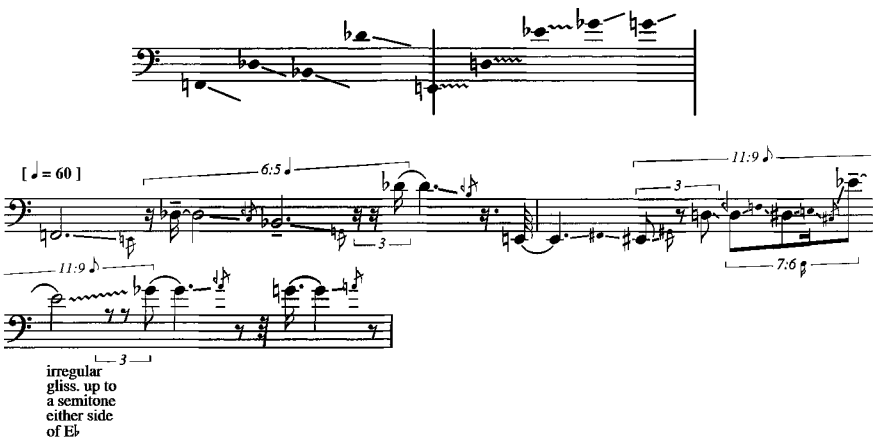
write so that I can listen; I don't try and hear in my head first (there's so much junk in there). The writing is the electric contact, the Promethean fire, the uncoverer and discoverer of sounds. I need to be blank before I start, empty and ready to fill up. "Discourse" is a more usual frame of reference than "form." Form is a verb, not a noun. Dialectical discourse is a Western European convention, and confrontational exchange with conventions forms a large part of my work. Questing and questioning.

Mid-1980s. I form a close association with the ensemble Souraan, as its pianist, then as its artistic director. Unexpected and overwhelmingly generous support comes from Phil Lesh and the Rex Foundation. I've often thought of myself as a sort of jazz musician; insightful recognition from a specialist closer to that area of expertise is immensely reassuring. I gain some prestigious commissions, but almost invariably because another composer has failed to deliver. Somewhere down the line, as second or even third choice, there is only ever a short time to write anything. I hone my skills at speed-thinking and -writing. None of this brings in enough to live on, so I also pick up bits of teaching, when senior colleagues are too busy or are otherwise engaged. Luckily, I have some spectacularly interesting and rewarding students, who on their own merits do well. The danger of this is that a reputation begins to form: as pedagogue rather than practitioner. I record Xenakis, Barraqué, Ferneyhough, Barrett, Dillon, Cardew, John White, Howard Skempton, Chris Newman, Andrew Toovey, and others for the BBC. I travel the world, promoting new, and mostly British, music. I might as well bang my head against a wall.

By 7 March I decide that, apart from the Gounod material (piano 1), everything else is *sliding*—an overall texture of quiet, narrow-ish, glissandi. The underlying pitch material consists of random permutations of 30 adjacent semitones, starting from low D on the flute, low E on the trombone, and lowest A on the piano, and equally divided between three different registers (low, middle, high). The percussionist uses water-gongs and rototoms, though I have not yet decided how. The second piano plays only *on* the strings—glissandi rubbed or scraped with glass, pottery objects, stiff wire or bristle brushes, or with hands wearing rubber gloves over no more than five strings (inclusive of the indicated pitch). Perhaps recklessly, I decide on a fairly "open" notation for these instruments—realizing how off-putting some players find "freedom" and apparent lack of specifics. I make a transcription of the opening line of the trombone part.

Early 1990s. Paul Patterson invites me to teach at the Royal Academy of Music. Had my father lived, he'd be relieved that I've finally become so much of a teacher. At the end of the decade, however, a celebrated British composer recommends that the principal of the RAM dismiss me. My heart and soul sink. The RAM decides not to dismiss me, and I gain a Professorship at the University of Southampton. I learn to look over my shoulder—for incoming knives. I miss the flair and good humor of

Figure 5



Angie Oxley, secretary for the music department at Sussex (where I've spent some years as an Honorary Research Fellow), especially when she reassures me that composers don't really belong in universities. She's right. They don't. My missionary zeal extends to serving seven years on the Executive Council of the ISCM.

I create some of the other determinants of the material through reference to numerals derived from Duchamp's *Large Glass.* The measurements of the plan for the "Bachelor Apparatus," viewed from bottom to top, are 97, 73, 25.6, 25.6, 15.4 . . . lengths in centimeters, which I arrange as a nine-sided square:

977325625
615415441
361950451
918518591
023231005
294296067
080640070
803051102
529602090

Each line of music lasts twenty seconds—divided into two equal "measures." The number of pitches on each line is taken from the square (i.e., between 0 and 9). The distribution of notes is not to be read spatially as durations (or rhythms).

2000. One year after cardiac surgery. My body is supposedly recovered. I am now doing roughly thirty hours of teaching per week, usually spread over four days, on which I travel between five and six hours on public transportation from peaceful Sussex countryside to buzzing city center, and back. I've worked for some years with COMA, an association for the musical amateur, giving encouragement but also receiving it from some of the most sensitive, intelligent, and politically engaged people I know. Through Winchester College and Thalia Myers I also work with younger people. Each year I take part in a master class in composition for schools in the vicinity of Shoreham-by-Sea, run by John Alexander and Chris Gander (Chris always has a fight to raise sufficient funds, despite the success of the venture). I have an excellent place at the Catholic University in Leuven (Belgium), teaching and composing. However, resisting disillusionment, and fending off materialism, cynicism, and a nagging sense of failure, renders life still an unpleasant struggle—with no long-term financial security, living in a country that rejoices in its virile philistinism and anti-intellectualism. We must, as Gustav Holst put it, need *to compose. But it so often seems as if no one "in the business" needs composers. There is enough music already. We resort to desperate polemical and hyperbolic self-justification, and preach mostly to the converted. At fifty-four I'm considered too old to retrain for alternative employment.*

Oblique Strategies

By Douglas Geers

01. Introduction

A few years ago I experienced an awakening regarding the contemporary music world and my own music. At the time, I was employed by the Columbia University Computer Music Center and the Columbia Music Library to transfer archival analogue concert recordings to digital media (DAT and CD). These concerts were mostly graduate student composer concerts held at Columbia and Cornell Universities from about 1956 to 1991. For approximately three months I spent several hours every day listening to these tapes as they copied, to insure the accuracy of the transfers.

As the weeks of archiving and listening continued, I was eventually overwhelmed by how few pieces stood out from the crowd, through either style or strength of their content. Eventually I started giving a silent cheer to the composers who were actually able to catch my ear and pull me in! Maybe I should not have been surprised at my frustration, since I am sure that I would have had a similar reaction if I had listened to hundreds of hours of randomly selected music composed from 1756 to 1791, for example. Nevertheless, I wondered what some young archivist of the future might think of my music, and whether or not my works would sound at all distinctive to her or him.

I came out of this experience with a strong determination to give my compositions a stronger profile, and I went about this by increasing my critical awareness of both content and form. For instance, I now pare down my music to only the ideas I absolutely need to express. When choosing my materials, my priority is that they attract and sustain interest. I also attend more discriminatingly to issues of pacing—aiming to alter or alternate musical ideas before they grow stale. In relation to pacing, I strive to convey an overall sense of trajectory in the music, though it is designed to contain surprise and unpredictability. Obviously, all of these were concerns of mine before my archiving job, but since that time I have become acutely more attentive to them.

The exact implementation of these concepts varies significantly from piece to piece, but I think that specific examples of how I composed two recent works—*Reality House* and *Ripples*—will suffice here to illustrate my current approach to composition, including methods of construction as well as issues of taste. As I proceed, I will discuss the technical aspects of these pieces and also explain some of the reasons behind my compositional

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choices. After considering the specific choices I made in these two works, I will end the essay with a broader explication of my aesthetics and interests.

02. *Reality House*

In 1998 I was fortunate to have been selected by the Columbia Composers organization to write a piece for Ensemble Fa, a French contemporary music group. They were planning a series of concerts in the United States, one of which would consist of four premieres of pieces by graduate students at Columbia University, to be performed at Miller Theatre in New York City. The performers participating in this tour included conductor Dominique My, and instrumentalists playing flute/piccolo, clarinet/bass clarinet, trombone, violin, viola, cello, and contrabass.

While preparing to write for this group, I noticed that this instrumentation was the same as that of Gérard Grisey's *Périodes* (composed 1974), from his six-work cycle *Les Éspaces Acoustiques.* I had just spent the 1997–98 academic year studying composition with Tristan Murail, who was a friend of Grisey and, like Grisey, one of the earliest practitioners of spectral composition methods.[1] With these facts in mind, I decided to use this commission as an opportunity to explore some spectral techniques. Later, after Grisey's unexpected death in November of that year, this work also became an homage to him and his music.

The work I wrote for this occasion is a sixteen-minute piece in one movement, entitled *Reality House,* named after a methadone clinic located a couple of blocks away from my apartment in Manhattan. Given the limits of the essay, I will restrict my analysis of *Reality House* to my formation of its harmonic materials and its general form.

For this composition, I decided to follow a deliberately corrupted variation of typical spectral methods: First of all, while the majority of spectral compositions base their harmonies upon variants of one, or just a few, spectra, I decided to employ several sets of source spectra. Secondly, in a nod to my enjoyment of pop music, I took all but one of my source spectra from my favorite timbral moments on the Beatles' album *Sergeant Pepper's Lonely Hearts Club Band.* I added to these one other set of spectra, taken from the title track of the punk rock band the Clash's album *London Calling.*

I used a computer to identify and extract spectral data from these source recordings, following essentially the same procedure for each of them. I will now describe this at some length with an example of a particular set of harmonies that was derived from the transition between the first two songs—the title track and "With a Little Help from My Friends"—on the *Sgt. Pepper* album. The precise moment I was interested in is the 2.1 seconds when the band sings the name "Shears," so I began by isolating it from the Beatles recording by means of audio-editing software.

Next, I transcribed the timbral content of the recording into harmonies, using the computer music applications Audiosculpt and Patchwork.[2] First, in Audiosculpt, I performed a sonogram analysis of the recording. This displayed the spectral content of the composite timbre of voices, guitars, drums, etc., as a whole (see fig. 1). (Although figure 1 cannot show this, one of the joys of the Audiosculpt program is that it allows the user to zoom in visually and see intricate details of a sound's timbre, acting in effect as a kind of timbral microscope.) The analysis showed that as the Beatles sing the word "Shears" the timbre changes significantly, evolving from the initial *sh* through the vowel sound of the *ea,* the *r,* and then the final *s.* Given the variety of timbral content there, I decided to create a series of chords from this analysis rather than just a single harmony.

To get from a single analysis to a series of chords, I first instructed Audiosculpt to divide the analysis into shorter segments of time. I decided to divide the 2.1-second sound into twenty such segments, because I knew from experience that shorter segments would be more idiosyncratic and thus probably more interesting to me. Since I wanted each segment to be a different harmony for *Reality House,* I set the software to indicate the beginning of a new segment whenever the timbral content of the analysis had changed significantly from the beginning of the current segment. In order to divide the analysis into twenty segments, I found that I needed to set Audiosculpt to indicate a new segment whenever the timbre of the analysis had changed by 22 percent or more. Thus, each chord would share about three-quarters of its frequency content with its predecessor and its successor. In addition, since Audiosculpt used frequency content to determine where to begin each new segment, the duration of the segments varied widely, from slightly over 0.01 seconds to about 0.26 seconds. Where the timbre was stable the segments were relatively long, and where the timbre was unstable there were more, shorter segments. So, in effect I set the software to seek out the most novel timbral moments of the analysis. This was fine for me because I was looking for interesting timbre, not trying to duplicate the Beatles' performance.

After Audiosculpt had found twenty such divisions in the analysis of "Shears," I saved the data for these twenty spectra and then imported them into the Patchwork program for further manipulations that were not possible in Audiosculpt. This step was necessary because the timbre of a musical texture such as a Beatles song, even merely one syllable's worth, likely contains thousands of partials, and I wanted a set of frequencies small enough to score as harmonies. Thus, my goal in Patchwork was to discover and pull out the most salient pitches from each of my twenty spectra. Once I had configured the software properly, I instructed Patchwork to discard all of the partials except for the 32 strongest in each of the twenty spectra. This allowed me to retain, in effect, a simplified

Figure 1: Sonogram analysis of 2.1-second recording of "Shears." Vertical axis is frequency, 0–12,000 Hz (reading up); horizontal axis is time (L–R).

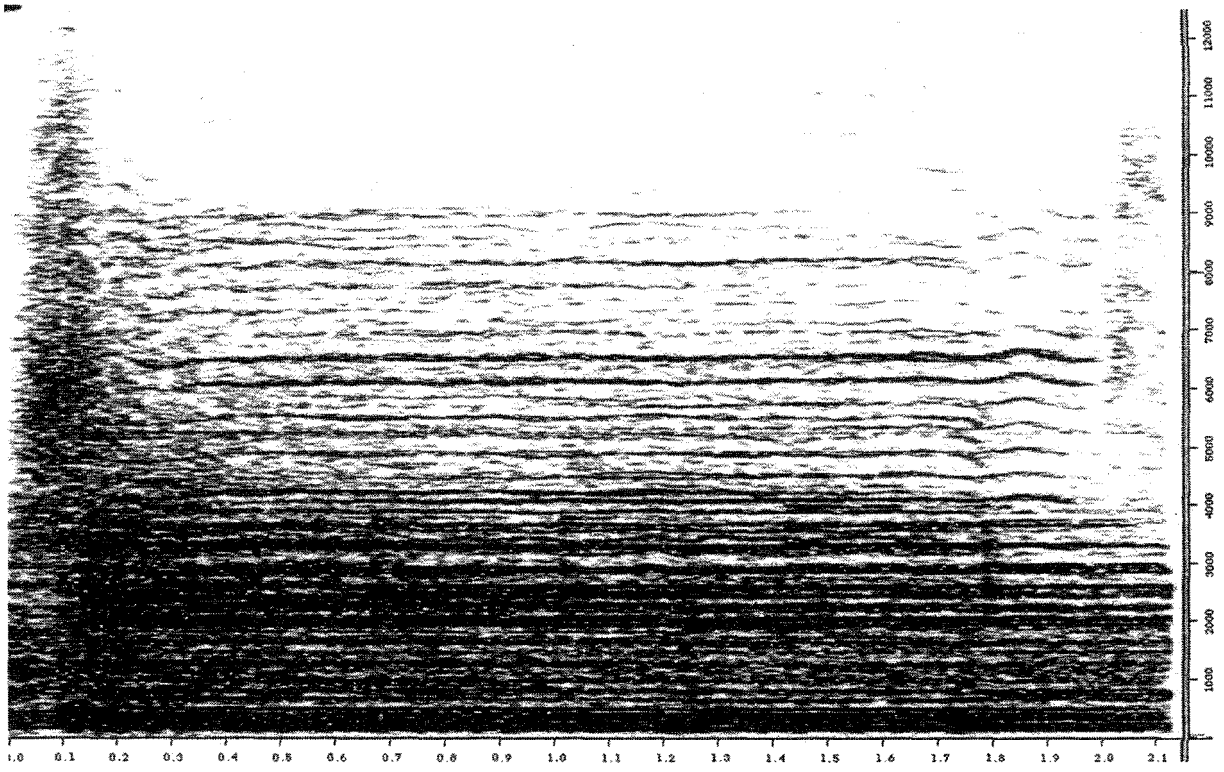
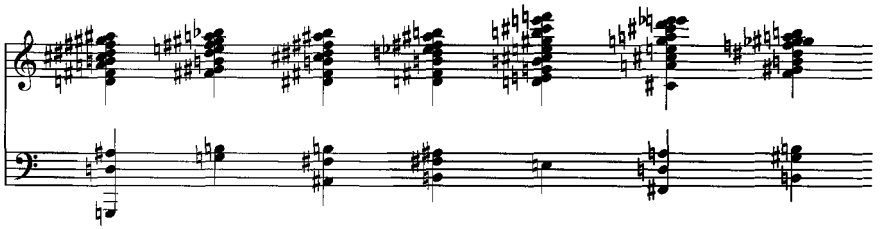


Figure 2: Seven chords derived from spectral analysis of "Shears."



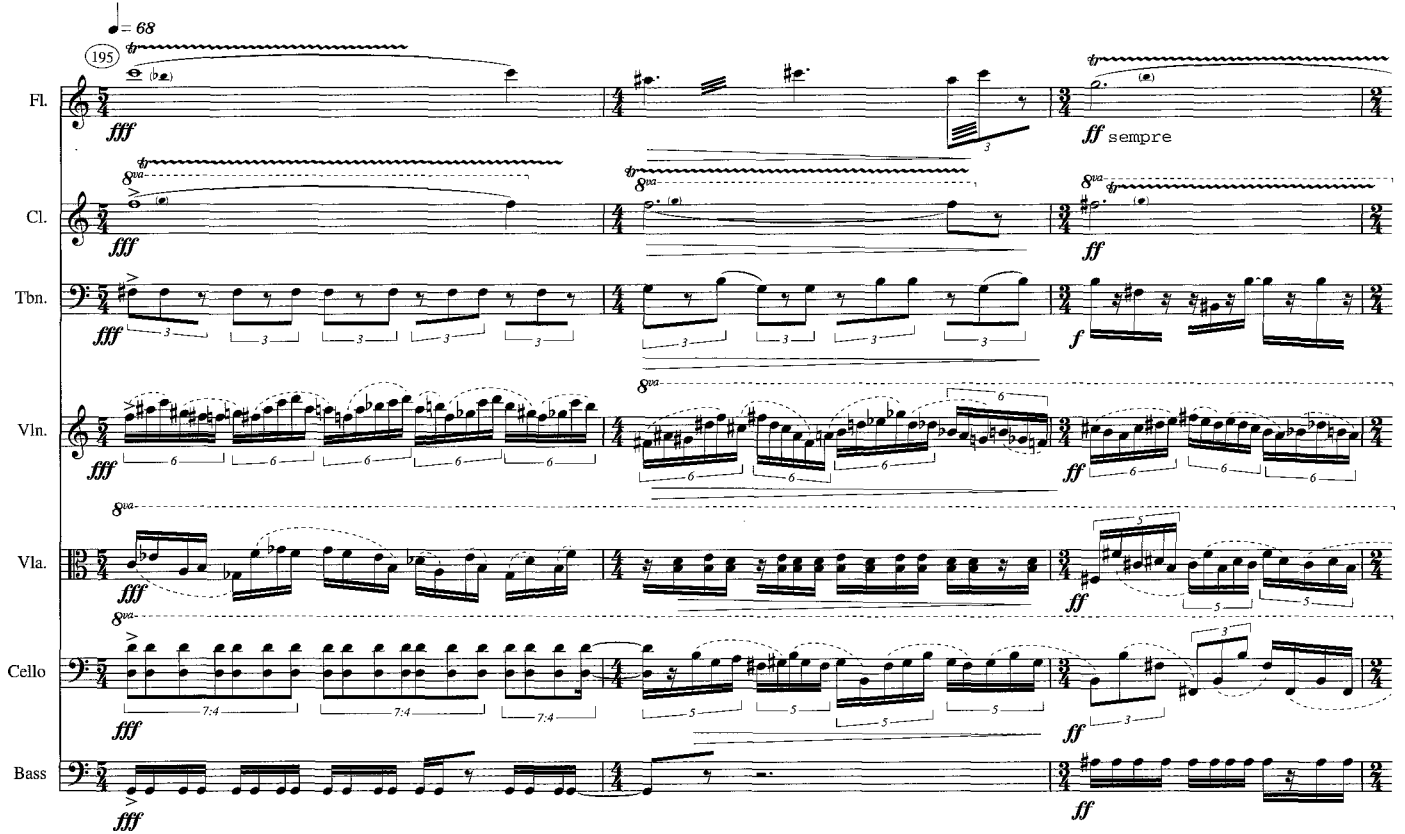
spectral outline of each segment, and these twenty 32-note pitch sets were now ready to be used as harmonies for *Reality House.*

It is worth reiterating here that these harmonies were representations of the timbre of the entire musical texture present during twenty tiny slices of time as the Beatles sang "Shears." Thus, each of the twenty chords contained a wide range of pitches, from very low to very high. Some of these were pitch-class equivalent to each other but there was no regular pattern of intervals between pitches, as in triadic harmony, for instance. In addition, quite naturally, the general pattern of intervals in the harmonies was that of wider spacing among lower pitches and tighter spacing among higher pitches, in rough congruence to the phenomenon of the overtone series (see fig. 2). Given the wide range they cover, one may also think of my "harmonies" as being non-octave-repeating scales.

Since my intention was to seek the most interesting timbral moments within the analysis of the recording of "Shears," I carefully listened repeatedly to each of the twenty chords. I found many of them uninteresting or redundant, and so I discarded those, leaving the seven chords of figure 2. I left these seven ordered as they had appeared chronologically in my analysis, but even though in the analysis they had had dramatically different durations, I now weighted them equally. Figure 3 shows an excerpt from *Reality House,* which uses this chord sequence with one harmony per measure. (Only the first three harmonies are shown in figure 3.)

As mentioned above, I followed essentially this same procedure when creating harmonic progressions from the other musical excerpts I chose to use for *Reality House.* The other sets of Beatles-based harmonic progressions came from the following locations on the *Sgt. Pepper* album: the last two beats of the first measure of the opening title track; the moment during the song "Getting Better" when a buzzing sitar note enters, just before the beginning of the last verse of the song; the first chorus of "She's Leaving Home," during the word "years"; and the second orchestral climax of "A Day in the Life." The harmonies based on the Clash tune were

Figure 3: Measures 195–97 of *Reality House,* using the first three chords from figure 2.



taken from the first beat of the song, an A-minor triad played by highly distorted guitars with accompanying drums.

While composing *Reality House,* I chose only one progression from these to use at a time. However, I played with the material freely, transposing entire progressions as I wished, running them only partially and/or backwards, and juxtaposing the progressions in whatever ways seemed most interesting to me.

For me, this method of creating harmonies for *Reality House* was quite satisfying. The use of spectral methods based on pop song spectra enabled me to create an homage to Gérard Grisey while simultaneously defying the conventions of his style and commemorating some of my favorite pop songs. Moreover, since I find the timbre of some pop music to be quite interesting, this piece became an experiment to see whether I could transfer those sound components from pop music to acoustic chamber music. The result sounded nothing like pop music, but to me it did capture some of the sonic attributes I enjoy in pop, which is what I wanted. The point for me in this endeavor was to create interesting harmonic colors for *Reality House*—not to simply imitate the Beatles—and I believe I achieved that goal.

I should add, however, that, technically, the harmonies I created for *Reality House* and the way I used them were more "spectrally inspired" than spectral. First, as I mentioned above, I used a very large set of spectra from sources that were unrelated to each other except for the fact that I found them all timbrally attractive. Secondly, for practical rehearsal/performance reasons, I decided to refrain from the use of microtones; thus, my harmonies were less precise approximations of the source spectra than the harmonies of most spectral pieces. In addition, I injected some sense of tonality into my harmonies in that I composed several sections of my piece by reusing progressions, transposed to new "tonics," based on a scheme of tonal centers derived from the succession of tonics of the songs on the *Sgt. Pepper* album. Finally, as mentioned above, I juxtaposed progressions from separate source spectra throughout the piece. I also linked progressions via common or related tonal centers rather than through the processes of spectral manipulation. Thus, I purposely chose to digress from conventional spectral composition methods in order to create my own sound and structure for *Reality House.*

With my harmonic scheme in place, I next planned the form for *Reality House.* In brief, the result is a chain of successive sections, which, like beads on a flamboyant necklace, tend to be fairly self-contained, recur in patterns, and often contrast with their immediate neighbors. The ordering of these sections in *Reality House* reflects my interest in combining overall trajectories with unexpected twists and turns. Thus, to unite the piece and imbue it with continuity, I decided that many moments would be variations on,

or recurrences of, musical ideas presented earlier. Then, to lessen regularity, I added sections of nonrecurring materials scattered among these. Moreover, the lengths of sections vary widely, and some end unexpectedly. I will now illustrate these techniques through contrasting examples.

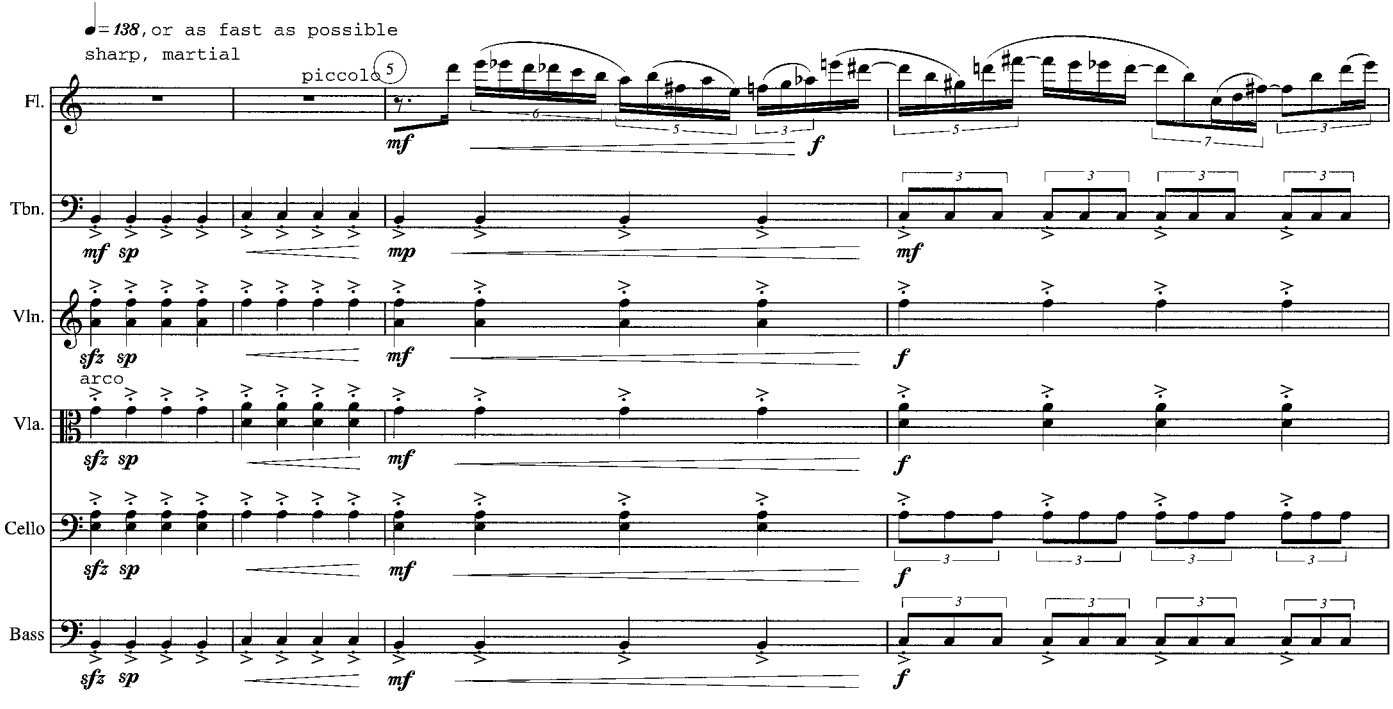
Reality House begins with a fifteen-second quick-cut montage of thematic ideas that reappear as the piece continues. One of these is a motto-theme I call "the 'London Calling' motto," which first appears in the trombone and strings, mm. 3–6 (fig. 4), and varies in length from one to four measures in its reappearances. As one might guess, this motto uses harmonies derived from the Clash song "London Calling." It also uses a signature rhythm of insistent quarter notes and triplets, also derived from "London Calling."

This motto is the most prominent of several thematic materials that recur quite clearly in the piece, and I conceived of it as constituting a "frame" around the other sections. My intention was that, just as a hiker in the mountains might regain orientation by sighting a particular peak from several points of view along the course of a day's excursion, listeners could recognize ideas such as the "London Calling" motto as they return, varied, in *Reality House.* The "London Calling" motto appears a total of six times (mm. 38–88, 155–58, 241–43, 299–300, 303, and 306–22), including its dramatic extension at the end of the piece. This particular motto gains further importance as *Reality House* continues, since it usually enters as an interruption, and is followed by different material after each of its appearances.

Other clearly recurring materials in *Reality House* include the following: the melodic theme introduced in mm. 5–6 (recurring in mm. 85–90, 211–30, and 274–79); a half-step upper-neighbor-note motion first seen in m. 7 (recurring in mm. 92–109, 126–31, 231–38, 272–73); a rhythmic pizzicato gesture in m. 8 (recurring in mm. 53–57, 280–84, and 291–94); and a short, rising melodic line first heard in mm. 23–27 (recurring in mm. 31–35, 42–45, 47–50, and 284–91). These, like the "London Calling" motto, are altered in each subsequent appearance. I believe that their referential nature helps provide continuity to the work—the "frame" idea I introduced above—while the uniqueness of both the treatment and the context of the material upon each appearance help the music express new ideas/emotional states. Since the variations of these materials are scattered through the piece, I see the result as a sort of weave-of-variations holding the piece together, while at the same time the alternation of sections of different materials creates an effect similar to the necklace analogy I made earlier.

Scattered among the recurring musical materials are several sections that are more self-contained and which feature materials that do not

Figure 4: "London Calling" motto from *Reality House,* mm. 3–6.



appear elsewhere in *Reality House,* or take materials that were peripheral earlier and treat them at length. An example of a unique section is the soft *Klangfarbenmelodie* interlude of mm. 244–59; and the technique of dramatically expanding earlier material is exemplified in mm. 263–71, 276–77, and 293–98, which are based on the harmony and glissando of mm. 1–2. Other examples are the three sections of mm. 58–84, 136–54, and 160–209, which do not share thematic materials with each other or with the rest of the piece. These sections *are* related to each other, though, in that all three are realizations of the same formal process, as I will now briefly explain.

The three sections of mm. 58–84, 136–54, and 160–209 are noteworthy from a formal point of view in that each is an iteration of a single formal process. Many of my works use processes to alter/develop material, and these sections of *Reality House* illustrate how I embed them into larger forms. The process utilized here is accumulation: each of the three sections begins with sparse, *pianissimo,* relatively low-pitched materials, and progresses into a loud, dense, heterophonic texture filling a wide pitch range. The first two instances are truncated, but the third one completes the process and achieves the most powerful climax of the entire work. (I will revisit the idea of *processes*—and how I utilize them—during my discussion of *Ripples.*)

While this explication of *Reality House* has focused rather more narrowly on issues of harmony and form, I think that it has provided some insights into my compositional methods. With these in mind, I will now move to my second analysis, which will focus on a quite different work: my electroacoustic tape-music composition *Ripples.*

03. *Ripples*

One strong influence on my music has been my use of computers for research and composition. The field of computer (electroacoustic) music is young and still evolving rapidly, and I find computer-assisted composition stimulating and exciting because the computer, more than any previous tool, allows one to develop and deploy complex algorithms to create and shape musical material. The most noteworthy ways in which I have used computers to compose are for the creation and development of materials for instrumental music, as with the harmonies of *Reality House;* for live synthesis and processing of sounds during performances; and for the studio composition of so-called "tape music,"[3] exemplified in my piece *Ripples.*

I composed *Ripples* in the spring of 1997, slightly more than a year before *Reality House.* Just as I later used *Reality House* as a pretext to explore the techniques of spectral music, during the composition of *Ripples* I pur-

posely decided to play with two ideas pioneered by composer Iannis Xenakis: stochastic algorithms and a "granular" approach to musical texture (both explained below). Freely adapting Xenakis's concepts, I decided to create and implement an algorithmic system that would produce music according to rising and falling waves of note densities. Meanwhile, quite unlike Xenakis, I decided to map these ideas to a stable major-scale pitch set, clearly pulsed rhythmic material, and a sound world highly influenced by techno music.

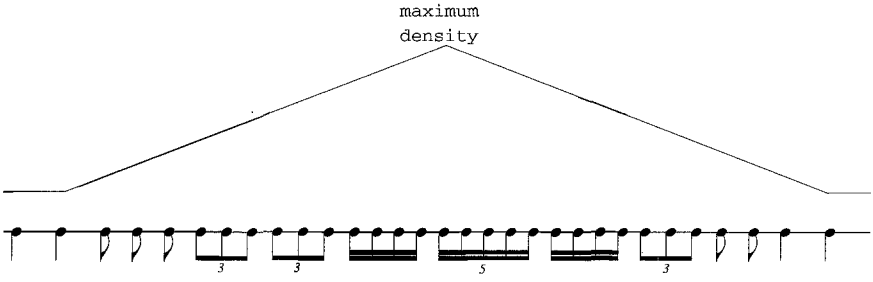
Put simply, a stochastic algorithm is a mathematical procedure that utilizes probability theory to influence its decisions. In music, this means that a composer can set up situations that require choices, and allow the computer to make these choices by following statistical distribution rules. For example, one could generate a primitive stochastic melody by instructing the computer to choose every subsequent note via the following rules: 40 percent of the time move down a step, 40 percent of the time move up a step, and 20 percent of the time repeat the same note.

For *Ripples,* I decided to use stochastics to control rising and falling densities of notes in time. From previous experience with computer music, I knew that as a regularly pulsed stream of notes gets faster (denser in time), eventually the listener's mind switches from perceiving it as a series of individual notes to hearing it as a single continuous sound. This notion intrigued me, and I decided to explore perceptions of this boundary in *Ripples.* I conceived of each rise and fall of note densities as a wave of musical energy, and determined that during the piece these would grow and diminish in their extremity; thus the title, *Ripples.* The final composition was created by connecting and layering many instances of this basic process, run with different input.

I wanted the music in *Ripples* to be pulsed and, at least initially, feel "performable." To accomplish this, I implemented the density changes by creating more, and then fewer, equal subdivisions ("tuplets") per beat, beginning with quarter notes, then eighth notes, then triplets, sixteenth notes, quintuplets, sextuplets, and so on. After the process reaches its "peak" number of tuplets, it progresses back from the highest-tuplet level to quarter notes once more. Each of these processes, from quarter notes to some *x*-tuplet to quarter notes again, would constitute one "ripple" (see fig. 5). Of course, since this was a computer and not a live performer, there was no limit to how high I could push my tuplets. If I wanted tuplets of 23 notes per beat at quarter note = 90 (and sometimes I did!), this was completely possible.

To realize this *rippling* algorithm, I wrote my own software in the computer language C, which did the necessary calculations and wrote a "score," and which I then synthesized into audio by using the RTcmix[4]

Figure 5: A simple example of the process of rising and falling note-density pattern used in *Ripples.*



computer music composition environment. Each time I ran my program, I set values such as tempo, the highest tuplet level to which I wanted the music to progress, a dynamic level for the beginning, a dynamic level to which to progress, and the amount of time to get there and back. To give the ripples more shape, I soon altered the original plan so that each "ripple" would contain two density-rises and -falls: first to the specified peak-tuplet level and back, and then to a second peak level and back again. I also added instructions for the music to move back and forth across the left–right stereo field as it played.

Rather than merely having one pulse of notes following this algorithm at a time, I devised my software to create a musical texture of sixteen musical lines, each at a different pitch level, all following the density wave simultaneously, but stochastically offset from each other. In other words, I turned my ripple instrument into a sixteen-member ensemble of "ripplers." Moreover, because part of what makes instrumental music interesting to me is the fact that an ensemble of live musicians cannot possibly play perfectly in time together, I employed stochastics so that each rippler would perform slightly differently from its peers. For instance, although technically all the ripplers begin at the same moment, I actually wrote my program so that each one would manifest small, random time offsets. In addition, I employed stochastics to individualize each of these ripplers even more, allowing each one to choose its own subset of pitches from the scale (described below), as well as a unique time within a specified distance from the "ideal" time to reach its peak tuplet level. I used similar stochastic values to determine the tuplet level to which each rippler progressed, its dynamic levels, and how often it would insert a rest rather than play a note.

I employed an E♭-major scale as my pitch-class set throughout *Ripples.* Over the course of two rising- and falling-density waves of each iteration of the ripple algorithm, each rippler chose notes from the scale four times.

First, during the acceleration towards the first peak-tuplet value, each rippler could choose only two pitch classes. Next, while slowing down from this peak to quarter notes again, each rippler was free to use all of the seven pitch classes. Then, during the rise to the second peak, each was limited to three pitch classes, and finally during the second return to quarter notes, each rippler could choose from all seven notes once more. Every time the software chose subsets of the scale, it did so entirely at random (although it performed a check to make sure that it did not choose the same pitch class more than once for each rippler at any given time). Within each segment of music, once a rippler had chosen a set of pitches to use, the software chose at random from this group. Thus, although the pitches were those of an E♭-major scale, the use of them was not designed to emphasize tonal relationships. As a result, sometimes one may perceive it as being in E♭ major, at other times as in F Dorian, or even at times as being in C Aeolian.

I mentioned above that each of the ripplers was placed at a different pitch level; I would like to explain a bit further how this was done, and the consequences of my choices. The sixteen ripplers' pitch levels were spaced at the interval of an octave, from the octave C(−3) (seven octaves below middle C) to octave C12, eight octaves above middle C. This pitch range may sound a bit crazy—and maybe it is—but it also demonstrates the joys of working with computer music, where one need not be limited to what conventional instruments can do. The lower limit of human hearing is generally between C0 and C1, and the upper limit is somewhere between C10 and G10. So my piece was constructed to go beyond these limits, and this produces interesting results, as I will now describe.

Because of the limitations of the 44,100 audio-sampling rate I used for *Ripples,* and a technicality of digital sound known as *foldover,* all pitches that were supposed to sound from around E♭10 and above are misrepresented as lower, nontempered pitches (so, no, *Ripples* will not drive dogs crazy). On the other end of the pitch continuum are notes that are too low for humans to hear, but as these notes play faster and faster tuplets and faster and faster tempos, they begin to be perceived as pitches, in relation to the rate they occur (this happens at about 16–20 beats per second). For instance, if a pitch of eight Hertz (approximately C(−1)) played as sixteenth notes at a rate of quarter note = 480—which is entirely possible with the *Ripples* software—then a listener would hear a pitch of 32 Hz, which is very near C1. While I do not have the space to discuss these effects in more detail, it suffices to reiterate that they added interesting, relatively unpredictable pitch and timbral information to the music of *Ripples.*

Beyond this, let me mention two other ways that I composed the timbre of *Ripples.* First, early in the process of composition I produced a timbre for RTcmix to use when synthesizing notes for *Ripples.* This timbre consists of a

single frequency spectrum and amplitude envelope shape, both created by me through intuitive experimentation. Although one may not guess it when listening to *Ripples,* every note in the piece employs this timbre.

My use of the same timbral shape for all of the notes in *Ripples* might seem simplistic at first, but I knew that this would not be a problem because of the second additional way that I composed timbre in the piece. This method is directly linked to the "ripple" process that pervades the piece, and operates as follows: While *Ripples* begins with clear successions of notes, as the music proceeds the basic ripple process repeats and moves to more extreme realizations—faster and faster tempos. As the density of notes increases, eventually the sense of successive notes, each with its own timbre, dissolves into the perception of a single, complex, evolving timbre, now the "line" of the music. In fact, the tempo of *Ripples* eventually rises to a maximum level of quarter note = 720, so that even when each of the ripplers is only playing quarter notes it is already performing twelve notes per second!

Music such as this, in which thousands of very brief individual notes are combined linearly to form large-scale audio events, is known as "granular synthesis." A simple analogy is that in granular synthesis each note has a role similar to that of each grain of sand on a beach: it is an individual, but also a tiny element of a much larger structure. The concept of granular sound was first employed in composition by Iannis Xenakis, and was used by many computer music composers during the last quarter of the twentieth century. My interest in *Ripples* was, in effect, to build a piece around the concept of granularity, allowing the music itself to trace a path from distinct single notes toward an increasingly granular manifestation and back again.

The basic shape of *Ripples* as a whole is the same wave of increasing and decreasing density realized in each individual ripple. As such, the essential slow–fast–slow pattern is easy to discern at the end of the work, and the musical development within seems generally smooth and organic. However, while the finished piece seems to flow quite naturally, it is actually the fruit of an involved compositional process.

To create the final composition, I developed my *Ripples* software until it gave me musical output that I found intriguing and satisfying. Then I ran the program time and time again, repeatedly altering the settings of the initial values. The most significant settings that I altered were the tempo and peak-tuplet levels for each ripple; the piece employs materials at tempos ranging from quarter note = 20 to quarter note = 720. Each time I ran the program the software realized music within the parameters I had set, using stochastically weighted randomization so that no two runs of the program, even with the same settings, were exactly the same. I listened to

these segments of music carefully and adjusted my program settings repeatedly, fine-tuning the settings to move the results closer and closer to what I had in mind, until I found just what I wanted, or—sometimes—something even better.

Eventually I was able to create a large number of musical segments embodying a wide range of realizations of the *Ripples* algorithm, and chose from among them only those I found most successful. I then ordered the chosen segments, edited them, and layered them into a composite mix, according to my overall formal plan. I arranged the connections between them so that in the final piece not all of the sections manifest the entire rising-and-falling density pattern. In fact, most often the connections between sections are quite blurred, and a new iteration of the algorithm, at a new tempo, begins before the previous one has ended. Moreover, as in *Reality House,* sometimes processes are unexpectedly truncated, such as in the abrupt transition back to the opening material at 5′35″ into *Ripples.* Finally, I processed each segment with several kinds of audio-signal-processing software (reverberation, flanging, etc.) to create more subtle timbral variations among sections of the piece.

As the preceding paragraphs illustrate, my creation of the *Ripples* software was clearly part of the act of composition, since the design of the program implemented elements of the work's form, its rhythmic and melodic/harmonic material, tempo, number of voices, and the relation of these voices to one another. However, it is also important to note that even though on one level the composition is intensely algorithmic, I exercised "rigorously intuitive" discrimination regarding which materials to choose and how to deploy them in the final composition. Among other things, I chose the tempo settings for each section, the peak-tuplet values, the dynamic levels and their changes, the ordering of the sections, how the sections would join one another, when they would overlap and how much so, and how much of the entire sparse–dense–sparse process each segment would manifest in the finished piece.

Another aspect of *Ripples* worth mentioning is the harmonic structure. Essentially, the harmony in *Ripples* is static, employing a single set of seven pitch classes, those of the E♭-major scale, throughout (although, as I mentioned earlier, factors such as foldover add unexpected pitches). I composed *Ripples* this way for both practical and aesthetic reasons. First, my software had no mechanism to automatically change the pitch collection. To add planned harmonic changes to the piece would have required that I spend significantly more time programming the software or that I run it separately for each harmony, which would have greatly increased the time needed to realize the piece, and would have disrupted the continuity of the musical processes. However, a further reason for the static harmony

relates to my own interest in musical styles that have little or no harmonic motion, including minimalist pieces and Indian classical music. Since the concept explored in *Ripples* is the rhythmic/timbral progression, I felt that complex harmonic relations were not necessary and that the relatively stationary harmony was satisfying.

04. Discussion

I hope that I have been able to give some insight into my compositional ideas and procedures with these brief analyses of *Reality House* and *Ripples.* I believe that each of these pieces depicts characteristic ways that I think about and write music, highlighting some of the materials and techniques that I have used repeatedly in my compositions. Together, these elements give a reasonable overview of my style, and I think it is worthwhile to summarize them, with references to some examples in the pieces, before moving forward. These stylistic elements include: the use of processes to develop material, such as the densification of textures throughout *Ripples* and in mm. 160–209 of *Reality House;* tempering the predictability of musical processes by means of elision and truncation of sections, seen both in *Ripples* (at 5′35″) and in *Reality House* (mm. 85, 155, and 211); providing a sense of tonality via assertion rather than functional harmonic progressions, as heard throughout most of *Ripples* and, for example, during mm. 39–50 of *Reality House;* prominent use of a recognizable pulse and, at times, regular meter, as in most of *Ripples* and in mm. 306–19 of *Reality House;* an interest in timbre, seen in the granular sounds in *Ripples* and in the use of spectral harmonies in *Reality House;* and the incorporation of materials from—and references to—popular music, seen, for instance, in the pulsed, synthesized sound of *Ripples* and in the "London Calling" motto of *Reality House* (mm. 3–6). Having established some notions of how my music works and what it sounds like, I would like to continue by going further "behind the music," concluding my essay with a short discussion of the personal background, beliefs, and attitudes that guide my compositional choices.

Among their other similarities, both *Reality House* and *Ripples* highlight my use of the computer as a compositional tool, which, though not a stylistic attribute itself, clearly has affected the ways that I conceive of and create music. Tremendous innovations arose in music-related technologies during the twentieth century, including music recording, mass production of recordings, broadcast radio and television, electronic musical instruments, and computer-based instruments and tools. I believe that this technological revolution will prove to be more important to the future of music than any theoretical or stylistic innovations that happened within the Western art-music tradition during those years, and although the computer is one of the more recent of these inventions, I think it will prove to

be the most revolutionary of them. The computer gives composers and performers a wide range of powerful abilities to plan, structure, record, edit, and disseminate their music. For composers, it allows us to develop and deploy sophisticated algorithms to create and control both compositional materials and the sound of the music itself with unprecedented precision. To me, these computer tools and instruments represent the most exciting avenues for shaping a distinctive musical fingerprint, and, as a result, nearly all of my composition today involves them in some way.

Another point of comparison between *Reality House* and *Ripples* is (1) the fact that I employed musical materials from jazz and pop music in both of them, and (2) the manner in which I did so in each piece. In *Reality House,* this includes Beatles- and Clash-derived harmonies, one instance of Clash-derived rhythms, and—though not discussed earlier—a conception of melody inspired by the saxophone solos of John Coltrane and the playing of other jazz artists. In *Ripples,* my choice of a major scale, the timbre of the voices, and the pulse were inspired by electronic dance music. Though it may not seem especially noteworthy on the surface, the use of these materials is significant to me.

Essentially, pop music—seen in broad terms, from the musical-theater songs of Rodgers and Hammerstein to the folk of Bob Dylan to the rock of U2—was the only genre of music I knew well during my childhood and youth. When I went to college I discovered the traditions of classical music and "serious" jazz, essentially simultaneously. Both interested me, though at the time I intuitively felt that jazz was more closely related to pop, possibly because of the instrumentation, rhythms, song forms, and specific tunes that it shared with pop music. During this time of discovery, jazz and classical music seemed equally valuable to me, and they still seem so today. (And although I have just described my introduction to "serious" jazz as something apart from pop music, within the remainder of this article I will include all jazz, together with the vernacular styles mentioned above, under the term "pop," to simplify the terms of this discussion.)

As a result of my background, I still feel somewhat like an "immigrant," even after years of being involved with the contemporary classical music scene, a milieu that I think is excessively biased towards the European modernist tradition. On the other hand, I know that over the years I have definitely found music and ideas that I love in this "new world." I sense that now I am some kind of dual citizen, with one foot in the pop world and one in the modernist world, trying to reconcile my conflicting thoughts and decide what is most honestly me. I also realize that it is possible to work in these styles simultaneously and be successful in both.

Nevertheless, each piece I write addresses this conflict in some way, and I try to retain some musical materials of my "origin" in all of my works. My compositional process always includes a choice of where to strike the

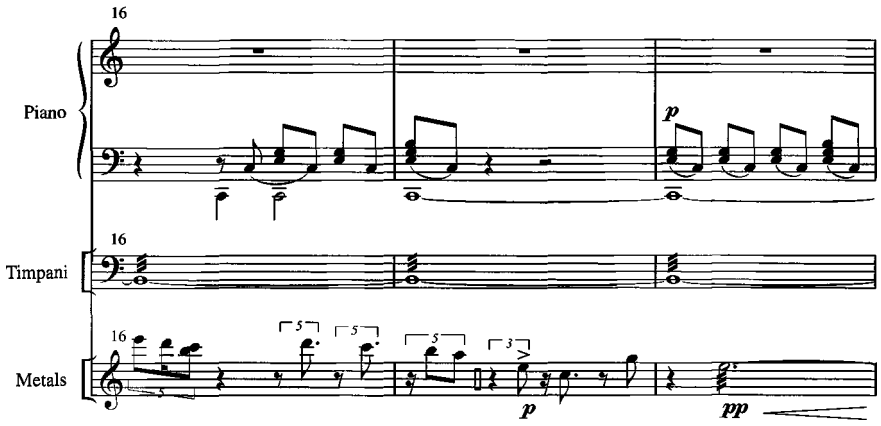
balance: what pop materials to use, and how—including how overtly—to present them. Sometimes my use of them is rather abstract, as in the case of my creation of the harmonies for *Reality House* from recordings of the Beatles and the Clash. Other times it is quite overt, such as the "London Calling" motto, which appears six times in *Reality House,* or the references to John Lennon's song "Imagine," which arise at the end of my work *Carol's Cliff,* for piano and two percussionists (see fig. 6).[5]

Beyond my mere enjoyment of them, another issue to mention regarding my use of style traits from pop is its sociopolitical aspect. To me, the deployment of these materials is a way of overtly stating that I value these styles and that they—and the people who practice them—are legitimate and worthy of attention. On a very personal level, I use these musical references to demonstrate to my friends and family that I have not "lost touch" with them, to show them that I still value things (in this case, music) that they value and, through this, that I still value having them as part of my life. On a more philosophical level, I believe that categories such as "serious" or "art" music vs. "pop" or "commercial" music are too simplistic, and I enjoy crossing these artificial boundaries. To me, both of these reasons are political statements, attempts to mitigate any tendencies in myself towards a limiting or elitist attitude. This consideration of the political messages in my work reflects my basic wish as a composer to communicate to audiences with a distinctive artistic voice, and I would like to end this essay with some comments on this topic.

To me, communication in composition involves several things: the extramusical ideas that inspire a work, the materials I choose to express these ideas, and consideration of who my intended audience is for each work. In the case of *Reality House,* for example, my extramusical inspirations included my interest in exploring spectral techniques, my love of the Beatles and the Clash, and—as evident in the work's title—my awareness that as I composed this chamber music the Reality House methadone clinic was just a few blocks from my door. The materials for *Reality House* flowed quite clearly from the first two inspirations; and though I cannot quantify this, I believe that they arose from my contemplation of the latter, as well. The intended audience for *Reality House* was any person or group interested in contemporary music, including—as always—myself.

These, to me, comprise the circuit of communication that composers should work within, with presentation to an audience and feedback from its members as the final steps. When a composer presents new work to a particular audience, s/he should contribute to that community by informing, provoking thought, and providing entertainment. Thus, it is completely natural that a composer might adjust his or her compositional materials and techniques to some degree when writing for different listening occasions and/or communities of listeners—when composing for chil-

Figure 6: References to John Lennon's song "Imagine" during section six of *Carol's Cliff.*



dren, for instance. I see it as an exciting challenge to work within different sets of limitations for different pieces, while all the time retaining characteristic traits that make my music sound like "me."

Beyond purely musical concerns, I have also pursued notions of communication in my compositions by means of my choices of performance venues and media. I find it stimulating and refreshing for both composer and audience to move outside of traditional concert halls and modes of performance, and have presented my works in coffeehouses, theater settings, as parts of gallery installations, outdoors, and on the Internet, among other places. I also believe that combining music with visual and verbal arts can create fresh, powerful expressions when done effectively, and thus for several years I have pursued multimedia collaborations with poets, choreographers, actors, filmmakers, video artists, and sculptors. At times, these works include live interaction of musicians with computer-controlled art, achieving a fairly new kind of performance communication in which, for instance, the musician can stimulate and react to sounds, sculptures, and video as s/he performs.[6]

Finally, casting aside all of the issues presented above, let me try to summarize my approach to composing in a few final sentences: I write music because of a personal desire to express intellectual and emotional ideas and conflicts that I find significant, combined with a basic interest in the act of construction/creation. My goal as a composer is to take ideas and materials from whatever musics interest me and combine these in effective, interesting ways. From South Indian Karnatak music to John Coltrane to György Ligeti to Björk, I believe that nothing should be out of bounds for potential musical inspiration. Ideally, I want to set up auditory experiences that will lead listeners somewhere new, interesting, and—though

essentially abstract—somehow meaningful. Whether writing a pop song or a concerto, I strive for each of my compositions to possess a clear, intriguing surface that novices to that style will appreciate, while simultaneously providing details for aficionados to recognize and enjoy. Of course I don't know how successful I am most of the time, but for me the intrigue, the joy of my endeavor, is in the experimental nature of it all. My compositions are artifacts of my search to identify who I am and what I think of this world. As such, they exhibit a multitude of traits, and are not entirely consistent in style and intention. In the end, I can only hope that they contain ideas that audiences can discern, listen to with interest, and find within some kernels of value that they can relate to their own lives.

Notes

1. Simply put, spectral music refers to compositions that derive their harmonic material (and possibly rhythmic, melodic, and other structural/formal material) from analyses of the partials present in existing sounds. Spectral composers choose one or more spectra from the analysis, determine the most salient frequencies in these spectra, and use them to create their musical materials, such as the pitch content for their harmonies. Part of the intent of spectral composition is to blur the distinction between harmony and timbre, and thus most spectral composers employ microtonal intervals to more accurately approximate the frequencies of the original spectrum in their harmonies.

Spectral composers often perform mathematical manipulations on the partials of the original spectrum to generate harmonic development, using techniques such as ring modulation and frequency modulation to create a series of additional spectra related to the original, but with alterations to the strengths and frequencies of the original partials. The source sounds for spectral works have ranged from individual notes of solo instruments—as in Grisey's seminal work *Partiels,* based upon the analysis of a note played by a viola—to natural sounds, such as those used in Murail's *Le Partage des Eaux,* based on analyses of recordings of waves at the seashore; and some composers have analyzed bits of their own compositions (e.g., Joshua Fineberg's *Empreintes*).

2. Distributed by IRCAM (Institut de Recherche et Coordination Acoustique/Musique). www.ircam.fr

3. The term "tape" is now technologically outdated since these pieces are produced most often as CDs or digital soundfiles such as WAV, AIFF, or MP3. Please see http://music.columbia.edu/~geersde/cm for an MP3 recording of this piece and other related materials.

4. http://music.columbia.edu/cmix/

5. For an MP3 recording and full score, please see http://music.columbia.edu/~geersde/cm

6. For examples of my most recent works, please see http://music.columbia.edu/~geersde

About My Fourth Symphony

By Lou Harrison

It is a pleasure to be asked to contribute to *Current Musicology.* In years past I wrote with fair frequency of musical matters, but seldom about my own work. My Fourth Symphony, originally called *Last Symphony,* is not a piece that "itches" me anymore, so I regard it as fully complete and am happy to write about it. The work was several times revised, and lastly, the order of movements changed, so that I will now leave it as it stands. Dennis Russell Davies, to whom it is dedicated, conducted the work, and indeed scheduled other performances in which we tried out new revisions. He has done this a number of times, and I reflect that few composers enjoy the active help and trust that this wonderful artist has extended to me. It was commissioned by the Brooklyn Philharmonic and the Brooklyn Academy of Music, and indeed was first played by the Brooklyn Philharmonic. The work is well recorded by Barry Jekowsky with the California Symphony.

The piece is in four movements, the last of which includes three Coyote Stories, sung, as a finale. A number of musical traits occur from movement to movement which embody my knowledge of Javanese music. My methods in this symphony are almost half and half, European and Javanese, although the ensemble is instrumentally European. Perhaps it is best right here to explain my relationship to Javanese music. I have had the pleasure of studying this music with K. R. T. Wasitodiningrat, who is known everywhere as Pak Cokro (pronounced "Chokro"), with Jody Diamond, founder of the American Gamelan Institute, and with Dan Schmidt, among other fine artists.

This has extended over a period of about a quarter of a century and remains one of my chief musical joys. I play adequately most of the instruments of a Javanese gamelan, and continue to enjoy teaching gamelan, at least at the beginner's level. I have composed directly for Javanese gamelan, and added Western instrumental soloists, vocalists, and chorus as well. I began to write for gamelan at the specific suggestions of Pak Cokro himself, and was surprised by his invitation because until then I had assumed that these ravishing orchestras were only used in universities for the study of Javanese classics. Almost at once my life partner William Colvig and I began to build various forms of American-built gamelan, and he went on to create Si Betty and the Mills Gamelan. In the latter, the *sléndro* section is titled Si Darius and the *pélog* section Si Madelaine—after Darius Milhaud and his wife, and with their permission. The "Si" in the titles is a Javanese

word meaning "the Honorable." Both these gamelan have been recorded —in my *Double Concerto for Violin, 'Cello and Javanese Gamelan,* and in a CD of my gamelan pieces issued by Music Masters.

Fairly early on in these studies I realized that some of the common methods used in Javanese music could easily be applicable to Western compositional use, even to Western chromatic styles. The first movement of my Fourth Symphony is one such.

Movement One

This movement is an intervallic one, in which the main melody uses only the major second, the minor third, and the minor sixth in its progress. No others are used. The movement opens with a preludizing solo on the celesta, which introduces the intervals melodically. "Interval control" is a method that I invented in the thirties of the last century as a way of making sense out of the chaotic nature of equal temperament, and was founded on the notion that in European classical and popular music the melodies moved mostly by seconds, the harmonics were made of thirds, and the root movements were fourths or fifths. In a fully chromatic texture, the act of limiting the intervals of even a main melody, alone, brings a welcome sense of order. Needless to say, the method works well in temperaments that are superior to equal. I also use interval controls in the third movement of the Symphony. But in this first movement I avail myself of a number of Javanese methods of elaboration. It will be noticed that when the oboe enters and plays along with the celesta, the celesta sets about "walking" the melody (called *mipil* in Javanese). It will also be noticed that each pair of tones in the melody is "rocked" so that the doubling actually helps to define the trunk tune by its anticipation and repetition, and by coming together with it. This principle—moving always toward a goal tone—is fundamental to Javanese procedure, and is used here throughout the movement, in either simple or complex form. With the entrance of the celli playing the main melody (*balungan* in Javanese), an accelerando begins, which ends when the brass begin intoning the balungan at half the original speed. Here the mipil doubles and extends. We are now in "irama two"—*irama* denoting both speed and treatment of the balungan. At m. 48 begins an ornamental melody that reminds me of what the *rebab* might play, and at m. 66 all of this is adorned with patterns *(cenkog)* running rapidly in the harp, vibes, piano, and celesta—also going to goal tones. During these developments the position of the great gongs is imitated either in the low strings or in the low brass. With neither deceleration nor acceleration, the final ten-bar balungan is heard in irama one and it repeats in varied treatments until the end of the movement.

Movement Two

In the notes at the beginning of the score there is the following: "My life companion William Colvig had a major operation while I was composing this symphony. He was despondent and needed energy and encouragement, thus the second movement was offered to him." This is titled *Stampede,* the English cognate of *estampie,* both meaning a noisy brouhaha. It is a modal piece, involving two six-tone modes that share the same upper tetrachord, but differ in the lower. By switching in various ways between the two modes I made a larger shape of tonal interests. In form it has the normal seven strophes. Each strophe contains a phrase followed by a half cadence, then a repeat of the phrase followed by a full cadence. In the fifth strophe, if the movement is a large one, I allow myself to ease the forward rush by using a softer and more lyric style. In the last two strophes the stampede revs up toward its finale. In the quiet fifth strophe the two cadences are still there, but highly attenuated and abstracted. I have used six-tone modes many times in my compositions, and I find them fascinating. They almost always carry with them the mood and style of the parent pentatonic. In an ascent or descent of eighth notes in a three meter, each octave will be the same.

Movement Three

This movement is not tonally centered, although it contains two passages that lead one to believe that a complex tonality is being resolved. Here again I use interval control. The permitted melodic movements are by the minor second, the minor third, and the perfect fifth. I had always wanted to write a "noble" passage for the French horn, and so the opening of this movement essays one. The passage recurs near the end of the movement in a deepened form. I attempted to move as many of the voices as possible by the three permitted melodic intervals, thus finding "organic complexes" among their progressions. The overall mood of this movement is of tense but resigned pessimism. It harkens back to Tchaikovsky in at least two places. At the premiere my guest Ned Rorem thought that it was the most beautiful music he had ever heard. John Cage found the whole symphony to be "very American."

Movement Four

In three of my four symphonies I have written a little suite in the position of the scherzo. I arrived at this notion (and pleasure) through the observation that the scherzo movement of the classical symphony consists of a scherzo and trio, with a repeat of the scherzo. At least two small pieces are thus engaged—why not, then, make three or four small pieces? Thus,

in my First, Third, and Fourth Symphonies I have made little suites, which serve the relief and variety functions of a scherzo. In this symphony, I have placed my "Three Coyote Stories" last, because the soloist then has a natural chance to acknowledge his reception, and also because I want these three stories remembered for their content. In the first, we learn that there are at least three colors of people—in short, that there are other kinds of people; in the second, we learn that there are other ways of loving; and in the last, we are reminded that the Earth belongs "to the children yet to come." The text for the second of these stories was written for this work by Daniel Harry Steward, a gifted American Indian living in Seattle. The other two are anonymous legends.

The fourth movement is entirely modal, based on a common pentatonic scale. A number of years ago, William Colvig and I commissioned a gamelan from Pak Daliyo in Java. It was, at our request, made of iron and is of good quality. It is a *sléndro* gamelan, meaning that the seconds are large and the thirds are small, relatively speaking. One year, an Episcopal church in a neighboring village asked for a gamelan concert, and I asked the minister whether there was some text for the day of the concert, which I might celebrate and/or set. He said no—it was a workaday religious period. Thus, since my friend Daniel Kelly was presenting a shadow show on an American Indian subject, I decided to set four Coyote stories. My procedure borrowed the structure of Gregorian chant—I mean the kind applicable to various texts—and I wrote the words with pitches notated by black notes without stems. The singer was to use the speech rhythm of his storytelling. These pitches provided the singer with a tone for each syllable and the sentence-ending cadence formulae. I then created, for a few instruments of the orchestra, a background mode-wash, so that the singer would not be at a loss in locating or finding such specific pitches as he needed. (This worked, and some of the four original stories have been produced in magnificent style by Larry Reed, as a shadow show for the Huddersfield Festival in England, and near San Francisco too.) I saved two of the original stories and commissioned Daniel Harry Steward to write another text, and the three of them together became the final movement of my Fourth Symphony. The instrumental music is a direct transcription of the gamelan piece that I had written to frame these stories. And I mean that I actually went to our gamelan and took down the tones of the *ketuk,* the *kempuls,* the *kenong,* and so on, and transcribed these tones into a symphonic context. The *imbals* that were used in the original gamelan-playing are transcribed for the violins without the "exchanges" that occur in the gamelan—they would have been too difficult for Western players to execute. In any event, they sound fairly good in such transcription. The form is a *ketawang* in both iramas one and two, and might be classified in Java as being in sléndro *patet nem.*

hoc est corpus meum

By Julie Harting

My first exposure to music was from my father, a tuba player in the Lancaster, Pennsylvania, and Reading, Pennsylvania, Orchestras. He had a fairly large record collection of symphonic works. Every Sunday morning before church, while I was stretched out on the living room floor reading the Sunday comics, he would play one of his records. He favored symphonic work that used a lot of loud, lower brass—Rimsky-Korsakov's *Russian Easter* and *Scheherazade,* and Tchaikovsky's *Pathétique.* He also liked the symphonic works of Brahms and Beethoven. A special favorite was Brahms's *German Requiem.*

We had a variety of instruments in our house. My father had a tuba, a string bass, and a violin. One summer my older sister took piano lessons and we rented a piano for a few months; my brother had acoustic and electric guitars. I fooled around on all of these instruments, but my *instrument* was the tuba since our school district didn't have an orchestra or string program. I played in high school and local concert bands, stage band, dance band, pep band, a Dixieland band, a Pennsylvania Dutch folk band, and local community-college orchestras.

When I was eighteen I found myself working at the American Tourister Luggage factory in Warren, Rhode Island, as a foot-press operator, smashing metal attachments onto pockets that were to be attached to the side of the luggage. It was while working there that I decided to study music seriously, so I went to Boston, where I attended a summer session at Berklee College of Music.

Although Berklee is known as a jazz school, I was there "on a fluke." I was not a "jazzer," but a "legit" tuba player. I still remember the dumbfounded looks I got when in the school cafeteria at breakfast one morning, after listening to other students—mostly male guitar players—talk about Coltrane, I naively asked, "Who's John Coltrane?" Eventually I learned about and listened to Coltrane, Miles Davis, Thelonious Monk, Bill Evans, Gil Evans, Chick Corea, Keith Jarrett, Bud Powell, Art Tatum, Charlie Parker . . .

The most memorable experience for me at Berklee was listening to Messiaen's *Quartet for the End of Time.* I was taking a jazz analysis class. The teacher's main concern was to open our ears. He would never tell us the name or composer of the piece we were listening to because he wanted us to listen without preconceptions. He played a slow movement of some strange music, unlike anything I had ever heard. As I listened, I

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started contemplating Christ as a mediator between God and humanity. An image formed in my mind of Christ suspended in air, with one arm stretched upward to God and the other arm stretched downward to earth. I remember being somewhat embarrassed about having this image because I was too sophisticated to "believe in Jesus" and I never thought about God, except perhaps as some kind of vague "energy." It astounded —"astonished" is too weak a word—me when at the end of the listening period the instructor told us that we were listening to *Louange à l'Éternité de Jésus* from Messiaen's *Quartet for the End of Time.*

This was my first introduction to twentieth-century music. I went to the Boston Public Library and listened to their entire collection of Messiaen records. Throughout the summer, I discovered Stravinsky, Bartók, Ives, Ruggles, Varèse, and Debussy. I also saw a lot of live music in Boston—McCoy Tyner, Sun Ra, and Keith Jarrett in concert, and Seiji Ozawa conducting the Boston Symphony Orchestra. I attended concerts at New England Conservatory, where I heard Schoenberg, Berg, and Webern, third-stream concerts, and Jaki Byard. My ears were opened and I was excited and inspired. I gave up playing the tuba and began studying composition, counterpoint, harmony, ear-training, and piano. My life as a composer had begun.

My first compositions were somewhat Ivesian in concept (combining simple tonal melodies with very dissonant chords) but lacking Ives's genius, expression, and great spirit. But shortly after I started composing, I stopped hearing tonal music. Or perhaps I should more accurately say I stopped *feeling* tonal music. Tonal melodies did not ring true to me anymore; I felt they were false. They did not correspond to truth or beauty or reality. When I sat down at the piano to "express" myself, or when I sang melodies quietly during one of my long walks, the melodies were not tonal.

Eventually I came around to tonal music again—through Schoenberg's *Theory of Harmony.* I did an exhaustive study of this book with Harold Seletsky, who studied with Josef Schmidt, a pupil of Berg. Studying Schoenberg's approach to harmony provided a working link between tonal music and *Erwartung.* This seemed to "fill me out." It was only after I studied Schoenberg's harmony book that I felt comfortable writing twelve-tone music.

As I continued to compose, I became more puzzled by the concept of form in music. I wasn't satisfied thinking of form as simply a modified version of ABA, or some other form that was imposed on a piece, but felt that form should be integral to each particular piece. Although he was referring to visual art, I was intrigued by Kandinsky's definition of form as "the outer expression of the inner content." I liked the idea that form depended on an inner "feeling."

After many years of composing, I began to feel my music as a vague, indistinct image of light and mass; or as shades of gray and white; or areas of heaviness and lightness. I began to feel this most acutely when I was composing my Second String Quartet. As I went over in my mind what I had already written, different sections began to feel grayer or whiter, and more dense or less dense—each section having its own peculiarity. I began to instinctively arrange these sections, deciding how long or short sections should be based on some kind of "balance of form" that I felt intuitively. A dense grayer section was "negated," "balanced," or "answered" by a lighter, less gray section.

Other than this image of light and density, the concept of what I think of as dimension in space is extremely important to me. Although I do not know exactly what it is—or why it is important to me—my sense is that the music that I like has dimension in space. I want musical gestures to feel three-dimensional, to fill some sort of musical space. A gesture that I perceive as not three-dimensional is not compelling to me.

These feelings of light, density, and spatial dimension continued as I composed other pieces. For instance, recently, when I was working on a large orchestral piece, I felt most particularly that I was composing the *eye* of the piece. These ideas have led me to consider that my aesthetic sensibility—my sense of what I feel is rightly proportioned, beautiful, and honest—is related to the human body.

This is one reason I am attracted to the music of Schoenberg. It is music (tonal and nontonal) that to me is arranged in a manner that seems to reflect my own aesthetics about the body. I came to Schoenberg relatively late in my musical development. It was only after I appreciated Schoenberg that I could appreciate Mozart. My sense is that Classical music (Mozart, Haydn, Beethoven) is somehow related to the body, and that the music of Schoenberg also reflects this relationship.

There are certain musical elements that need to be present in order for me to get a sense of my pieces as bodies. I need to have a central idea. The center can be a chord, a twelve-tone row, a nine-tone row, an eighteen-tone row, a musical theme, a musical fragment, a melody, or a rhythm. It doesn't need to appear at the beginning of the piece but I need to know it—to "gauge" where I am and whether the music is close to or far away from this center. This helps me feel the form.

Unity and repetition are other important concepts for me. Without unity and repetition—or some perceived relatedness of the musical material—I cannot distinguish distance from a point. Or rather, I can't perceive variations of light and mass related to a balanced whole.

In 1996 I finished a solo violin piece that I entitled *hoc est corpus meum.* My original inspiration for this piece was Percy Shelley's poem *Epipsychidion.* I

wasn't trying to convey the poem; I simply kept it by my manuscript paper and read it over from time to time to inspire me with a sense of beauty. After I began writing the piece, it came into my mind to name the piece *hoc est corpus meum.*

In *hoc est corpus meum,* the center is the opening three-note figure, its extension into a twelve-tone row, and the inversion of this row, which forms a complete phrase.

Approximately three-quarters of the way through the piece, I systematically rearranged the original row to produce a series of four tonal triads—F minor, A major, G minor, and B major—and their inversions (C major, G♯ minor, B♭ major, and F♯ minor).

At the end of the piece, the F-minor triad and A-major triad are again stated. After a brief pause, the piece ends on a major sixth (C4–A4). (When I first heard this ending in performance—the alternation of the F-minor and A-major triads followed by the major sixth—I was struck by a mood of great nostalgia.)

I have tried to understand why I felt the piece should be named *hoc est corpus meum.* It seems to me that different thoughts and feelings were converging in this piece. In one sense, I think that this piece relates to all that I have been talking about regarding the body and about my slowly forming perception and understanding of this as an aesthetic concern of mine. It also has to do with my religious sensibilities.

I think of my religious sensibilities as the images and feelings in my mind, vague and less vague, that I perceive as being the most profound. *hoc est corpus meum* refers to the body of Christ. In my mind, Christ, as well as Dionysus, is a figure of *zöe,* a Greek word that, to my understanding, means life. But *zöe* means not only life but indestructible life and, more than that, the ecstasy of life. *hoc est corpus meum*—this is my body. The body is nostalgic and ecstatic at the same time. To me, the repetition of the row and the rhythmic repetition throughout the piece is a Dionysian element, an ecstatic element. The rotation of the row into tonal chords is disturbing. The tonal remembrance at the end is nostalgic.

But "hoc est corpus meum" does not mean for me only the body of Christ. It is everyone's body. It is the existential condition. It is the incomprehensibility of my body in this time and space, the incomprehensibility of my existence. It is the body—the physical presence—of everyone I see, which says to me: this is incomprehensible; this is not possible. And yet it (life) *is* and it endures.

I have often wondered why, since I was so enraptured by him, I never incorporated Messiaen's technique into my own music. His music seems to be more about "emanation" than about a three-dimensional sense of

Figure 1: *hoc est corpus meum,* mm. 1–8.

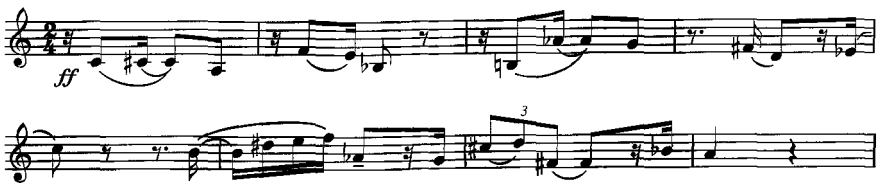


Figure 2: *hoc est corpus meum,* mm. 247–53.

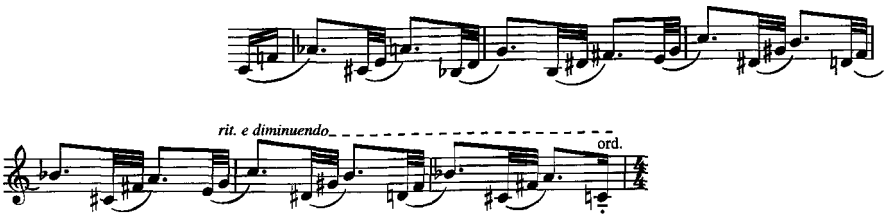
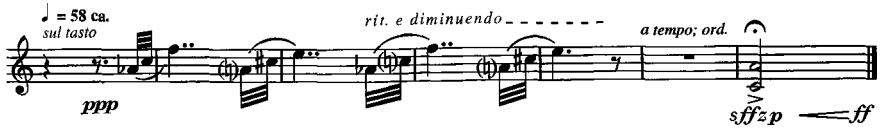


Figure 3: *hoc est corpus meum,* mm. 308–14.



the body. Now, perhaps, the next step for me is to integrate this "emanationism" with my conception of the body.

* * *

It always surprises me to hear people disparage dissonant music, to make claims that it is "angst-ridden," "angry," "jarring," or "ugly" or any of a handful of negative terms. When I first heard the dissonant music of Messiaen, Stravinsky, Varèse, and Ives, it was the most exciting, powerful, and emotional music that I had ever heard. Although I have gone through different styles of composing, and am presently drawn to a very specific sound world, my basic love of "dissonant" music—complex harmonies and nontonal music—has always remained.

Elements of a Style

By Edward Jacobs

How many pieces have you written?

In a recent conversation with a couple of composers whose work I admire,[1] this question was posed. These composers are in mid-career, wonderfully accomplished and experienced—far more so than I—each with numerous performances and recordings of very high quality. Each has composed for a wide variety of performing media; each has created works that express and encompass—at least to my sensibility—an exceptionally broad range of the human experience. Nonetheless, they wondered if they were writing the same piece over and over again. This question is difficult, yet important for me because it leads to an investigation of the characteristics and limitations of my style and, most productively, it leads me to consider new ways to exercise and stretch my creative imagination.

I would certainly hate to think that I'm continually rewriting the same piece, but there are undeniably common elements among many of my pieces. Are they structural elements or surface elements? If both, then do I know only one way to do things? If there are so many common elements found in my works, am I just trying to keep rewriting it until I finally get it right? Will I ever get it right?

Every writer, by the way he uses language, reveals something of his spirit, his habits, his capacities, his bias.[2]

What is art? What is music? What makes "good" music? What constitutes a "good" idea? What constitutes "good" development, expansion, and investigation of an idea? What constitutes sound musical logic?

If we could find a way to answer these questions, then we would be on the way to articulating our musical values, or what might be called our *musical aesthetic.* While we may not sit down with this express purpose in mind, I think that composers do formulate answers to these questions with their music. The music we write is, in itself, an *expression* of our aesthetic. The aggregate of choices we make in order to create that expression is *style.*[3] More difficult and revealing questions lie behind the choices that constitute our style: Why do we make those particular choices? What has led me to the choices I've made?

Over the last ten years, most of my music has begun with the same exercise, though the process has become more concise with time. Whatever the ensemble, I begin by writing lines of varying character for each of the

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instruments, or instrumental families, as an exploration of idiomatic writing for those instruments. A good deal of what I write at this point eventually finds its way into the piece at hand. Regardless of the character that emerges in these etudes, though, the line that always grabs my attention is a long, plaintive melody. Some of my pieces (e.g., *2/27/86; The Fiction of a Glance; "I've Shook My Fists at the Sky"*) begin with a melody of this character (see fig. 1), and some *(The Fiction of a Glance; At Recess, We Play; Blurring the Margins; The Thing With Feathers;* or *Ensemblespiel)* use such a melody as the primary focus of an important formal/structural passage in the piece (see fig. 2).

When I think about the nature of these lines, I attach their character to melodies I heard in my childhood, the melodies sung by the cantors in the temple I attended each week as a child. The cantor in the adult services, Michael Hammerman, had an operatic voice about which the "grownups" raved, "Like a concert every week!" His voice was surely beautiful, but what I loved best was the clarity of the detail in the ornamented lines he sang. He sang without amplification, in a very large space, and the power of his voice was almost overwhelming to me. But in the call-and-response portions of the liturgy, my small, unsure voice gained strength as it joined forces with the adults around me. Though no one in the congregation could match the quality of his voice, we could all, as a group, respond to him as a *tutti* equal.

In contrast to the adult services, my weekly experience at the children's service was not a concert, but more like a sung communal prayer. Each Saturday morning I surprised my family by getting up early, dressing up as best I could, and getting myself to the temple. (They later confided to me that they feared I would become an impoverished rabbi. Imagine their relief when I announced my intention to major in music! *Oy vey!*) In a small chapel, the children's service was led by a man much like my grandfather, though without the Eastern European accent, who had a voice that was all too human, just like my own. The intimacy of the setting, though, made inescapable the depth of his connection with the prayers he chanted. Eventually, some of these prayers and melodies took on deeper meanings for me, notably the Kaddish, the prayer for the dead, which I sang for my grandparents and, years later, for my father.

By the time I was twelve, even before my bar mitzvah, the liturgy had become very troublesome for me; my interests in other areas had broadened and deepened, and I no longer felt connected to the temple—nor have I felt close to any organized religion since. Nonetheless, the melodies that seem most irresistible to me somehow draw me back to experiences that built my appreciation for community, personal reflection, and the value of spirituality as much as for musical expression. It appears that I

Figure 1: Opening of *"I've Shook My Fists at the Sky," Meditation & Agitation,* for solo clarinet.

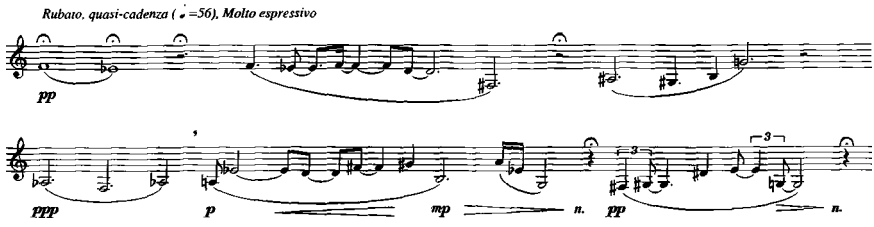

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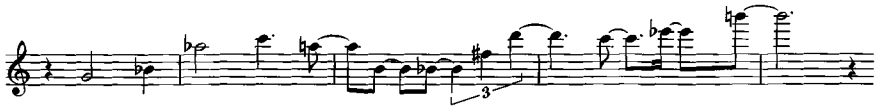
Figure 2: Melody drawn from *Ensemblespiel*'s sketches, later used as soprano line of a chorale (see figs. 3, 4).



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still feel a deep connection to the character of those melodies, even if not, at present, to their source.

These lines that I write as I start each piece, and the plaintive melody to which I become attached, are just the beginning of my compositional exercises at this stage of creation. As I continue, I write a bass line against this melody, then write inner lines (see figs. 3 and 4). Essentially, I use my initial melody as the *cantus firmus* of a counterpoint and part-writing exercise, not unlike exercises from undergraduate harmony classes—without the modal/tonal context upon which those undergraduate exercises are based.

This chorale-writing process began with *Crossing . . . over* (1990), but the length of the resulting chorales has diminished substantially, from the 43-chord chorale shared by *Crossing . . . over* and *The Fiction of a Glance* (1994), to two distinct ten-chord harmonizations of a single melody in *The Thing With Feathers* (1999), and an eleven-chord chorale in *Ensemblespiel* (1999) (see figs. 3 and 4). Each of these chorales provides a sublimated framework and wellspring for all the melodic and harmonic material throughout each piece, but they also rise to the foreground at each work's closing. As a denouement following the piece's rhythmic and dynamic climax, the chorales emerge in a slow *Klangfarbenmelodie.* As thematic clarification, unobscured, non-abstract "aural" views of the chorales reveal the "theme" that has been the subject of improvisation and variation.

Figure 3: *Ensemblespiel*'s 11-chord chorale as abstracted part-writing exercise.

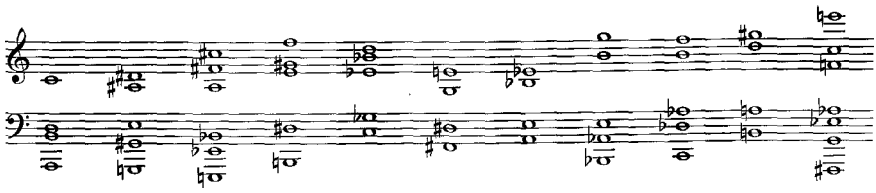
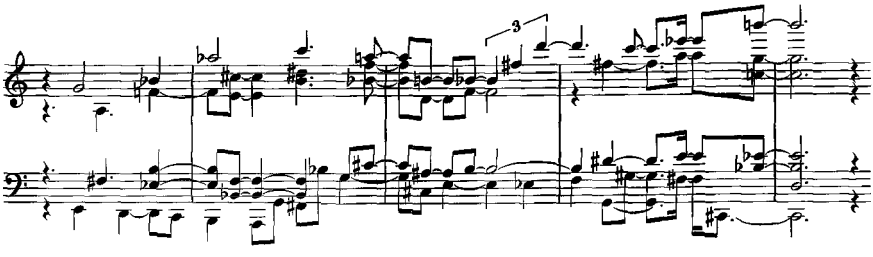


Figure 4: *Ensemblespiel*'s chorale as harmonization of original melody (see fig. 2).



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Just as I find that my melodic writing at this early stage in a piece reflects a sensibility that is heavily influenced by my early experiences in the temple, I find that my approach to harmonically unifying my music reflects powerful experiences in and with jazz—as does my melodic writing at a later stage in composition. I use these chorale harmonizations in several ways, but most often in a manner analogous to the "changes" in a jazz tune. In essence, these chorales represent the chord progression over which I "improvise" most all of a work's surface lines and counterpoint. Ultimately these lines are sometimes sounded in a rather bare texture, and at other times with the chorale's chord progression as supporting harmony.

The lines that I "improvise" over these progressions are usually very quick-moving ones, and they become the biggest challenge to players. With a rhythmic character that is clearly influenced by listening to and transcribing several tenor sax players (Dexter Gordon, John Coltrane, George Coleman, Billy Harper, George Garzone), most of the surface lines are a product of my love of jazz. The weaving and overlapping of these lines is a style-characteristic that goes back to the first piece I wrote, a continual attempt to write a "solo" that is only complete when several players contribute to its statement.

For better or worse, when most players encounter my music they find their individual parts challenging but not unusually so (relative to much contemporary music, that is). Players most often comment on the articulations and phrasing I notate in my lines—much more than they comment on the rhythm. Typically, a player becomes aware, fairly soon, that my lines will fall well beneath their fingers *(usually),* but that my articulations and phrasing do not fall into familiar patterns. They are, for most players, not patterns that seem intuitive. Quickly, though, the players realize the influence of jazz on my music, and hear that I'm not necessarily pursuing a "legit" approach. While the influence of jazz is certainly there, it is certainly not something I think about on a conscious level. It is, simply put, the way I hear line.

Responsible players meet this challenge quite quickly, and begin ensemble rehearsal with their own parts well prepared. The toughest challenge is just around the corner, though, as the ensemble learns that many of these detailed lines overlap and interweave. Only once have I encountered players who said, "We played what was on the page and it all just fit together fine."[4] More typically, my concept of a "group solo" tends to demand a kind of rehearsal that can be infuriatingly detailed, at least at first. When I rehearse my own music, I tend to spend the first rehearsal on just a few passages, trying to make sure that the players get the gist of what I'm up to. After that first session, after they've become accustomed to hearing how I like to construct textures, rehearsals tend to move along well.

What these players learn to hear is that the short passages in their parts are a portion of a single thread. Their lines overlap, follow, overlap again, and pass to another player's lines. Though a challenge to execute, the result is a larger fabric whose texture changes colors with each thread's weave. This approach allows me to treat the ensemble as a single instrument with an extraordinary range. In this regard, the influence of Donald Martino's *Triple Concerto* comes to mind, as does my work in electronic music with Mario Davidovsky, who encourages his students to give each sound a vibrant and dynamic life of its own. For certain, Davidovsky's music has provided me with an elegant model for the care of timbral detail.

Good composers borrow; great composers steal.

This paraphrase of T. S. Eliot's statement[5] was sarcastically offered to me by my first composition teacher, Sal Macchia, at the University of Massachusetts, Amherst. A few years later, I used this license to borrow an idea from Elliott Carter, and tried to run as far as I could with it. In mm. 174–75 of his *Variations for Orchestra,* Carter briefly creates a texture that seems like such a simple idea: the first violins move from a unison to a *divisi* chord, then return to a unison. I don't know why this little idea has so

stayed with me, but I have used it repeatedly since 1988. I often use it at the opening of a piece, to introduce chorale chords integrated within an important melodic motive, but I also use it as an alternative way of bringing the chorale together with the longer lines that are based upon it. In such passages, several instruments will articulate a rhythmically active line in unison—one of those improvised on the chorale progression—in which some notes of the line expand into a chord. As the lines unfold, so does the embedded chorale (see fig. 5).

For Whom Do I Write?

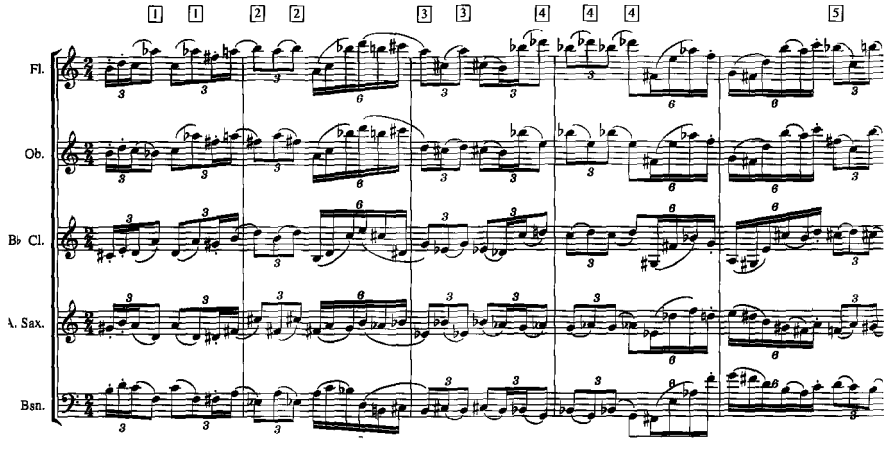
If one is to write, one must believe—in the truth and worth of the scrawl, in the ability of the reader to receive and decode the message.[6]

It seems relevant to say here that I am not a person who believes that music, *in itself, conveys* or *contains* emotion. I would never deny that composers, performers, and listeners all experience a wide variety of emotions in their respective encounters with music. But I am convinced that whatever extramusical thoughts emerge through experiencing music are brought about more from the performer/listener than from the music itself. This seems evident from the enormous variety of experiences that can be related in reaction to any given piece of music. I am quite sure that whatever thoughts, emotions, and/or feelings arise in a listener are due to the contextual "baggage" that the listener brings to the music being heard (e.g., personal associations), or even to the very act of listening to music (e.g., "I hate it when music *forces* me to listen").

I take the space to state this because I know many wonderful composers who are writing in order to convey specific extramusical messages and/or emotions through their music. When I hear such pieces I often enjoy them very much, but when I take from their music something other than what I'm told they were trying to convey, I don't consider either one of our efforts a failure. (I've never been moved to imagine a storm during Beethoven's Sixth Symphony, but I still think it's a fabulous piece. My students like to talk about the battle that Beethoven depicted in that movement—are they wrong?) I'm not referring here to general moods, which are certainly possible to set; rather, I'm addressing fairly specific emotions or story lines. For such things to be conveyed, the listener needs to be instructed to read/hear a program note that "sets up" the experience. With such preparation, I believe we can hear whatever has been suggested. But without such prompting, I simply don't believe that a common listening experience can bring about a common emotional experience of any specificity. Consequently, I can't imagine writing music with that goal in mind.

When I am told that my own music has been a catalyst to a listener's emotional experience, I have found myself delighted, but also somewhat

Figure 5: Measures 235–39 of *Ensemblespiel*: Beginning of chorale's unfolding within unison line. Numbers represent chords 1–5 of chorale.



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surprised by what I am told the listener felt. Aside from general moods, listeners will relate fairly specific thoughts that have little, if any, connection to me, to my life, or to what may have been on my mind during the composition of that particular catalyst. I am genuinely delighted that I played a role in the experience they had, but I did not compose the feelings that made that experience potent; I composed a catalyst that allowed their own emotional baggage to generate feelings.

I suppose that I agree with Roger Sessions, who wrote in *Questions About Music* that a composer would do best to write for those who share his/her values. That is, if you write according to your own values *(musical aesthetic)* your audience will come to you. An audience who shares your values will identify those values within your music and will continue to seek an expression of those values via your music. It will therefore come as no surprise to learn that I write for myself only. I just love the musical game that is *composing,* and I do it for me. Certainly, there are many who will not care for the sounds I make, but there are always a few who take a moment to let me know that my work has delighted them. However, when my music leaves them with nothing, I'm encouraged that they'll find what they need elsewhere—their disappointment is not my responsibility. I only feel a responsibility to try to get closer to my own imagination's limit with each successive piece: Can I imagine a vivid musical world? Can I make that world, through the marriage of my creativity and my craft, engaging, enticing, stimulating, interesting, and provocative?

Why Do I Write?

All writing is communication; creative writing is communication through revelation—it is the Self escaping into the open. No writer long remains incognito.[7]

This question *seems* easier than it is. I have always enjoyed *thinking* in musical terms. The act of making music—whether singing, playing the saxophone, conducting, or composing—has always provided a kind of "charge" and solace that I find nowhere else. The solace comes from being alone, and from the freedom I feel, when alone, to explore whatever musical terrain I am led to by my imagination; the charge comes from creating an order of things that represents my imagination's musical/aural world. I should point out that a desire for order seems all but absent in many areas of my life (my office, for example); it applies only to activities in which ordering seems like choreography. I rarely feel a need to straighten out my filing cabinets, but I very much enjoy conducting, teaching, even planning the syllabus for a class. To me, the kind of organizing I enjoy makes me use my imagination to engage in problem-solving.

I used to enjoy math for the same reason: not because of "the beauty of numbers" that mathematicians speak of, but because there's a kind of abstract conceptualization of a scenario that demands construction in my mind. In such problem-solving, I must make a flexible mental/aural model that allows for exploration of a variety of possible paths—and I must construct more models for each of those paths. It's a kind of game where I put notes together, try out possibilities that are new to me, find common ground among seemingly disparate instruments, and find ways to make evident the connections I hear among seemingly disparate musical thoughts.

Even while I get both solace and creative stimulation from this game that I love, composing is often a struggle. Again, I will recall a recent conversation in which several writers/artists were put on the spot: "Describe your relationship with your creativity." While some focused their response on the word *creativity,* to me the emphasis was on *relationship.* My relationship with creativity is like a marriage whose vows I take literally—i.e., *'til death do us part.* This is a marriage from which I cannot withdraw. This is a marriage that is, like most, at times deeply passionate, at times turbulent; at times a partnership of two uncooperative people, at times of two dispassionate people; at times a union of people who seem capable of finding joy from just being in the same room together and at other times just seem to be in a rut; at times a marriage of two people who seem remarkably disconnected and, at other times, of two people who can't get enough of each other. Like any interpersonal relationship, I have come to acknowledge, understand, appreciate, work through, and make the most of the various phases in the cycle of my relationship with my creativity. And,

like any such relationship, I feel frustrated when one of us seems uninterested . . . I am very frustrated when I am able to concentrate but seem unable to be creative, or when ideas are overflowing but I am unceasingly distracted. As much of a struggle as it can be, this is a relationship with a partner to whom I am deeply committed. Thus far, to me, this union has led to each of my pieces being somehow *better,* more "sound" in its craft and structure, more mature and more articulate than the work that preceded it. And, I note to myself, each work has several passages or sections in which my imagination has led me to try something new, as well as passages in which I try to make more effective the "something new" that my imagination had led me to in an earlier work. Despite the struggle, I'm growing from the partnership.

This relationship was formed and is nurtured in pursuit of the "musical magic" I embrace and feel the impulse to create. That magic is about communication, above all. I don't mean communication of an extramusical sort; I'm talking about the kind of communication to be found in a dance troupe, a theatre company, a sports team, or even in the day-to-day interaction among and between people on a personal level.

The communication I'm after—what I want my music to encourage—is a very intense communication *among* the performers, the participants (the congregation?). Of course, a drama should unfold through the organization of musical ideas, but a parallel drama should unfold within the ensemble as players concentrate and coordinate their efforts toward a common goal. In the case of my music, that goal is my imagination's "über-instrument." When that happens, when the ensemble's efforts are truly focused, then the musical phrases, gestures, and drama that emerge are startlingly vibrant to me: the performance hall quite literally seems to vibrate. When I've witnessed this communication and connection among performers of my music, then I feel I've succeeded in my goal.

In the process of trying to create such catalysts, I do not see my job as a composer to be that of finding and molding ideas so that they will fit into some world that seems "right" but, on the contrary, to create the worlds into which my ideas live and breathe. My efforts to imagine such worlds test the limits of my imagination. And I will confront the limitations of my style—bringing about evolution in new directions—by working to find appropriate materials and techniques to realize these worlds at the boundaries of my imagination.

Our tradition is filled with composers whose *styles* (choices that express musical values) somehow remain consistent even as their syntax is modified. It seems that if one's aesthetic is well developed and secure, then the most identifiable elements of one's style transcend syntactical choices. The works of Stravinsky and Picasso, for example, are easily identifiable

regardless of the language they use in different periods of their careers. Even while I obviously cannot yet know how, if at all, my syntax—or other elements of my style—may change in the course of the musical investigations to come, I think that whatever limitations I will face will be related to limitations of my curiosity. If I continue to listen to and look at the work of a wide variety of artists, then my sensibility and aesthetic will broaden and deepen in as yet unknown directions, and I will continue to find excitement in my relationship with my creativity.

Notes

1. Ross Bauer and David Rakowski.
2. Strunk and White: 53.
3. With thanks to my colleagues Jeff Jarvis, Thomas Huener, Britt Theurer, Margaret Bauer, and Todd Finley.
4. With thanks to Chris Finckel, cello, and Marilyn Nonken, piano!
5. "Immature poets imitate; mature poets steal; bad poets deface what they take, and good poets make it into something better, or at least something different. The good poet welds his theft into a whole of feeling which is unique, utterly different from that from which it was torn; the bad poet throws it into something which has no cohesion" (Eliot 1920).
6. Strunk and White: 70.
7. Strunk and White: 53.

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Eliot, Thomas Stearns. 1920. *The Sacred Wood: Essays on Poetry and Criticism.* London: Methuen.

Strunk, William, Jr., and E. B. White. 1959. *The Elements of Style.* New York: MacMillan.

A Knife All Blade: Deciding the Side Not to Take

By Arthur Kampela

My basic intention when conceiving a piece—besides the sonic embodiment of purely conceptual ideas—is to be able to access a wide spectrum of sonic materials, for I am interested in the whole gamut of sound, irrespective of its "raw" or "cultivated" aspects. Contrary to the notion of an *infinite* array of possibilities, where decisions would be lost due to lack of constraints, I would like to argue that when there is a struggle between materials to coexist and cohere, they naturally develop strategic priorities, and order themselves in such a way that the compositional flow is enhanced. This layering of gestural demands and compositional strategies highlights the music's inner textures.

The string quartet excerpted below (see fig. 1), composed 1997–98, represents the following aspects of my compositional interests: extended techniques (timbres), micro-metric modulation (tempo/rhythm/form), motoric patterns (ergonomic considerations), and microtonality (harmonic/pitch spectrum). In this example, the all-pervading distribution of heterogeneous materials, (i.e., pitches, percussive sounds, glissandi, behind-the-bridge sonorities, harsh sounds, etc.) point to a context-oriented strategy, in which the very musical syntax is questioned while given. In other words, the piece attempts to consider the meaning of non-intervallic (strictly pitch) relationships, since it conveys elements of a "disruptive character," extraneous to pitch-class reduction. I am suspicious of formulaic directions on "how to compose," and I confront not only the musical syntax and its underlying grammar but also the instruments or tools that propel such grammar. Here, another given is questioned: the acceptance of a specific technique for playing any instrument, which underlies, obviously, choices that encode the traditional manipulation of the instrument in question. The instrument as a "donator" of sounds, and not simply as a preconceived tool of codified techniques/usage, accurately describes my way of reinterpreting the "received wisdom." Note how in figure 1, m. 1 (first violin) the distribution of independent gestural routines for each hand creates the necessary conditions for a truly "motoric polyphony." As we can see, the bow of the first violin (right hand) plays the E (first) string behind the bridge; the next gesture is done by the left hand alone (LH pizzicato) when plucking the G♯ on the first string; again, the RH intervenes, bowing the E string behind the bridge—this maneuvering, although part of the structural context, indicates, also, the purely motoric need of creating a rhythmic space for the next intervention of the left

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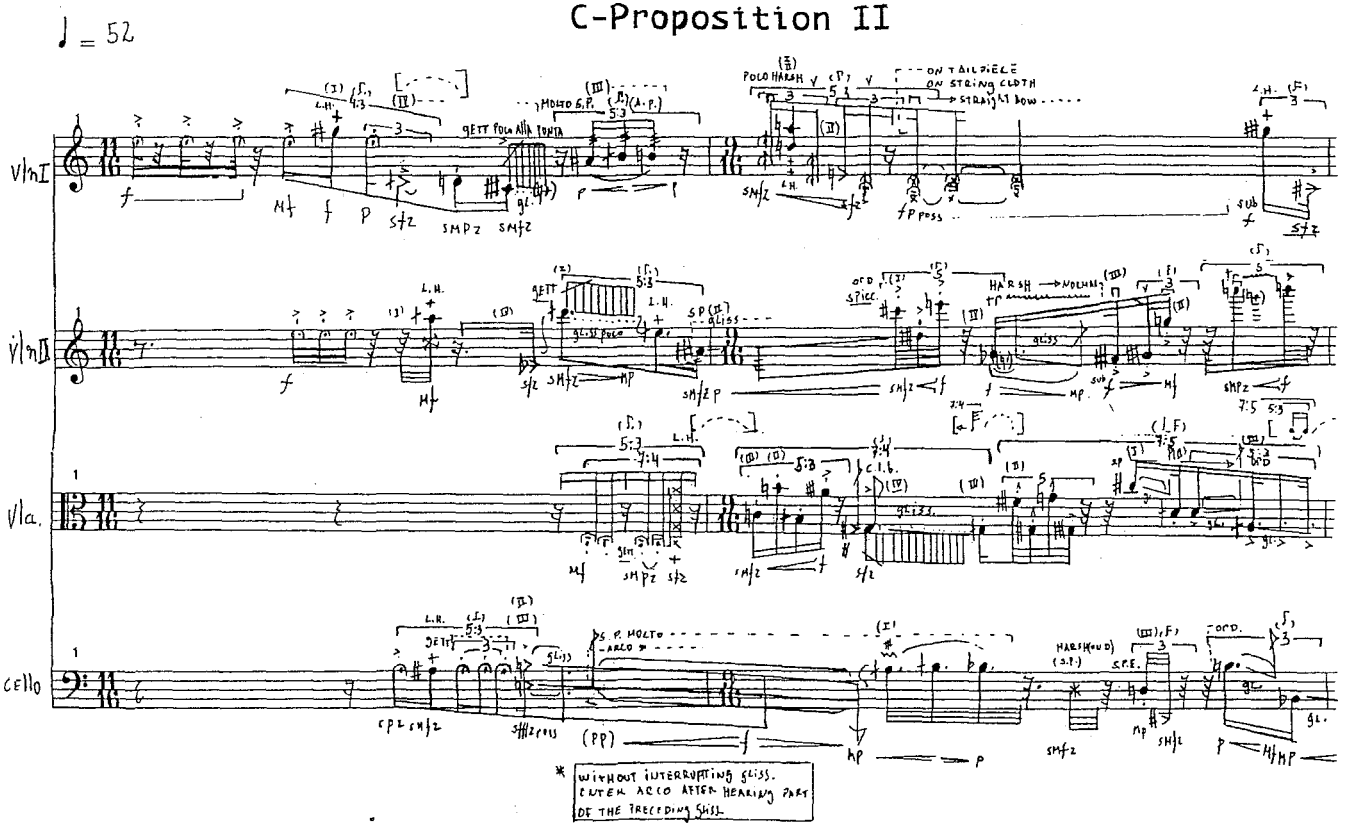
Figure 1: String Quartet: *Uma Faca Só Lâmina* (1997–98), "C – Proposition II," mm. 1–2.



hand. Next comes a beak-shaped note that denotes a left-hand hammer-on of a D♯ on the fourth string; immediately, the bow (RH)—for the first time—joins the D previously hammered and plays, subsequently, a "get-tato" (bouncing the bow) on the C♯ (fourth string), while the left hand performs a descending glissando to C♮ on the same string.

The examined "cell" is a very clear example of my particular way of superimposing two distinct compositional strategies: on one side, purely structural considerations, which are more related to rhythmic envelopes and the distribution and connection of sound materials; on the other, the implied need to overcome instrumental constraints when accessing extended-techniques effects or new timbral nuances. This struggle between compositional hierarchies and instrumental *limitations* is a constant preoccupation of my music. The ergonomic considerations of instrumental capabilities coordinate the inner logic of my compositional choices. Therefore, the structural aspect of my pieces cannot be inferred from the surface elements only, even if we encounter traces of cohesive compositional designs in the placement of rhythms, timbres, and pitches. The underlying logic of my compositional text lies in its way of offering, in the very deployment of motoric/gestural patterns, the cohesive aspects of a polyrhythmic discourse, concomitantly with the more perceptible sonic hierarchies presented.

In figure 1 we can see a process of transference of gestural routines at work when the second violin repeats motoric patterns originated in the first violin. Notice that although the pitches and rhythms of this passage differ from those of the first violin's, there is a maintenance of the motoric routines—with slight variations such as the introduction of a pause right before the LH hammer-on of the E♭ on the fourth string (instead of RH bowing the E string behind the bridge, as in the first violin) and the glissando of the D♯ on the first string (instead of on the fourth, as in violin 1). The independence of the mechanical aspect in relation to the structural history of this passage confirms the conflicting superimposition of both layers of meaning, and shows the complementary characteristic of my music's "lines of force."

In another composition using similar principles (*Gestures,* for solo violin), we can see the way certain motoric cells undergo processes of retrogression, symmetry, and repetition with augmentation, among other variations (see fig. 2).

The expansion of the motoric-rhythmic premises incorporates the vocal/bodily resources of the interpreter. Such compositional "amplification" becomes an integral part of the distortion/distribution of timbral and motoric-rhythmic parameters (see fig. 3).

Figure 2: *Gestures,* for solo violin (1993), excerpt.

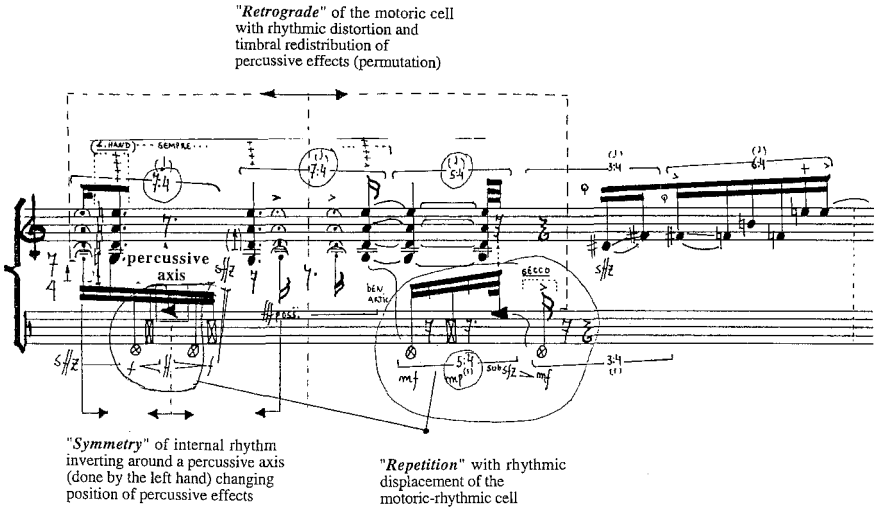
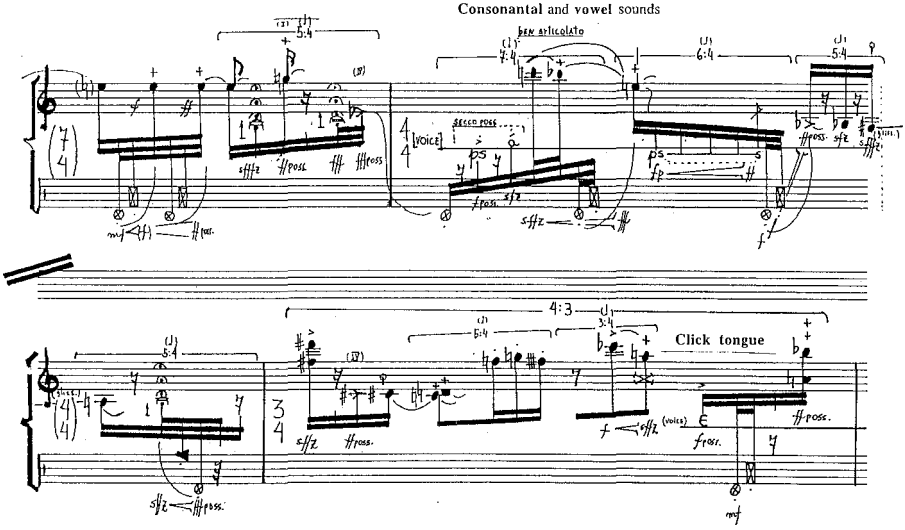


Figure 3: *Gestures* vocal sounds.



This *physical* extension of my pieces, as they project beyond the mere instrumental mechanics to involve the performer as a whole—his/her body as a donator of sounds—is a fundamental aspect of my understanding of the ambiguities between gesture and sound. The re-channeling of energy spent in performing can acquire the status of "structural" cell if we view the bodily "reaction" to the music being played as a complementary detail of its utterance. A scream, a click-tongue, a hum, the tapping of the feet, etc., can be enlisted in the contrapuntal presentation of the sonic materials. The use of a microtonal scale (with *its* "tight" melodic intervals) is an instance of the struggle being staged between gestural and structural strategies, since the microtones (a part of the precompositional structure) carry the sense of a contour being "bent" by motoric imperatives. The nonthematic melodic material is but a trace of an attempted discourse, suggesting, more than denoting, a final text with obvious plotted correspondences (see figs. 4a and 4b; notice the similar motoric patterns used in both passages, and how they affect the melodic contour/profile).

Figures 4a and 4b present functional similitude with that of the "synonyms" in spoken language since they imply equivalent states for the sonic objects deployed. As we can see, they are not identical, but resemble each other like distant beaches on faraway shores that are geographically different but preserve the borderline structures witnessed between sea and sand/stones.

Figure 4a: *Quimbanda,* for electric guitar (1998–99), mm. 1–6 after introduction.

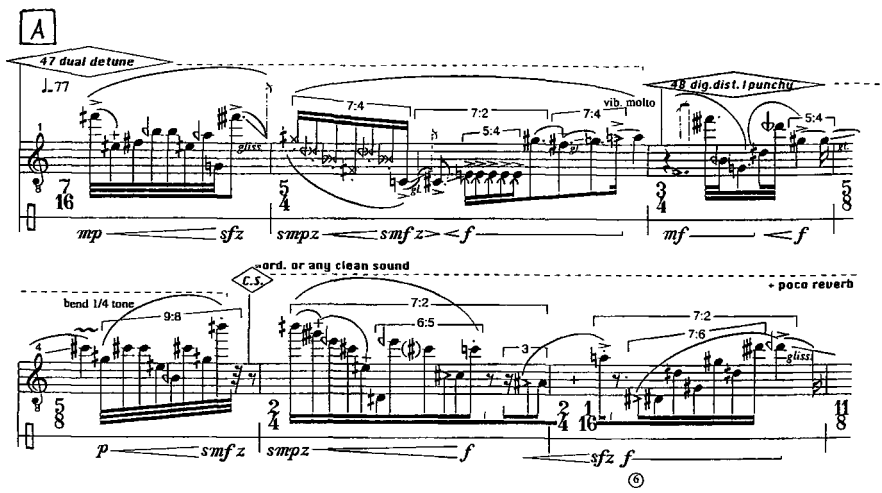
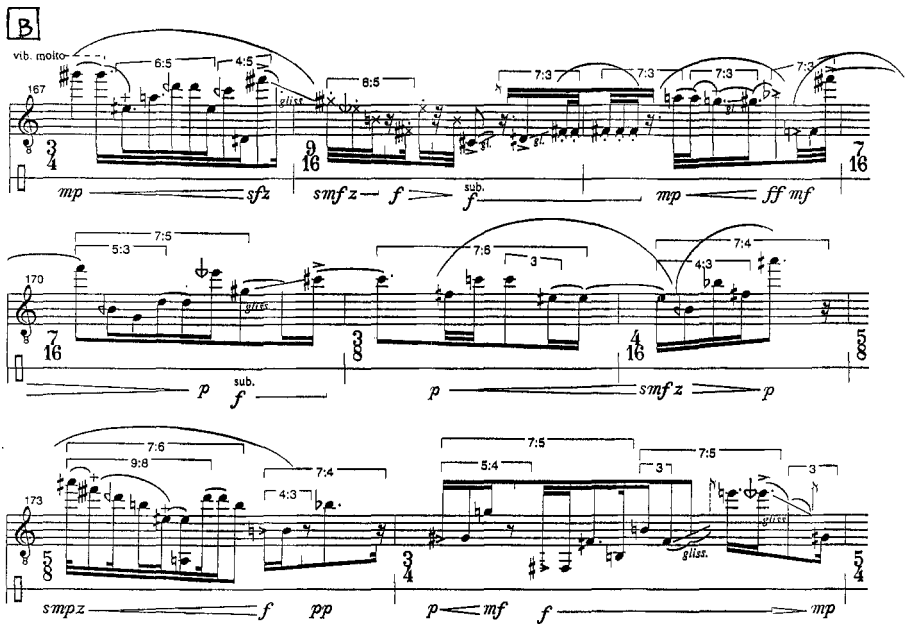


Figure 4b: *Quimbanda,* mm. 167–74.



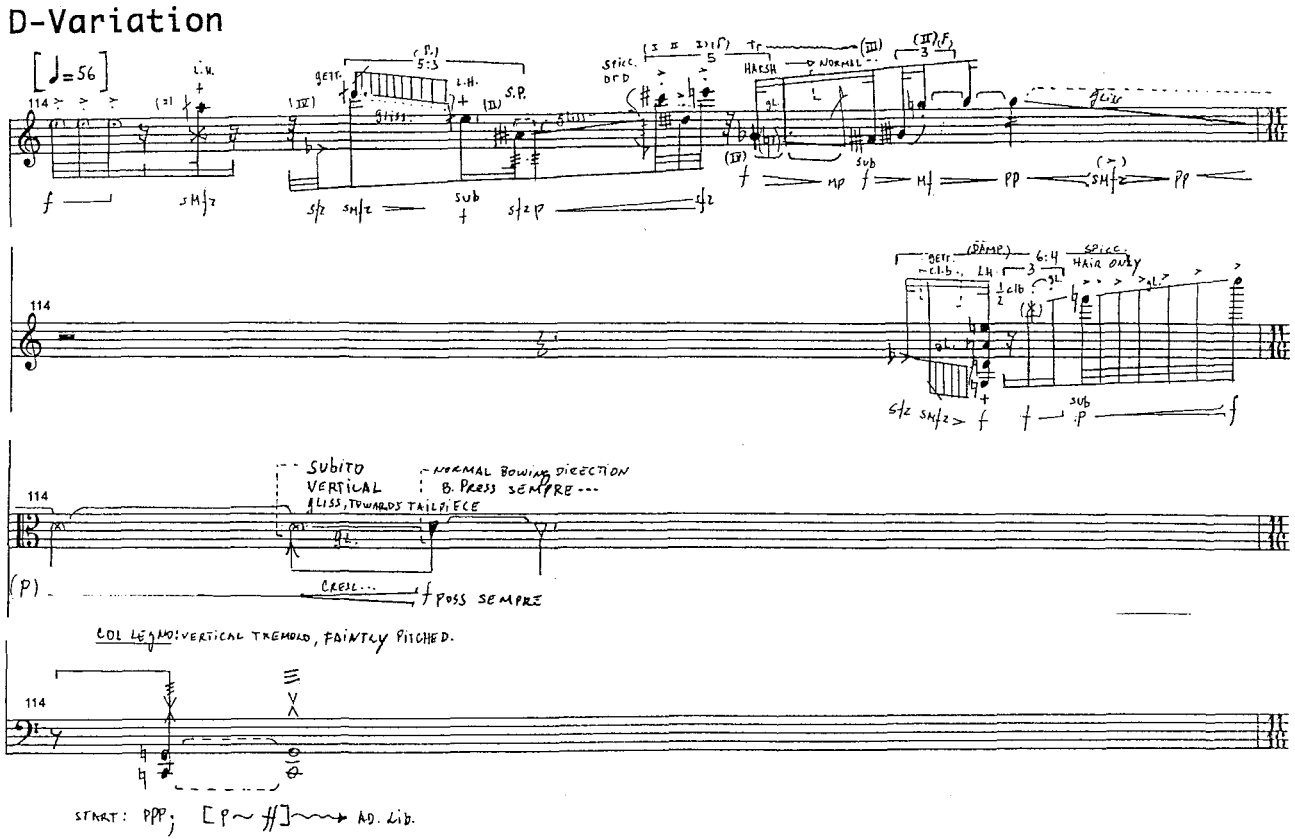
Notice how the intervallic correspondences are replaced by the ever-changing presentations/"partitions" of similar sonic contours whose functional aspects are simply instanced rather than being thoroughly contextual. What is preserved are the motoric patterns, functioning as a kind of "thematic" material, underlying the distribution of new rhythmic strata. In figure 4b we can observe certain peculiar "modulatory" moves, in which intervallic correspondences are "sacrificed" for ergonomic cohesiveness. Note that I tried to keep timbral and contour resemblance between both sections, changing the pitch and rhythmic presentations while maintaining the intervallic integrity of certain open strings (whose pitches aren't changed). This counter-rhetoric strategy of contour acts—for the performer and (I hope) for the listener—as a type of perceptual "synonym" of materials previously heard.

The same procedure is used when overlapping the polyphonic strands of musical material, thereby generating the harmonic signature of a piece. In my String Quartet, I employed this technique of "restating" materials formerly presented, preserving their ergonomic/motoric routines. Many times I worked "retroactively," selecting chunks of the material from either past *or* future moments of the composition, in order to reapply their

motoric profile at a given time. As soon as that "phrase" or "cell" was respelled, I went to another phrase, re-sculpting it rhythmically, and sometimes adding small variations to the motoric profile. The String Quartet is characterized by constant interruption: the collision of many possible "routes" of musical presentation rather than the development of a linear discourse. Hence, the musical flow attempts to reassert itself, while coordinating the music's textural bandwidth. The harmonic output stands, therefore, for the superimposition of radically different musical objects that sometimes overlap, acquiring a sudden degree of functionality as they deploy—under diverse metric specifications—similar timbral collections. The perceptual aspect of such a "charged" sonic spectrum is "fattened" by a lack of harmonic referential; thus, many times we have the impression of hearing on a *diagonal* axis, where musical objects seem to accumulate and "resolve" by entropic bursts. Ferneyhough (1993: 23) mentions the "time lag" experienced by listeners of his music when "provisionally erected frameworks are continually being violated by current events which invade them." This "feeling of being pushed beyond the normal threshold of temporal tolerance," where time is "bent," refers not only to our cognitive difficulty in grasping simultaneities erased by an inexorable flow of new information, but points to a spatial or static aspect of time in which timbral deviations are heard as pertaining to the same continuum, as in a picture. In figure 5, the same material is reprocessed to display novel harmonic intersections with recurring horizontal elements previously shown. At the "D–Variation" section, the first violin repeats, literally, what was done by the second violin during the "C–Proposition II" (see fig. 1); the second violin repeats the first violin from m. 20 (not shown) "backwards" (not retrograde!), grouping chunks of the motoric line but at this time employing distortional rhythmic strategies; the viola repeats the cello line of "Proposition II" (fig. 1), interspersing small variations and distinct rhythmic profiles; the cello, in turn, uses just a small amount of the viola material found in m. 20, and goes "backward," transforming its rhythm and introducing new sonic elements.

The same attempt at coordinating the mechanical and the structural axes of my compositions is found in my series *Percussion Studies,* for solo guitar (1990–97). In figure 6, extracted from *Percussion Study II,* an open E at the first string is plucked by the right hand; without interruption, the left hand alone in a "ligado-like" movement strikes an E at the sixth string. (*Ligado* is a Spanish word common in guitar literature, which means "hammer-on" or "hit the string with the left hand alone.") Again the right hand intervenes with three distinct percussive effects, hitting the lower strings with the thumb and, with outstretched hand, the bottom and top of the soundboard, which gives time for the left hand alone to "hammer-on/hit" the E

Figure 5: String Quartet, "D–Variation": "motoric recapitulation," mm. 114–17.



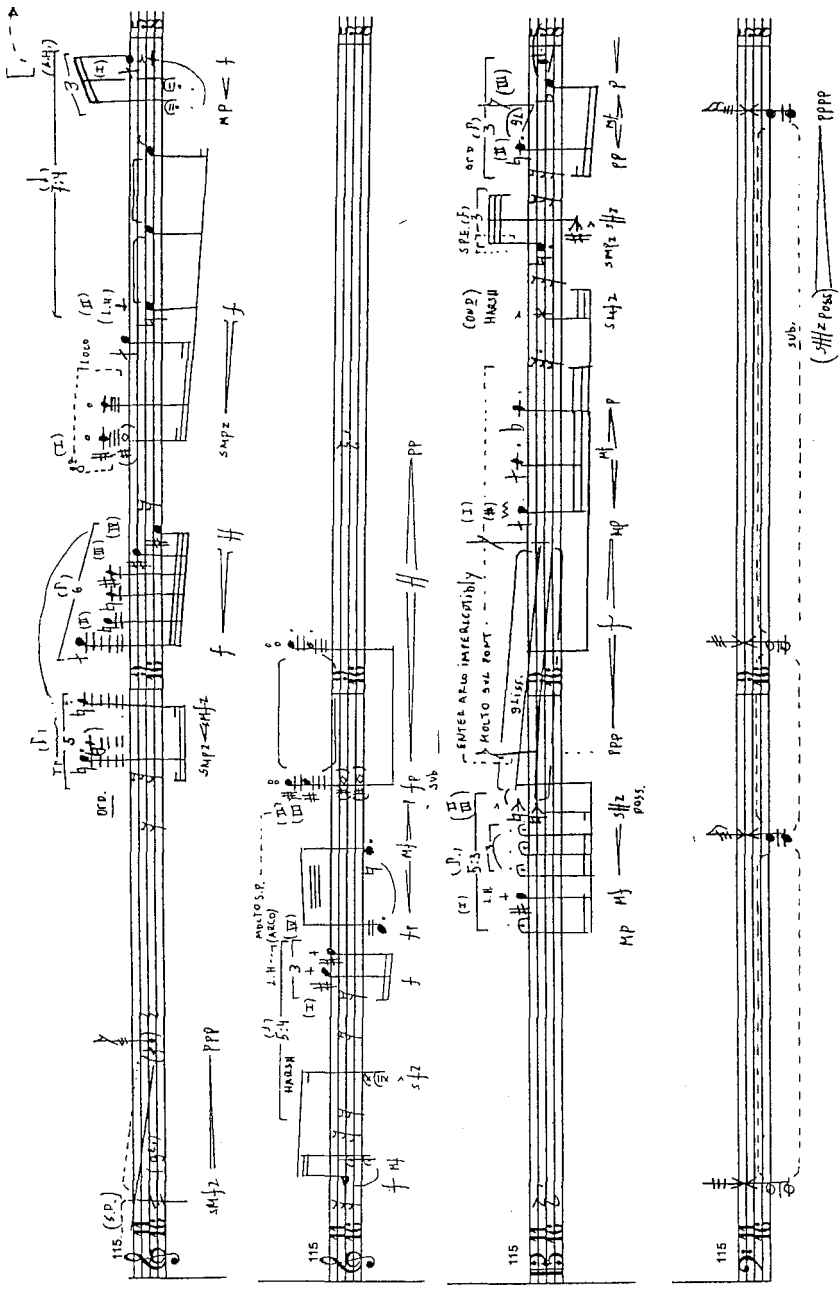


Figure 5 (cont.)

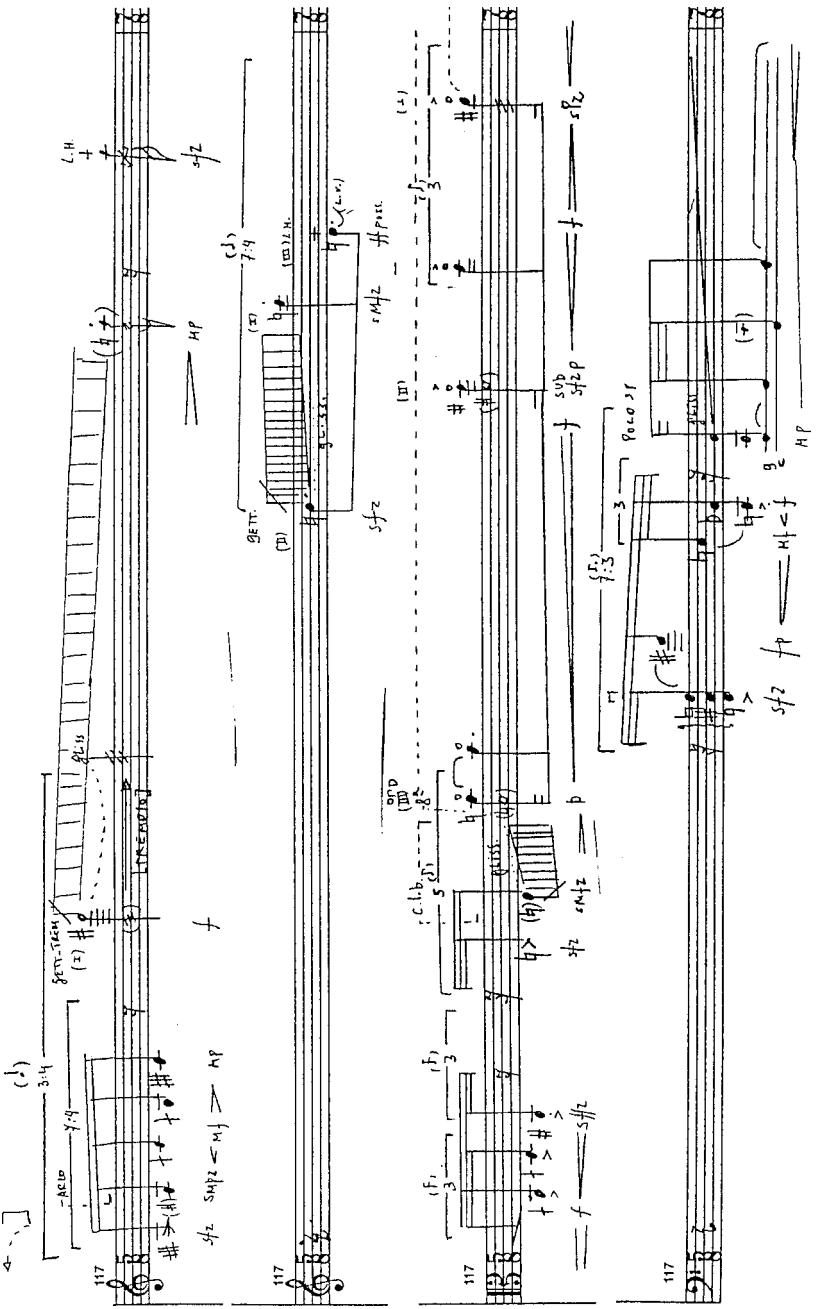


Figure 5 (CONT.)

(twelfth fret) at the sixth string; this note is subsequently plucked by the thumb in a Bartók-like pizzicato, and immediately descends toward the low F♯ in a glissando. (Although the previous description applies to bare-handed techniques, it would also be possible to fit external objects—like a glass or a pencil, a tuning fork or a spoon—into the logic of the gestures, enhancing the gamut of timbral distortions.)

In the *Percussion Studies* series, I wanted to create an idiom that is suitable to the guitar's gestural domain as well as compatible with specific compositional demands. Therefore, in order to switch from a note to any percussive effect and back to a note, it was imperative for the effect to be easily accessible, avoiding, as much as possible, gestural awkwardness. One of my chief aims was to free the hands from each other, allowing a "physically polyphonic" approach to the instrument. Here, a set of possible effects or notes played with just one of the hands might come into the foreground. In that way, it would be possible to create an agile and interchangeable set of effects for each hand.

The obvious advantage of freeing the hands is that technical impossibilities of traditional playing technique (like wide and fast jumps) are easily managed. We could therefore build a map that would function as a practical, if somewhat arbitrary, mechanism to enhance the composer's ability to foresee the next gestural step. If we stipulate a series of right- and left-hand movements that are independent of each other, we can move from one type of playing to the next without interrupting the piece's flow. Figures 7a–7k constitute a brief, descriptive guide to some of the effects that I call the "Tapping Technique"—independent effects for the right and left hands.

Considering the musical material "from scratch" is my characteristic way of establishing meaning for the elements of discourse and of finding the necessary friction to inaugurate a language that is ultimately the carrier of

Figure 6: *Percussion Study II,* for solo guitar (1993), m. 24.

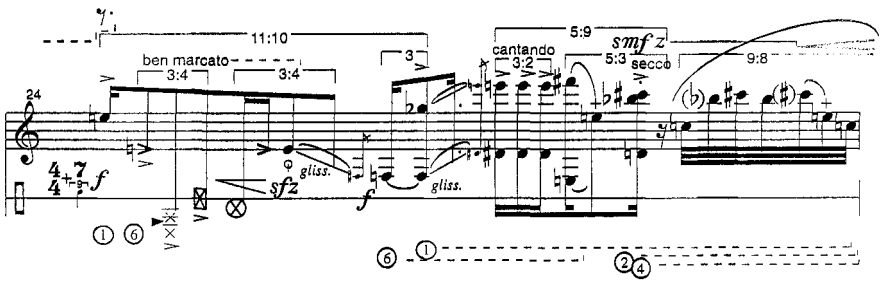


Figure 7a: Right-hand thumb: Strike the soundboard above the sound hole with the side (bone) of the thumb. This action should generally be done above the sound hole.

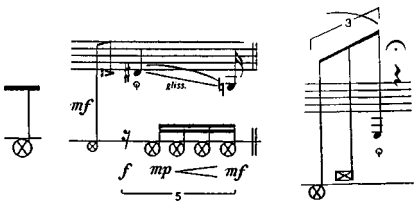


Figure 7b: Right-hand thumb/metallic: Strike both E and A (bass) strings against the frets with the right-hand thumb. This action should be done between the end of the neck and the outer circle of the sound hole region.

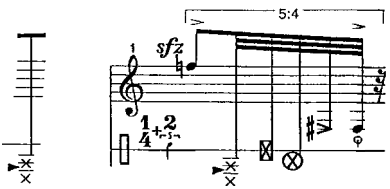


Figure 7c: Outstretched right hand: Strike the soundboard in its lower part, between the sound hole and bridge, with the right hand.

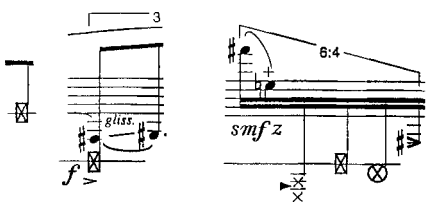


Figure 7d: Right-hand nails: Nail attacks (arpeggio-like). The thumb plays at the lower part of the soundboard, close to the bottom side.

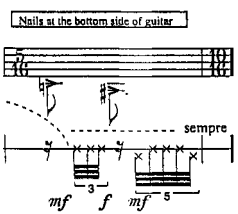


Figure 7e: Bartók thumb pizzicato (right hand): Pull the E (bass) string with the thumb alone. Do not use index finger.

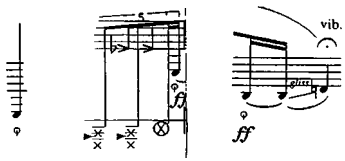


Figure 7f: Left-hand fingers/metallic. Strike both E and A (bass) strings against the frets with the fingers of the left hand.

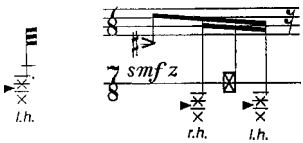


Figure 7g: Left-hand "slap" below the neck: Strike the soundboard below the neck. There is not a specific point to hit, just an indicated area.

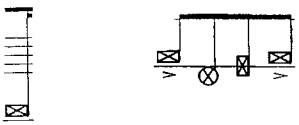


Figure 7h: Left-hand ligado/hammering: The "ligado" (hammering or stroke) is done by hammering the string(s) without the right hand plucking it at the beginning of the sound.

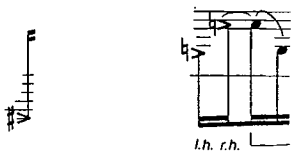


Figure 7i: Left-hand pizzicato: Pluck the string(s) as the right hand does (generally on open string(s) or an open chord). This left-hand gesture uses the same symbol as the left-hand pizzicato for violin.

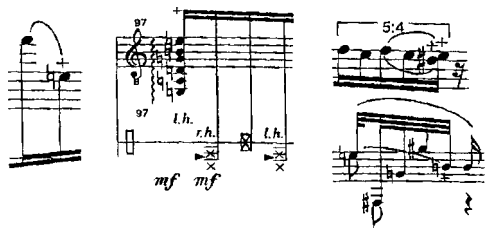


Figure 7j: Left-hand pulling of string off the neck/buzz-like sound: Pull the E2 (bass) or E4 (treble) string off the neck at a specified pitch region, sliding it (glissando), or simply revolving around a specific region of the neck.

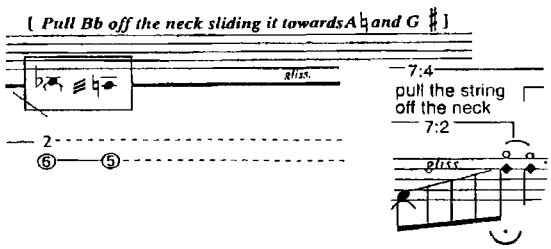
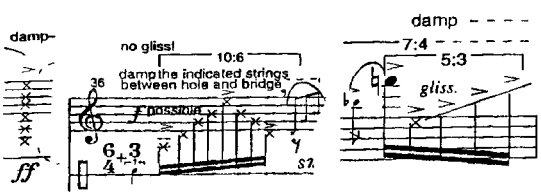


Figure 7k: Left-hand damping (mute): Hold (mute) the strings between soundhole and bridge while arpeggiating or playing the indicated strings with the right hand.



my emotions/reactions. The compromised choices that any composer has to make are engraved on the "a priori of musical terms," be it structural resiliency, patterns of instrumental connection, technical impossibilities, etc. This simply means that in portraying our supposedly "free flow" imagination, we are in truth conforming to parameters of "obstructed" freedom. Even the five-line staff doesn't escape the obvious assumption of staging a promising narrative, however constrained by the *x*- and *y*-axes of temporal/harmonic sequencing.

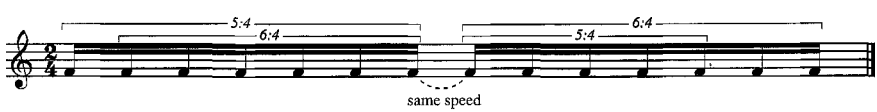
Micro-Metric Modulation: An Introduction

As I developed my research on timbre, I noticed that the mere appropriation of a particular semantic field composed of pitches and noises wouldn't be enough to optimize their differences and similarities. In that sense, I tried to impose complex rhythmic grids on the materials employed (chains of tuplets, compression and enlargement of bars with non-integral/fractional meters,[1] sudden changes of metronome markings, etc.) in order to obtain structural filters or "sieves" that would "rotate" and bring to the surface the elements of the musical discourse at privileged moments of the compositional flux. This way I could reinvest "used" sonic objects with a new iconic potential, making them re-emerge under a multiplicity of metric speeds.

Based on commutative and associative properties[2] that coordinate the unfolding of rhythmic materials, the micro-metric modulation I've developed furthers Elliott Carter's work on metric modulation. It extends the scope of his rhythmic practice insofar as it compresses Carter's metric modulation into a "micro-level" of the beat's possible subdivisions.[3]

The concept of "continuation" (here implying rhythmic equivalency between different metric configurations or non-integral ratios) is crucial if we want to develop a theory of micro-metric modulation. In order to link a rhythmic figure (or previous ratio) to a new one, it is necessary to have equivalent rhythmic speeds on both sides of the ratio chain. Translated to music, we have the following example:

Figure 8



Here, both ratios exchange (top and bottom) positions and the speed resulting from the superimposition of [5:4 - 6:4] ratios (left) is the same as that of the superimposition of [6:4 - 5:4] ratios (right).

Math proof: If MM = 60, for the $\frac{4}{5}\frac{4}{6}$ order position (left-most ratio, fig. 8), we have:

$\frac{60.5}{4} = \frac{300}{4} = 75 \times 6 =$ MM 450;

for the $\frac{4}{6}\frac{4}{5}$ order position (right ratio, fig. 8), we have:

$\frac{60.6}{4} = \frac{360}{4} = 90 \times 5 =$ MM 450 (same as above).

Fractional representation:

a) $\frac{4}{5}\frac{4}{6} = \frac{2}{5}\frac{4}{3} = \frac{8}{15}$ b) $\frac{4}{6}\frac{4}{5} = \frac{4}{3}\frac{2}{5} = \frac{8}{15}$

In the above example, we set our pulse or metronome marking to quarter note = MM 60. Then, each of the quintuplet sixteenths (see far left, fig. 8) will have a speed of MM 300, since they are five times faster than the main beat. Subsequently, we take four quintuplet sixteenths out of these five as our new time span for further subdivision. This time span (a "contracted quarter note") is obtained by subdividing MM 300 by four, setting the speed of this new "quarter note" to MM 75. Now, we simply multiply 75 by 6 in order to reach the final speed of the contracted sixteenth note (or subratio), which is MM 450. If we repeat this operation starting instead with the [6:4 - 5:4] ratio order (at the right, fig. 8), the result of the final speed of the contracted sixteenth note (or subratio) will be the same, MM 450 proving the speed equivalency between both ratios. The second (fractional) proof points to a limit in the subdivision process where numerators and denominators are relatively prime. It reduces the ratio's configuration to its "most-condensed" fractional form, the $\frac{8}{15}$ fraction. This fraction shows the maximum speed available for those specific ratios. Therefore it is possible—through factorization—to write either a nested tuplet ratio (having, sometimes, as many as four levels of subratios) or one unique ratio with only one level of subratio. Thus, a [5:4 - 3:2] two-level ratio is rhythmically equivalent to a [30:16] one-level ratio.

Let us briefly consider some rhythmic possibilities opened up by the micro-metric modulatory system. Starting with the notion of "prolongation," in which rhythms that pertain to different rhythmic configurations

present a common denominator speed, we can think of subdivisions occurring halfway between ratios that belong to distinct metric hierarchies. As shown in figure 9, once we are aware of the rhythmic equivalence between both subratios [5:4 - subratio 3:2] [6:4 - subratio 5:4], we can interpolate any new subdivision (in this case a 7:5 ratio). In fig. 9 both ratios are under the same metronome marking. Figure 10 shows the same operation between complementary ratios under distinct metronome markings.

As we can see in fig. 10, the 7:5 ratio "fills" the 5/16 bar with a faster stream of non-integral sixteenth notes. Hence, an equivalency of speeds between sixteenth notes (non-integral and regular) on both sides of the metronome markings is managed. As with the previous example, we can create a new layer of subdivision midway between both ratios' metric frames. The (arbitrary) 11:6 ratio starts its "run" on a stream of non-integral sixteenth notes crossing to the other side where the sixteenths are regular under a new metronome marking (MM 91). The ratio-crossing illustrated above establishes new insights into possible rhythmic strategies for linking dissimilar configurations or metric tempos.

In my piece for solo harp, *Phalanges,* derived entirely from micro-metric modulation principles, I've used fractional bars to impose a cleavage on normal temporal expectations, and to redirect the sonic discourse to rhythmic impasses (for example, the crossing of subratios between top metric configurations and the shrinking of top ratios in order to be able

Figure 9

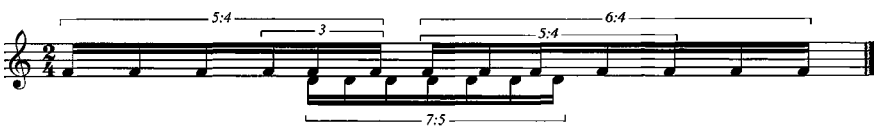


Figure 10

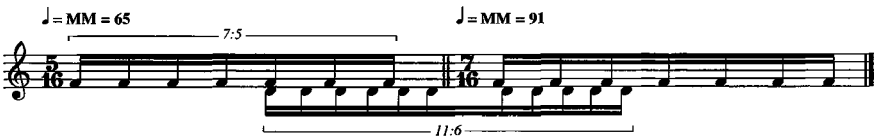
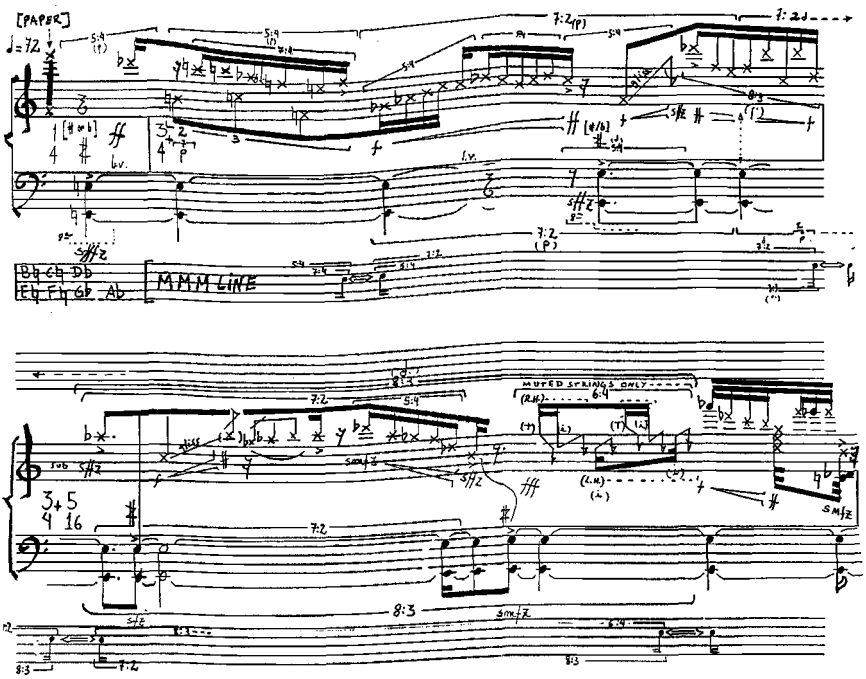


Figure 11: *Phalanges*, for solo harp (1995), beginning: Crossing of subratio [8:3] between top metric configurations.



to use the subratio formed underneath the figure as the new rhythmic bridge). Note the shrinking of the third top ratio at m. 2. (The [8:3] subratio functions as a rhythmic bridge to the new metric configuration at m. 3.)

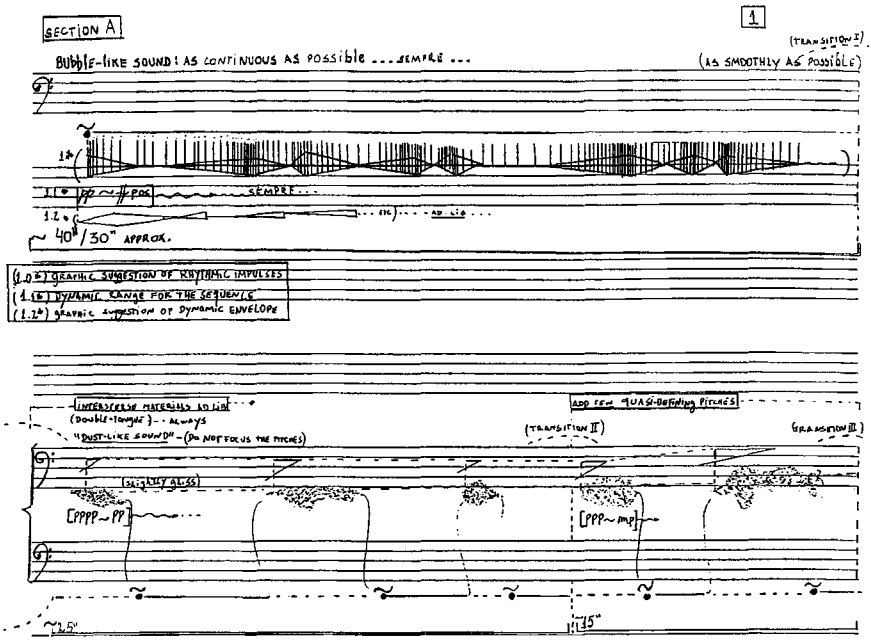
* * *

Between creating *with* sound(s) and creating *within/from* sound(s), lies a deep change in philosophic perspective for the creative act. If the first category unquestionably controls the rhetorical patterns, the maneuvering and coherence of musical strata, the second questions the very existence of the language itself, finding its elements only when deconstructing the basis of a given discourse. On the threshold of a language resides language's resiliency, which means that the archetypes that configure the idiomatic elements of that language postulate themselves outside it. For

example, while the harmonic field is seen as the aggregate of simultaneous aural frequencies, it can also be interpreted, archetypally, as a "field of simultaneities," where heterogeneous materials (not necessarily sonic) could coexist. It is very common, when referring to passages in a composition, to utilize terms that are beyond the scope of the materials deployed. We often think in terms of "texture" (a fabric metaphor) or "densities" or "transparencies" or "rugosity" or "points" (and even—when lacking more immediate definitions—something like "nauseating colors," etc.) in order to apply such categories to a language that, *a priori,* does not contain those elements.

The wish to operate with the whole of the sensory spectrum is a strong determinant of my particular way of conceiving the compositional narrative. For instance, frequently, when composing, I long for the entrance of a "velvety material," or the "sudden sensation of the wind blowing, for a second, against my face," or a color, a shape, a temperature, a smell, etc., instead of a note. I wish I could dispose those elements as part of my compositional palette, controlled by a very fine temporal/rhythmic filter. This notion of "sculptural composing," where "frequencies" of plural fields could coexist, points to a desire of expression that wants to *surpass* the very homogeneity of the aural field. Such a compositional attempt to envelop the linearity of the aural field with a synaesthetic, total-cognitive approach, relates to the brain's neural networks that interlink phenomena of diverse cognitive natures. In music, a nondenotative medium, the correspondence between signifier and signified is nonexistent. The "contrast" between meaning and signifier found in the spoken/written language cannot be imposed on music, a medium that is notoriously self-referential. Therefore, my question as a composer is invested with the frustrating awareness that the medium is deaf for abstractions, implying here the obvious impossibility of music being "heard" as a metaphor, whose hidden meaning could be accessed through something other than surface "noise." However, the network of sensations is also present in the "history" (or perception) of aural correspondences. For instance, the white noise (of the sea? of the wind?) can evoke analogies with "space," "openness," "awareness," "cleanliness," "asceticism," "fever," "foam," "fluff," etc., because this sound is pregnant with experiential associations congenial to the brain's/mind's constructs. The primordial fear, the feeling of hunger, the sense of nostalgia, the experience of risk, the need to evacuate, and so on, are part of our associative history, are proponents of our perceptive trajectory. When we imagine a stone, for example, we conjure up the very sense of "physicality" that the presence of the object provokes in us. In this effort for *reliability,* which *pronounces* the sensation of the object, resides a perceptual bridge between sensory channels of distinct levels. The

Figure 12: *Layers for a Transparent Orgasm,* for solo horn (1990–91), beginning: "bubble-like" effect.



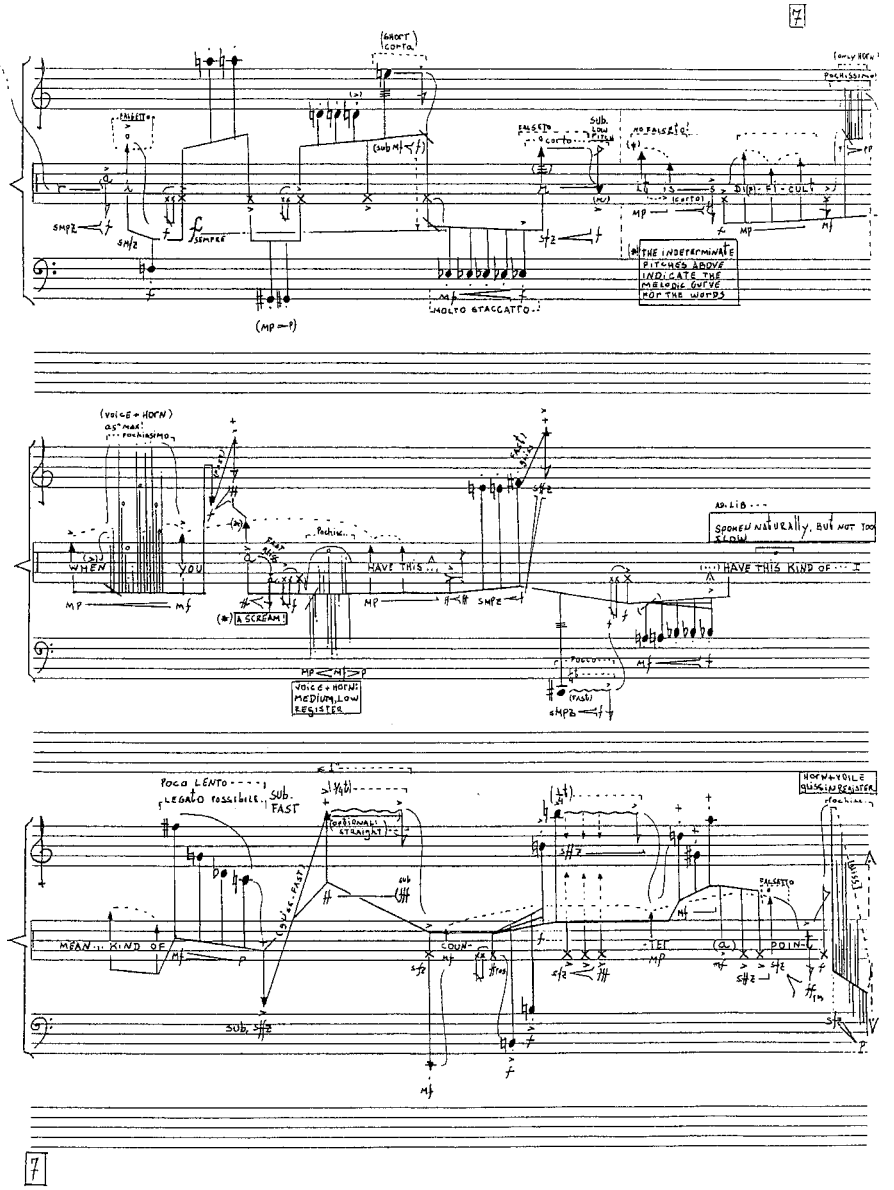
hardness of the stone is but one aspect of its *presence.* Such an archetypal quality tends to develop a kind of "rhizomatous" chain of sensory proximity, such as "compactness," "economy," "brevity," "crispness," etc., each of which, although pointing to more distant "synonyms," tend to preserve, somehow, the original "puncture" or "traces" of the original object. If, in musical terms, the above string of synonyms cannot be perceived as metaphors of narratives, they can, through timbral polarizations, reengage *bodily* associations, "tricking" it with "pre-semantic" sensory qualities. On this basis, it is possible to reconstruct a discourse based not solely on the meaning of its utterances, but on the "irritability" of the senses (through a timbral chain of perceptive "synonyms"), where sound ("hot" sounds, "thin" sounds, "wet" sounds, "transparent" sounds, etc.), far from describing anything, simply *imply, hint, suggest, point*—on the interior of purely aural trajectories—to a prior "sensory gestalt." I like to link or "spread" most of my auditory and visual sensations to complementary ones, embedding them with a tactile, olfactory, and even, sometimes, a gustatory gestalt.

At the beginning of *Layers for a Transparent Orgasm* (see fig. 12), I tried to portray a "gaseous," "bubbling," "wet," "hot," "opaque" atmosphere, in which the sonic elements would be "asphyxiated" by each other's interruptions. The first effect of the piece, which I've called the "bubble-effect," is executed through the constant interruption of the air column by the performer's tongue, creating this "bubbling, pitchless flap." This effect is a very good representative of my compositional intentions. Although I had a programmatic narrative in mind, showing the primitive aspects of an ancient Earth, I tried to evoke this "imaginary landscape" through purely timbral "frictions." I wanted to link the sounds heard, with the previously mentioned sensory qualities, creating some kind of "gestaltian common ground" between them. We know that in the domain of pure sound only the struggle between aural dichotomies is to be heard, or, if I may, "felt," or "tasted." So in order to "reenact" an immediate "archetypal feeling," I had to work with very pronounced textural/timbral categories. Using a wealth of extended techniques blending with the performer's voice, a truly polyrhythmic/polytimbral discourse was created. In the constant "fight" of the materials to be articulated, the very notion of time could be seen as "enveloped" by the rapid coordination of sounds with different "weight" and profile. The "exploded" surface of heterogeneous materials struggling to interact also brings forth, in my opinion, an analogy with the "tactile sensory experience," filling the music with this "quasi-sculptural" character—meaning that the sounds produced by the horn player (her voice and her blowing sounds) present a clear dichotomy of emission, charging perception with sudden dynamic, timbral and rhythmic "bursts" or "peaks."

Therefore, the freedom to think within sound reposits the elements of the discourse as a phenomenological platform for the imagination, unconstrained by the formative elements of a given language.

Although multimedia experiments tend to blur the boundaries of distinct expressive mediums, they fail to connect those mediums precisely because of the natural resistance/"degrees of resiliency" of the materials involved. Different aesthetic mediums or materials, like paint and sound, do not "bridge" naturally, for they lack a common grammar to sustain perceptive and formal cohesiveness. The mere superimposition of materials of heterogeneous fields—e.g., while a video is shown, one artist paints, a dance happens, somebody plays synthesizer; or, the cumulative and antifunctional piling up of "arts" on the opera stage, with its ridiculous pretension of artistic *Weltanshauung*—does not guarantee the appearance of a new art form, but only the pastiche of unprepared, ill-layered, aestheticism. Nonetheless, I believe that the present impasse of the artistic enterprise—with its compartmentalized "disciplines"—can only be solved

Figure 13: *Layers for a Transparent Orgasm,* page 7.



through the appearance of new art forms that embrace, from the start, the unification of our perceptive capacity. Thus, it is necessary to build a "corpus of knowledge" (cognitive, technological, etc.) in order to understand the functional "attachment" of elements from different perceptive fields and the corresponding sensory "reaction" to them. Only then, can we establish the seeds of a new "grammar" and, consequently, new art forms or new "art formats." For example, how can a certain color be transformed or "transferred" into sound spectra or acquire a sudden olfactory "radiance" while maintaining some kind of archetypal association with its original properties? How can we infuse perception with new associative relationships generated by "sensory bridges" that link dichotomous mediums, that won't be noticed as dissociated, merely sequential events, but as part of a kind of "sculptural perceptive experience" unfolding in time (or outside of it)? Submitting materials of heterogeneous fields (possessing diverse "hermeneutic" weights) to techniques of "condensation," "saturation," "metric displacements" (among many others) seems to me to be one of the many possible and valid steps we can take to further our creative enterprises.

Closing Remarks

Finally, I would like to offer some comments on my music's characteristics. The artistic enterprise comprises both joy and frustration. Joy is present because of the sudden capability of a given system to embody self-sufficiency, to be able to translate a conceptual "absolute" into the (concrete) terms of its own language (i.e., to be able to bridge, however pale the resulting "artifact," the medium to the concept, while transcending the medium's limitations). The frustration is due to the inevitable failure of a specific medium to be the carrier of the creative individual's expression. It hints at the fact that the chosen art form doesn't possess the means to accommodate the individual as a whole, because it is just that: an art form. Being peripheral to yourself while trying to define who you are is a tough, uncomfortable, position. For me, this is reflected in my way of dealing with my music. I see creative acts as nothing less than strategies of evasion and refusal of, and defection from, the very elements that define the foundation of any expressive medium. It is exactly at the moment that one enhances a medium's entropic potential (when "refusing" to subscribe to the very elements that constitute it) that the medium starts to "regenerate" itself, regaining a *healthier* "profile." This "invitation" for a given system to renew itself, to act against a background of accepted techniques and aesthetic polarizations is at the root of any authentic artistic enterprise. If the artist is a representative of social "misprint," all art can be viewed as sociological "fungus," which grows and feeds in the cracks

between regulated/accepted societal mechanisms. Art is at the end of a behavioral chain, where *dis-satisfaction* leads to a desire to *blur* social boundaries imposed on us from outside and from within. Because of the difficulty of articulating new social meanings with the unyielding fabric of social structures/"scriptures," we are more likely to overcome such stressful constraints when "transposing" them to a more flexible medium. Therefore, I like to think that one of the ultimate purposes of art is to rehearse a multiplicity of "states of affairs," not possible or not yet represented in the rest of contemporary society. Its essence is Dionysian and conflicted—whether showing calm or "blasted" surfaces—since it acquires potency only at the point of rupture with its own grammar. Thus, complexity is not a contextual platform, allowed to exist according to our choices, but is the very precondition of artistic speculation.

When, in my music, I impose methodological grids—through the use of "ergonomic" filters, timbral sieves, complex rhythms, etc.—mirroring the complex nature of the sonic event, it is less to "mimic" its multidimensional nature than to reveal the presumptuous fallacy of the "finished" text. I always deeply mistrust a complete anything, since I understand that the "noises of the sea" or a "dog's bark," for instance, are but prolongations of the experiential self "shooting" through modes or states of being. Composition, in this context, is seen as an accumulation of "frequential sediments," a place of "charged mistrust," a trace—and it is most exposed when it gravitates to the threshold of its own "opacity." What I am articulating is a moral stance that, analogous to my music's procedures, stresses that the artistic project should be a withdrawing of the ego, an attempt to bring forth what in us is genuine commitment. (My attitude parallels the discipline exhibited by the Buddhist monks who make the ultra-detailed sand mandalas that are immediately destroyed as soon as they are finished—a dictum that might be stated as something like, "perfect the self, reject the medium.") Hence, my present disregard for any historic dissemblance, with its petty curricular deployment of "successful" personalities and other superlative irrelevancies, which is detrimental to distinct (less successful or simply different?) accomplishments. I am looking for a self-sufficient trajectory for my life, beyond historical/hysterical idiosyncrasies. I don't care to belong to any generational "-ism," although I know that I'm not beyond "demarcation." So, why this primary shyness or aesthetic intransigence? Perhaps I don't want to be fully accepted. Maintaining some kind of contempt or "edge"—in sum, a "potential dereliction" towards accepted modes of artistic decency—is a necessary stand to infuse the creative ethos with a kind of "threshold integrity" in which questioning (yourself) is not totally devoid of sense. Even being identified as a composer by this incongruent, name-driven, industry-oriented, hierarchical society is a

derogatory labeling of who I am. Regardless of functional attachments, this "refusal" is the very precondition of artistic mobility. Rather than infuse my music with acerbic pathos, which guarantees its quality, this refusal throws me into the middle of blind confrontations between the self and aesthetic choices. Following this line of thought, this "quasi-stoical" attitude can be extended to question the very performance spaces that are reserved for the presentation of (new) music in general. The protected environment of new music, with its proper public and selected spaces, can be viewed, on the one hand, as a cryptic but inevitable pocket of resistance opposing the tendencies of the music industry; or, on the other hand, as an asphyxiating convoy of "philistine" expectations, where new aesthetic forms are just subsets of a canonical behavior. "We" are more prone to disappointments if the "new voice" is not recognizable at all! This type of contradiction is intolerable, for it indicates a perverse mechanism that smothers freedom with its incestuous aesthetic traits. Therefore, if the musical canon is undesirable and the market unattainable, a viable attitude is to boycott such expectations that falsely presuppose where and when this or that music should be performed. Venues considered improper *a priori* for a certain type of music can be cast as "fertile ground" for undefined aesthetic proclivities. The fear is not in the music but in the composer who works with a certain frame of auditory reference in mind. This fear to "throw" the music/yourself "into the world" is a very convenient failing because it hides behind the fulfillment of known expectations. It misdirects the creative focus toward a rather timid goal since it places more importance on being approved than on being "unfitted."

Obviously it is not that simple. I'm not naive. You don't become an outsider by decision. Life's crazy. Who knows what brings you here? I understand that the formation of groups or "artistic sects" is sometimes a necessary strategy to expose works that otherwise wouldn't see the light of day. But these groups also become part of the convenient circuit of grants, academia, and sponsored events and personalities.

Enough for now.

Notes

1. Henry Cowell, in his book *New Musical Resources,* wrote: "Our system of notation is incapable of representing any except the most primary divisions of the whole note. It becomes evident that . . . new ways of writing must be devised. . . . We are dealing, of course, not with three-fourths metre, five-fourths metre, etc., but with a whole note divided into three or five equal parts" (1996: 56). Ferneyhough uses what he terms "irrational time signatures." It is based on the same principle used by Cowell, the subdivision of the whole note. Thus, "2/10 signifies a bar composed of two beats each of which is equal to one tenth of a

semibreve" (Third String Quartet, performance notes). I prefer the use of the word "non-integral" instead of "irrational" to define the types of metric materials that are expressed through fractional numbers and cannot be expressed as an integer—ratios such as [5:4], expressed fractionally as 4/5, [30:16] = 16/30, [7:5] = 5/7, etc. Below, a short definition of non-integral numbers:

1.1. We call z an integer if it is one of {..., −2, −1, 0, 1, 2, 3, 4, ...}. Note: Integers are either natural numbers, negatives of natural numbers, or 0.

1.2. We call x a rational number if it can be expressed as $x = \frac{p}{q}$ where p and q are integers. Examples of rational numbers are 1/2, 3 (= 3/1), −5, 1/3, .11111111111111 ... (= 1/9), etc.

1.3. We call y irrational if it cannot be expressed as a quotient of two integers. Examples: pi = 3.14159265...; e = 2.71828...; the square root of 2 = 1.414213562...; etc.

1.4. Rational numbers come in two varieties: a) Integral (e.g., 3 or 6), or b) Non-integral (e.g., 5/6 or 7/9).

1.5. Therefore, a non-integral rational number is a rational number x that cannot be expressed as an integer. We also call such numbers *fractional.*

2. The commutative property for multiplication states that the order in which two numbers are multiplied does not affect the product. Thus, $a \times b = b \times a$. The associative property of multiplication states that when three numbers are multiplied the products are the same no matter how the factors are grouped. Thus, $(a \times b) \times c = a \times (b \times c)$. In musical terms, these two properties complement each other because the factorization of a ratio can be expressed in many levels of rhythmic contractions. The commutative property will ensure the same result for ratios up to two levels, while the associative property will guarantee that the order position of the (many) factors will not affect the final product.

3. Micro-metric modulation presents specific ways to work with complex rhythmic materials. Its primary intention is to allow the performer to see rhythmic relationships that are not easily discernible at first sight, since they are "buried" under contrasting rhythmic configurations on the musical surface. I am also implying that you *cannot work* with complex rhythms by adopting an arbitrary permutational standpoint. Observe a jazz drummer. Whatever he plays, rhythmically, is the result of his complex improvisation pumping new rhythms out of previous ones. It all springs from motoric constraints that are "conditioned" or "enveloped" by physical laws. So, even if the brain cannot handle the "immediate math" of a new rhythm (it helps to know that a particle of what you've just played is in the same speed of what will happen next, rhythmically speaking), the composer—being aware of a common-denominator relationship between two rhythmic points—can provide a feasible route for the "hands to handle." The constant use of energy to dislocate rhythmic cells obeys the same physical laws that act upon the resultant sound. Therefore, it is easy to conclude that every defined rhythmic cell that is played is "caused" or propelled by something that came before—and not from an extraneous, unrelated rhythmic entity. That is the principle of metric and micro-metric modulation. These ideas are amply discussed in my doctoral dissertation (see Kampela 1998).

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Coming to Terms with Music as Protest and Remembrance: One Composer's Story

By Jonathan D. Kramer

I have always been skeptical of musical meaning. While I value music's meanings in a personal and private sense, I have not been comfortable with the thought that my meanings have much to do with anyone else's. When I was first learning to enjoy and understand music during my adolescence, I was a disbeliever concerning the enterprise of program music: I preferred not to know anything about the escapades of Till Eulenspiegel, or about Beethoven's pastoral countryside, or about Tchaikovsky's brushes with fate. I preferred to ignore the text in choral music, and I was happy to avoid composing solo songs completely.

My encounter with Wimsatt and Beardsley's "intentional fallacy"[1] during my college years resonated with my prejudices. As I understood their influential essay, it allowed for an artist to have an intensely personal, emotional, and meaningful relationship to his or her works, yet the nature of that symbiosis meant little to an audience. What mattered was the work itself, not the process it had undergone to become what it was.

This message seemed to be reinforced by every one of my ten (!) composition teachers,[2] none of whom to my recollection ever talked about musical signification or affect. Or, if they did mention such academically unpopular notions, I was not listening!

When I was in graduate school, I was deeply impressed by Leonard Meyer's new book, *Music, the Arts, and Ideas* (1967). The chapters "Meaning in Music and Information Theory" and "Some Remarks on Value and Greatness in Music" in particular hit home. Meyer reinforced my belief that music is indeed meaningful, even profound, but in ways that have little to do with sunsets. He allows for what he calls designative or referential meaning, but the chapters are mainly about embodied or syntactic meaning. So, I felt, listeners may have their associations outside of music, but its *real* significance lies internally, with the notes, rhythms, timbres, etc., and the effects they produce.

Produce? Yes, at the time (late 1960s) I accepted as self-evident that music communicates to listeners, and shapes their experiences. It was not until considerably later that I began to credit the listener as a *source* (not just a receptor) of musical signification.

As the 1980s gave way to the '90s, I became aware of semiotics and of postmodern thinking. Kofi Agawu's book *Playing with Signs* (1991) outlined a way that certain music, under certain cultural conditions and in certain

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social contexts, could indeed refer outside itself. I was beginning to accept referentiality as respectable, and as worthy of serious attention by music scholars. And, as I read several books and articles on postmodernism, I was particularly taken with the idea that the locus of musical significance is not the composer, and not the composition, but the listener. I began to see meaning as resulting from a complex interaction of composer, score, editor, performer, performance, recording engineer, playback system, and—above all—listener. This idea was reinforced as I discovered that people generally recognize that there are intertextual references in my compositions, but they often disagree about just what is being referenced.[3] A person's prior listening experiences strongly shape what he or she hears in a piece of music. Musical sense, even in the face of apparently direct references to other music, rests squarely with the listener.[4]

Since the 1970s, when I taught at Yale, I have thought of myself as a theorist as well as a composer. In fact, I first came to Columbia (from the University of Cincinnati, in 1988) as a theorist, not as a composer. Despite an undergraduate background as a mathematics major, and despite a genuine fascination with what is nowadays called formalist theory, I gravitated toward the humanistic in my own writings. Indeed, questions of musical purport, though rarely addressed directly, underlie a lot of what I have written. I have always cautiously tried to keep my theoretical ideas and my compositional practices separate. I felt that what I saw as problematic in the work of some of my formalist colleagues—the intellectual poverty of trying to turn an analytic system into a compositional system—could be just as risky for a humanist theorist. Thus, for example, I never deliberately composed in accordance with any of the musical temporalities elucidated in my book *The Time of Music* (1988). As a result of cultivating this split personality, my compositional aesthetics and my theoretical concerns developed somewhat separately. As a composer, I did not think too directly about how or what music means. Even as I came gradually to accept referentiality, semiotics, and the locus of meaning in listeners, I usually ignored these issues while composing—except when forced by circumstances to confront them head on.

Aware that it had been used for political purposes throughout history, I had always thought of music being made political not by its inherent nature but by how it was used, what verbal text or at least title it had, and the social context in which it was presented. Three times, at thirteen-year intervals, conditions forced me directly to embrace music as politics—specifically the politics of protest and remembrance. Each time, I was asked to compose music for political or memorial performances. On these occasions I thought hard about musical meaning, but not in any abstract or theoretical manner. I agreed to compose music for specific occasions

despite uneasiness with the idea that music can convey a message of protest (1970), or that the sense of a verbal text can be shaped by the music to which it is sung (1983), or that music can help people deal with grief (1996). I simply wrote the music I needed to write, feeling *what* it meant (to me) but not pondering too much about *how* it meant. Today, having witnessed audiences apparently finding deep meaning in this music, I still do not fully understand whether or how their meaning is related to my notes and rhythms.

Looking back on these three compositions now, I understand that—despite their similar aesthetic stances, which has led me to discuss them in the same article—they had rather different purposes. *Requiem for the Innocent* was my protest piece against the United States' involvement in the Vietnam War. I hoped it would bring people to take an active role in the antiwar movement. The dedication says it all:

> Dedicated to those who have died and will die—senselessly, needlessly —in Southeast Asia, in our streets, on our campuses.
>
> Written in response to recent and continual escalations in the war our government and its powerful institutions are waging against small, distant nations, racial minorities, and peaceful dissenters.

The "racial minorities" seem somewhat gratuitous in this context. Their oppression was nothing less than real in 1970, but that was hardly the impetus behind the composition or performance of *Requiem.*

Unlike *Requiem for the Innocent,* my composition *No Beginning, No End* memorialized not a huge group of people, such as the victims of a war, but rather 24 Soviet Jewish artists and intellectuals persecuted in 1948–52, and in particular one poet among them. Another difference is that virtually everyone hearing my *Requiem* in the San Francisco area in 1970 already understood the United States' involvement in Vietnam, but few people in the 1983 Cincinnati audience of *No Beginning* had previously known of the plight of the poets the Soviets had murdered. My change of focus from a large to a limited group of people continued in *Remembrance of a People* (1996), which did not try to inform its audiences about the Holocaust, and did not commemorate particular victims, but was a personal outpouring of *my* feelings about the Holocaust. As I had grappled with questions of musical meaning over many years, I seemed to have reached a point where I was able to give musical voice to my own feelings about tragic events in the world.

These pieces were created under different circumstances. *Requiem for the Innocent* was made during one intense night of composing. *No Beginning, No End* required nearly nine months, during which I divided my

composing time between it and a more abstract orchestral work, *Moments in and out of Time.* I composed *Remembrance* during an eleven-month period, while I was so deeply involved in its issues that I kept an extensive diary, chronicling my progress and my changing attitudes toward what the music was trying to accomplish. That diary is excerpted toward the end of this article. Perhaps tellingly, *Remembrance,* like *Requiem,* is dedicated to victims ("To those who died, and those who lived") whereas *No Beginning* is dedicated to the wife of the man who commissioned it. Neither *Requiem* nor *Remembrance* was commissioned.

Has composing these three pieces and nurturing them through several performances affected my attitude toward music's extramusical meanings? Perhaps to some extent, but I remain dubious of music's ability to communicate specific thoughts, ideas, or images. Yet I do know—and these pieces have reinforced this belief—that listening to music can be a powerful experience, evoking real and raw emotions, sometimes associated with specific events and ideas outside the music itself. That this is possible I do believe, although I doubted it for many years. But *how* this is possible I still feel to be the major unexplained mystery of the musical art.

Today I still place some credence in the idea, derived from Wimsatt and Beardsley, that an audience's perceived meaning depends more on what and how a piece of music is than on how it came to be. This notion is reinforced by Jean-Jacques Nattiez's (1990) well-known tripartition of music's meaning into three levels: that of the creator, that of the work itself, and that of the perceiver. My concern with musical signification can be understood as an attempt to bridge the gulf between my composer's meaning and other people's listeners' meanings. In a thoroughly postmodern manner, I believe that the listener's meaning depends on what goes on inside the hearer. What happens in the perceiver's mind is influenced by the sounds out there, to be sure: what enters the listener's ears is simply sound waves, which are then magically transformed into musical experience and meaning. The sound waves that enter the listener are more or less constant from one person to the next, but the experience and the meaning are not identical, because each mind has different abilities and is differently informed by previous life experiences. However much I tried to reach out to listeners in the music discussed in this article, I know that their experiences are ultimately their own. Hence I do not have too much to say about the reception of these compositions. Often audiences seem deeply affected by the music, for reasons that have to do not only with themselves but also with the contexts in which the music was received. My compositional structures no doubt have some impact on the listeners' responses, but I cannot assess the contribution to experiential meaning of what I composed, of the context in which the music was performed and heard, or of the inner

thoughts of each hearer. Some people talk to me and tell me that they were moved, and sometimes their tears prove them right, but they have never been particularly articulate about the nature of their emotions, or about what it was in the music that allegedly triggered their responses. This, I find, to be a composer's dilemma: never really to know what meanings listeners have constructed around or pulled out of their works.

This article discusses the cultural and social contexts of these pieces, my own relationship to these pieces as expressions of personal feelings, and the compositional techniques used in the service of these expressions. But it does not and cannot discuss in any depth what this music has meant to others, nor just what it has contributed to the deep emotions some listeners have experienced in its presence.

My writing about the political purposes behind these pieces and about the compositional devices used in certain passages may at first seem to fall into the intentional fallacy: if what counts is listeners' responses to the music itself, not what caused it to become what it is, why should anyone care about the composer's personal or technical concerns? But this essay is not about listeners of this music, despite my celebration of their creativity and their centrality as the locus of musical meaning. The essay is about "poietics" (to use Nattiez's term). It tries to relate how and why I chose to write these particular pieces, and what they meant to me, in particular in the context of my unending quest to understand musical meaning.

Thus far this essay has outlined—rather incompletely—the evolution of one aspect of my musical thinking. The remainder will chronicle how the composer in me dealt with tangible issues of musical import. I was, and still am, acutely aware of contradictions between how the composer and the theorist within me consider questions of meaning. I do not think that I have resolved these conflicts, nor do I think that I ever will. But discussing them side-by-side can at least clarify the issues, and show the way one composer-theorist thinks about what may be the most important question in music.

Requiem for the Innocent
for orchestra

It was the spring of 1970. I had finished my doctorate at the University of California in Berkeley, where the Music Department had invited me to stay on one year, during which I taught two harmony courses and a graduate seminar. As had been the case constantly throughout the late '60s, Berkeley was a hotbed of political unrest. It seemed that every other week someone was calling for the university to be shut down in protest against some horrible injustice. Some of these protests were powerful statements in support of major causes; others were simply college students acting out their frustrations.

In the first week of May 1970, the National Guard was called onto the campus at Kent State University, near Cleveland. Four students, believed to be political protesters, were gunned down. An uproar of protest arose on campuses nationwide. Naturally, we in Berkeley heard impassioned pleas to close the university. How could we go on with the business of education when students were being murdered for protesting against our young men being sent off to die in Vietnam?

Cooler heads prevailed. After a few days of unrest, the campus community decided to keep its gates open, but to redirect the resources of the university toward stopping the war. Until strategy was set, classes were suspended. Everyone stayed away from school. One Friday afternoon, the music faculty met at the home of the chairman, Daniel Heartz, high up in the Berkeley hills. Most of the faculty was cautious, but two firebrands—musicologist Joseph Kerman and conductor Michael Senturia—swayed opinion.

We ultimately decided that the music department's ensembles would go into the community, set up in unlikely locations, and play concerts. Thus, people in the terminal of the San Francisco airport would hear a string quartet, people leaving church on Sunday would find a chorus singing in a parking lot, and shoppers would discover a band playing outside a mall. Once an audience would gather, the conductor would tell them that this concert was being performed in memory of those who had died and continue to die in Southeast Asia. It would be hoped that the audiences would agree that the war must be stopped. They would be urged to write protest letters to their representatives in Washington. Tables would be set up with stationery, stamps, and names and addresses. It was hoped that these efforts would turn public opinion against the war and would help get the message heard in Washington.

We agreed to try this plan. Music theory classes would supply arrangements and copy parts, and all sorts of performing groups would provide concerts. Mike Senturia, the conductor, said he would like someone to write a commemorative piece for the orchestra to play during all of its concerts. After the meeting I went up to him and said that I would like to compose it. When did he need it, I asked. "We start rehearsing tomorrow morning at 10:00 a.m.," he replied straightfaced.

My son Zachary was then three weeks old, and my wife Norma was recovering from his Caesarian birth. I hired a nurse to help them for the night, and I locked myself in a classroom at school. Eighteen hours later, I emerged with a piece—composed, orchestrated, and completely copied. I called it *Requiem for the Innocent.* It is three minutes long.

How had I done it? There had been no time to plan, to think, to develop ideas or techniques. I simply wrote what I felt. I used some parts of other

pieces of mine alongside freshly composed material. Stylistically it was like other things I had been working on, a style closer perhaps to that of Berg than of any other well-known composer. I wrote in this style because that was comfortable, and there was no time for discomfort. The idiom was, conveniently, appropriate to an expression of anguish. The unresolved dissonances, the frequent changes of orchestral timbre, the angular lines, and the atonality were fitting for such music. One particularly gripping passage piles notes upon one another in a gradually building semitone cluster—not the most subtle portrayal of antiwar sentiments, perhaps, but effective.

It would be convenient to be able to say that the idiom of this piece was part of its expression, and that I turned to expressionistic atonality because I felt it was the inescapable language for the expression of antiwar protest and national grief in music. But in fact, I had only eighteen hours to compose, orchestrate, and copy parts. There was no time to sort through questions of the possible political associations of this (or any) musical style. Thus, there was neither time nor inclination to innovate that night. The piece just had to be written, and so it was conceived in a style I knew well enough to work within rapidly. I walked bleary-eyed into the rehearsal the next morning and handed Mike the score and parts. Twenty-four hours before the rehearsal began, I had not even known that I was going to compose the piece. A day later it was heard at a public concert in Merritt Park in downtown Oakland.[5] The University of California Symphony played *Requiem for the Innocent* several more times in various locations around the Bay Area.

Did this music cause people to change their minds about the United States' involvement in Vietnam? This proposition seems most unlikely. Could three minutes of untexted music alter anyone's political beliefs? I doubt it. Perhaps the events—the concerts—helped to sway public opinion, but it would be naïve to suggest a direct political consequence to my music. I wrote it because I had to. The orchestra played it because they needed to. People heard it because they presumably wanted to. Beyond those events, I cannot say anything about its impact.

Occasionally I have tried to compose another piece in eighteen hours. I have never been able to do so. It is impossible! Only because I was deeply involved in a cause, only because I thought my piece might actually contribute in some small way to saving lives and ending national lunacy—only under such circumstances could I compose so feverishly. I felt good. And then I felt bad about feeling good. People were dying in Vietnam, and I was composing music in Berkeley. We all felt we were doing something, but nonetheless the war continued for another four years. Perhaps we were indulging ourselves, or perhaps we were just scurrying around so that

we would not have to face up to our inability to change our country's course.

The piece seems tied to the occasion. It was played once again, several years later, by the University of Vermont Symphony under Thomas L. Read, who was interested in it not because he wanted to program a political piece but because he was searching for a short composition by an American composer. How ironic that this music, which some people would have dismissed as anti-American in 1970, became a symbol of American nationalism in 1975! It somehow no longer had the impact it had had in 1970. I have subsequently tried to put it into an appropriate musical context, to frame it with two companion pieces to make a suite of reasonable length. I thought: the piece ought to be heard again, it ought to be saved, but each time I tried I found myself ambivalent. Should this music go into the world as simply a brief symphonic composition with an interesting history, or should it be forever in the past, part of a time that now, thankfully, is long ago?

No Beginning, No End
for chorus and orchestra

No Beginning, No End was conceived for a 1983 concert commemorating fifteen[6] Soviet Jewish poets, intellectuals, and leaders who, after a prolonged "investigation" and trumped-up trial, had been executed on orders from Stalin in 1952. Stalin's oppression of the Jews and of their artists may not be as well known as other modern atrocities, but it was nonetheless typical. All too often a totalitarian regime seeks to control a minority by silencing its cultural leaders. Intellectuals and artists are prime targets. They who have the power and the courage to speak out against injustice are the first to die. Thus the plight of the Soviet Yiddish poets is not unique. Their suffering is symbolic of the suffering of many artists who have dared to protest in times of enforced silence.

Three composers living in the Cincinnati area—Philip Koplow, Bonia Shur, and I—produced the "Night of the Murdered Poets" concert in order to help people remember these events.[7] We used our art and that of the murdered poets to plead for justice, tolerance, and freedom. Can music make such pleas? Perhaps not on its own, but with a text and in a concert devoted to a human-rights theme, music can indeed call attention to and cry out against injustice. Thus our concert was both a memorial to the victims and a celebration of the indestructibility of art, culture, and truth. Several years after this concert, in an era that has seen totalitarian regimes fall, we may think that such protests are no longer necessary. Not true! It is imperative that we always remember what those with too much power and too much hatred are capable of doing.

I chose to set a verse by one of the ill-fated poets, Peretz Markish. It was fascinating and agonizing for me to learn the story of his life and death. His first collection of poetry, *Thresholds,* appeared in 1919, when he was 23. It includes the untitled poem that forms the text of *No Beginning, No End:*

I don't know whether I'm at home
or homeless.
I'm running, my shirt
unbuttons, no bounds, nobody
holds me, no beginning,
no end
my body is foam
smelling of wind

NOW
is my name. I spread my arms, my hands
pierce the extremes
of what is. I'm letting my eyes roam around
and do their drinking from the foundations
of the world

eyes wild, shirt ballooning,
my hands separated by the world, I don't know
if I have a home
or have a homelessness,
or am a beginning or an end

After moving to Russia, Markish encountered the government's systematic attempt to subjugate Yiddish literature to the dictates of Socialist Realism. Despite government opposition to attempts to create a Soviet Yiddish culture and literature, Markish established himself as the leading Russian Jewish writer. In 1939 he wrote poems of anguish over the occupation of Poland by the Nazis.

Soon the German threat came closer to home: Hitler invaded Russia in 1941. When the Germans attacked the city of Vilnius in Lithuania (which was then part of the USSR) the following year, the Jews of that city, who had been trained in the Red Army and who believed in the Russian struggle against the Nazis, were ready to fight and even to die. They thought they were involved in a war for the survival of their culture. Little did they realize that there was an enemy within Russia that would eventually take over the oppression of Jews from the defeated Germans.

Two youths courageously led the first assault on a German ammunition supply on the outskirts of Vilnius. Poet Hirsch Glick wrote of these youths' valor in his "Partisan Song," set to a traditional Russian folk melody. We three composers all agreed to use this tune in our Murdered Poets compositions. It forms the basis of three untexted interludes in *No Beginning, No End.* Figure 1 shows it in its most direct appearance, near the end of the piece, where it is presented by the chorus humming wordlessly, doubled in strings and winds. The linearly conceived harmonization is not far from a traditional treatment, but with some pungent yet diatonic dissonances added.

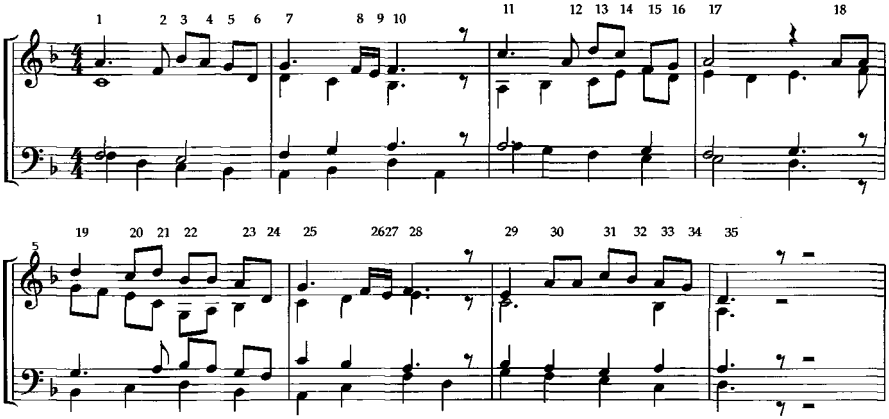
Soon after the German invasion of Russia, Stalin implemented an evil plan to use the Jews to help the war effort. Temporarily setting aside his anti-Semitism, he formed the Jewish Anti-Fascist Committee. Peretz Markish and several other prominent writers joined the committee in what they perceived to be a concrete way to combat the greatest enemy of the Jewish people—Hitler's fascism. Two committee members traveled to the United States, where they succeeded in raising over three million dollars for the Soviet war effort.[8]

The war ended in 1945, and Stalin turned his attention toward rebuilding his country. One of his programs called for the promotion of an intense national pride that tolerated no expressions of individuality. By 1948 the Jewish solidarity that had helped Stalin during the war was seen as a threat to Russian nationalism. Jews joined other victims of the Soviet campaign against "rootless cosmopolitanism."

Stalin went after artists, intellectuals, and cultural leaders with a particular vehemence. He understood the power of art to sustain a people, and he feared that the truth about how he had used the Jews during the war and was now trying to destroy them would be spread by their artists. Stalin was clever—he knew that the way to destroy a people was to attack its cultural leaders. Thus, on 13 January 1948 the Soviet secret police killed the revered Jewish actor Solomon Mikhoels (see endnote 8). Markish's outspoken poem protesting the murder of Mikhoels made the poet a prime target in Russia. He was among the hundreds of writers, poets, artists, and musicians arrested in 1948, the year the Anti-Fascist Committee was disbanded. Soon thereafter, Yiddish publishing houses, newspapers, libraries, schools, and theaters were closed. 217 writers and poets, 108 actors, 87 painters and sculptors, and 19 musicians were sent to labor camps. Their families were exiled or left with no means of support. Many of those arrested died in the camps.

Markish spent his last four years under constant torture and "interrogation" in Moscow's Lubianka Prison, as the case against him and his colleagues was carefully constructed. His "guilt" was preordained. An eyewit-

Figure 1: "Partisan Song," as it appears in *No Beginning, No End,* mm. 285–92.



ness described the years of imprisonment: "Markish could no longer stand and was reduced to crawling on all fours. On one occasion I was unable to recognize him—mangled, swollen, bloody. Despite the frost of December 1949, he had no shoes. He was so mutilated, however, that he was unable to feel the cold of his cell. A young Jewish boy, who shared the cell with him, fed him and tended his wounds."

Markish was one of the 15 Jewish cultural leaders brought to "trial" in Moscow on 11 July 1952. They were charged with being enemies of the USSR, agents of American imperialism, bourgeois nationalist Zionists, and rebels who sought by force to establish their own Jewish national Zionist republic. These charges are tragically ironic, because the accused included those who, as members of the wartime Anti-Fascist Committee, had worked hardest for the cause of Soviet nationalism. The defendants refused to plead guilty. They recanted the "confessions" they had been forced to sign. Markish courageously called his persecutors the real criminals. Thirteen men and one woman were sentenced to die, and one woman biologist, Lina Shtern, was sentenced to five years of hard labor.

The executions were carried out on 12 August 1952, the Night of the Murdered Poets. The Soviet government never publicly admitted the executions, nor were the identities of the victims and the locations of their graves officially revealed. Only with the publication in the 1990s of the trial transcript (Rubenstein 2001) were the victims' ordeal and fate made fully public.

Why should I, an American born (on 7 December) in 1942, set to music a poem by a Russian-Polish writer born (on 7 December) in 1895? Before composer Philip Koplow approached me about writing this music, I had

never heard of Peretz Markish and I knew little about Stalin's attempts to eradicate Jewish culture by attacking Yiddish-speaking artists in the Soviet Union. Furthermore, I had almost *never* written choral music. As someone skeptical of the power of music to enhance words, and also as someone impatient with choral and vocal works where—as is usually the case—the words cannot be understood without the help of a printed text, I had avoided composing for voices.

Sometimes, however, circumstances take you beyond yourself. The more I learned about the plight of the Murdered Poets, the more I began to feel that the relative freedom artists enjoy in the United States comes with a tremendous obligation. The more I understood the repeated attempts by the Soviet government to control what its artists produced, the more I felt the responsibility to take my own free choice of what and how to compose extremely seriously. As an artist who can speak out against injustice to other artists, I felt I must do so. I did not live in Soviet Russia, or in any state that demands socialist realism of its artists, or under a totalitarian government. I may complain about the United States government's indifference to artists, and I may wonder about the pressures that government arts agencies and corporate sponsors bring to bear in attempts to encourage some kinds of art and discourage, or even censor, other kinds, but my complaints amount to little compared to those I have heard from composers who used to live under Soviet-influenced or -controlled governments in Russia, Poland, Bulgaria, Romania, and elsewhere. And so I felt I needed to speak my protest, in as direct a way as I could. I needed to use not only music, which is *my* language, but also words—words by Peretz Markish.

And I knew I must speak out as a Jew. I am not observant, and I have always felt my Jewishness as more a cultural than a religious identity. But I felt a solidarity with the murdered poets. Their oppression because of their Jewishness could have been mine. One of the harrowing experiences of my youth was listening to my grandfather tell of his narrow escape from Lithuania. He was hidden under some hay in a cart; a sympathetic farmer was to drive him across the Polish border. A soldier stopped the farmer at the frontier and asked if there was anyone hiding in the hay. As my grandfather lay motionless, the soldier thrust his sword through the hay—two inches to the left of my grandfather. A delay, and then the second thrust—two inches to his right. The soldier allowed the farmer and his cart to pass. Had those thrusts been inches away, I would not be here today. Why did the soldier want to kill my grandfather? Because he was a Jew—no other reason. It was not because of his beliefs, but because of his being. And that being is mine. Composing *No Beginning, No End* gave me the opportunity to speak out against a murderous prejudice that nearly precluded my very existence.

I chose to set Markish's text in English translation (by Armand Schwerner) in order to maximize its impact in my own country. And I did my utmost to make the text clearly understandable: I derived the pitch contours and the rhythms from the way the words would be spoken if read aloud. They have a nervous, almost hysterical quality. Phrases are short and disconnected, consisting of vivid snatches of meaning rather than a logical progression of thoughts. As I composed, I realized that the words were leading me toward a commitment to musical meaning. Their character suggested a musical structure in which one section follows another pointedly and nervously. These sections are connected by the three interludes based on the "Partisan Song," which is heard progressively less disguised throughout the work. Like many of my quasi-minimalist pieces of the '80s, this piece limits its pitch-class content throughout, in this case to the seven-note mode of the folk tune. The other five notes of the chromatic scale are never heard. In the case of *No Beginning, No End,* I found an expressive rationale to complement my structural predilection for works with limited pitch-class content. I came to believe that the music's restricted, obsessive quality could be symbolic of the imprisonment of the Soviet Jews.

Perhaps this procedure seems backward: first I composed a piece, cast in the style I was exploring in other works at the time, and then I found a rationale for that style's appropriateness to a work of remembrance and protest. But musical styles are not like clothes to be donned or shed, depending on the occasion. The limited-pitch world was the only way I felt I could genuinely express myself in 1983, just as the quasi-Berg style was the only possible idiom for my antiwar piece in 1970. These styles were transparent at the time: they, and only they, would not come between my intentions and my music. Today, postmodernist composers tend to use styles more as objects, or even as musical materials, rather than as languages of expression. Used in such manners, styles are not transparent but opaque. But in 1983 I was not yet the eclectic that I have since become. Had I used any other idiom, even one seemingly more appropriate to the Murdered Poets Concert than a quasi-minimalist style, that idiom would have taken on the opacity that comes from treating styles self-consciously as objects rather than as means. Trying to give proper expression to Markish's words using musical techniques from an era and culture far removed from his became a major compositional challenge.

I found myself using additive melodic techniques similar to those I had developed in more abstract music. Figure 2 shows the first orchestral interlude (melodic line only), based on "Partisan Song" (compare with fig. 1). The additive and subtractive technique owes something to the quasi-minimalist music Frederic Rzewski composed in the late '60s and early '70s, such as *Les Moutons de Panurge*[9] and *Coming Together.*

Figure 2: First orchestral interlude from *No Beginning, No End,* based on "Partisan Song," mm. 54–146.

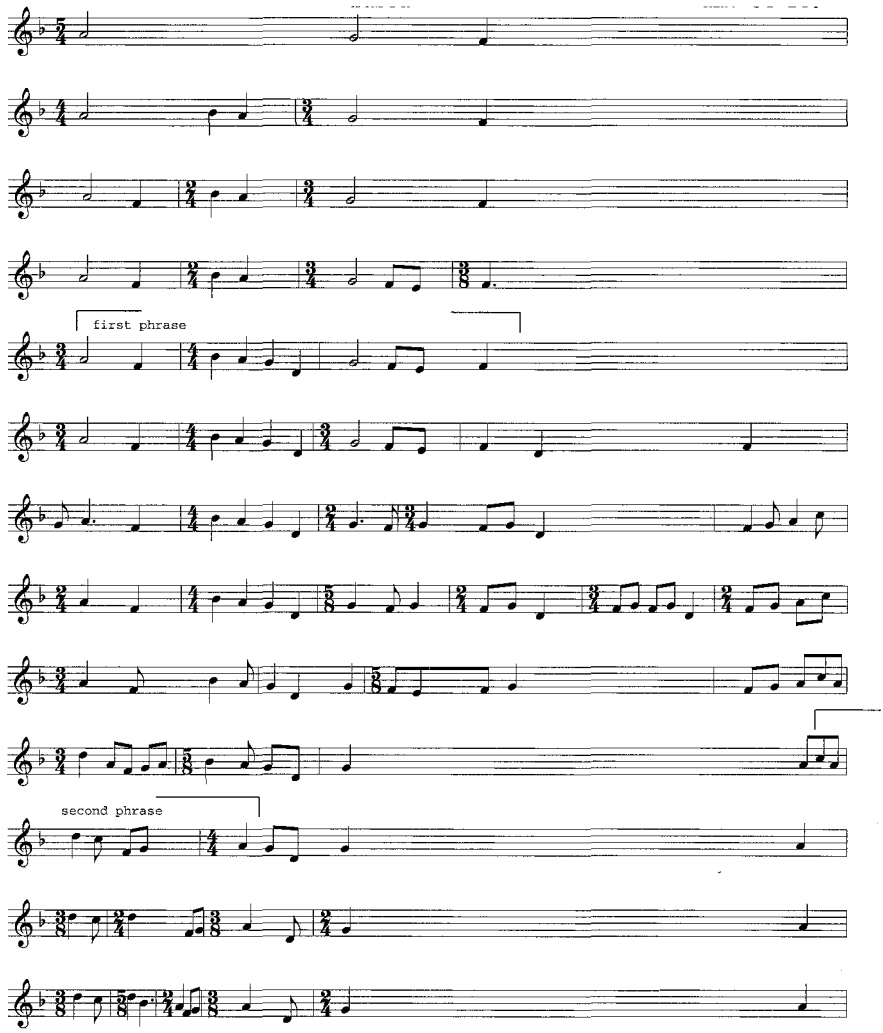
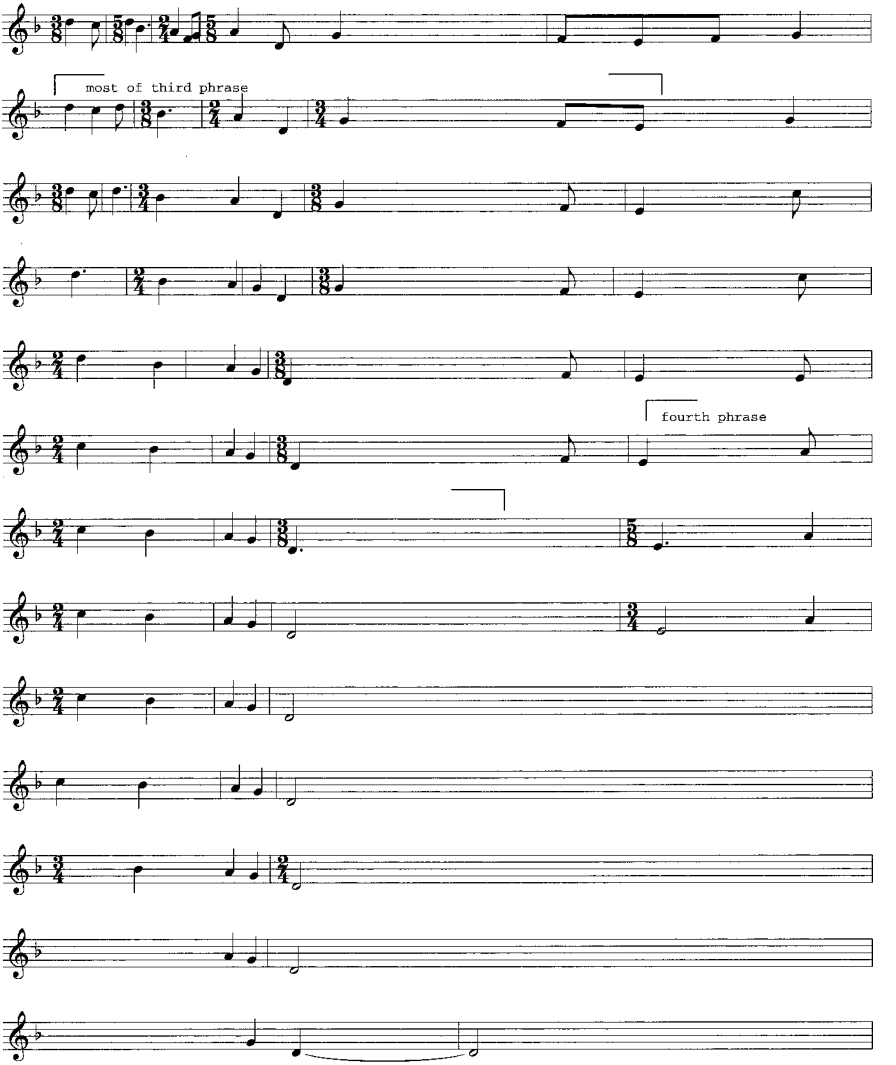


Figure 2 (cont.)



"Partisan Song" consists of four phrases, totaling 35 successive pitches (counting repeated notes as one pitch), as indicated in figure 1. The first interlude gradually builds up the first phrase by adding pitches one by one to a repeating pattern. See the numerical analysis in figure 3, which corresponds to the musical notation in figure 2. Each number in figure 3 labels one of the 35 pitches. The first phrase fully emerges in the fifth cycle, where it is indicated in boldface type (pitch numbers 1–10). After that, pitches are gradually removed and others are added or substituted for them, moving step by step toward an emergence of the second phrase (pitches 11–17, shown in bold in the eleventh cycle). Notice that corresponding pitches are aligned vertically (to the extent possible) in figure 2. The process continues, leading toward an almost-full[10] statement of the third phrase (pitches 19–27, shown in bold in the fifteenth cycle) and then of the fourth phrase (pitches 29–35, shown in bold in the twentieth cycle). Subsequently, the fourth phrase is gradually reduced by successive omissions of pitches. The symbol "x" stands for a free pitch, not part of the "Partisan Song" melody.

Since there are only eight distinct pitches in the melody, there are numerous duplications. Hence it is possible to trace the skeleton of each of the four phrases within each cycle. As the contour of one phrase gradually emerges, that of another gradually disappears; thus one phrase is transformed little by little into another. Figure 3 shows numerically the theoretical (although not always audible) presence of parts of all four phrases during each cycle. For example, the second A in the second cycle (second staff system) of figure 2 is destined to emerge first as note 4 of the first phrase. But, as the labeling in figure 3 shows, that note will also eventually become a member of each of the melodic phrases: it will be revealed as the 17th, then the 23rd, and finally the 33rd note of the melody. (Not every note evolves into a pitch in each phrase, but most notes have identities in more than one phrase.)

The second interlude treats the "Partisan Song" imitatively, gradually building from a two- to a three- to a four-voice texture. Figure 4 shows the four-voice imitation. The apparent metric distortion of the melody is less audible than the notation may suggest. Ignoring the score, it is quite possible to hear the metric contexts of each voice as similar to that in figure 1.

In writing this music I faced an ageless problem. I had to compose music with a direct impact—political as well as aesthetic. Yet it had to be done with the highest artistry of which I was capable: no compromises for the sake of directness. Thus I did not eschew my typical metric changes, pungent dissonances, discontinuities, or contrapuntal density. But the frequent use of the folk tune and the total diatonicism helped the work's accessibility, while the transformational and contrapuntal devices helped

Figure 3: Analysis of figure 2.

	1													7			10										
	12													25													

	1							3			4			7			10										
	12										17																
											23			25													
											33																

	1						2	3			4			7			10										
	12						15				17																
											23			25													
											33																

	1						2	3			4			7	8	9	10										
	12						15				17																
											23			25													
											33																

	1						**2**	**3**			**4**	**5**	**6**	**7**	**8**	**9**	**10**										
	12						15				17																
											23		24	25													
											33		35														

	1						2	3			4	5	6	7	8	9	10	x	x	x							
	12						15				17																
											23		24	25													
											33		35														

	1						2	3			4	5	6	7	8	x	10	x	x	x	x	x					
	12						15				17																
											23		24	25													
											33		35														

	1						2	3			4	5	6	7	8	x	10	x	x	x	x	x	x	x	x	x	x
11	12						15				17																
											23		24	25													
											33		35														

	1						2	3			4	5	6	7	8	9	10	x	x	x	x						
11	12						15				17																
											23		24	25													
											33		35														

	1						2				4	5	6	7	8		10										
11	12	13	14				15	16	x	x	17																
	18	19									23		24	25													
											33		35														

	1						2				4	5	6	7													
11	**12**	**13**	**14**				**15**	**16**			**17**																
	18	19	20								23		24	25													
											33		35														

	1						2				4	5	6	7													
	12	13	14				15	16			17																
	18	19	20	21							23		24	25													
											33		35														

							2				4		6	7													
	12	13	14				15	16			17																
	18	19	20	21	22	23					23		24	25													
					32						33		35														

Figure 3 (cont.)

	1							2		4		6	7			
	12	13		14				15	16	17						
	18	19		20	21	22	23			23		24	25	26	27	28
						32				33		35			29	
										4		6	7			
		13		14						17						
	x	**19**		**20**	**21**	**22**				**23**		**24**	**25**	**26**	**27**	
						32				33		35			29	
										4		6	7			
		13		14						17						
	x	19		20	21	22				23		24	25	26	27	
						32				33		35			29	
										4		6	7			
					13					17						
	x				21	22				23		24	25	26	27	
						32				33	34	35			29	
										4		6	7			
					13					17						
	x				21	22				23		24		26	27	
						32				33	34	35			29	
										4		6				
										17						
						22				23		24		26		
			31			32				33	34	35				
										4		6				
										17						
27	x					22				23		24			27	
29	**30**		**31**			**32**				**33**	**34**	**35**				
										4		6				
										17						
27						22				23		24				
29	30		31			32				33	34	35				
										4		6				
										17						
27						22				23		24				
29	30		31			32				33	34	35				
										4		6				
										17						
						22				23		24				
			31			32				33	34	35				
										4		6				
										17						
						22				23		24				
						32				33	34	35				
										4		6				
										17						
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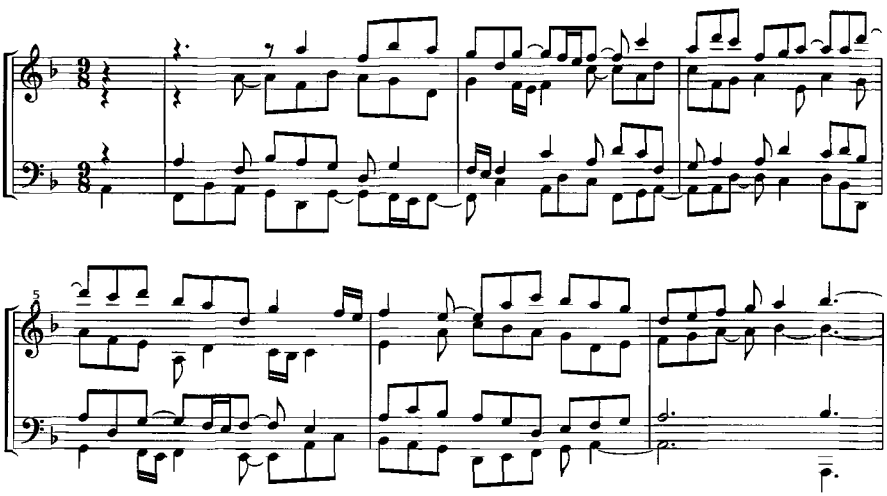
Figure 4: Imitative treatment of "Partisan Song," mm. 245–51.



strengthen its artistry. The music had to serve, above all, the idea of the Murdered Poets Concert. It had to be a statement against oppression and for art; it had to be a symbol of the indestructibility of truth; it had to be a vehicle for the perpetuation of Markish's poetry. In other words, it was obligated to mean something beyond itself.[11]

Remembrance of a People
for piano, string orchestra or string quintet, and optional narrator
1. Arbeit Macht Frei
2. Brief Lives, Endless Memories
3. Past Joys, Present Sorrows
4. Their Deaths Shall Live

In January 1996 Marcia Goldberg of MMB Music, publisher of *No Beginning, No End* and other pieces of mine, asked me if I would compose a short piece to be played at a ceremony in Saint Louis to take place on 16 April, Holocaust Remembrance Day (the actual date commemorates the Warsaw Ghetto uprising). At first I resisted, because I was swamped with other work. But that very day, despite how busy I was, I found myself sketching a little of the piece. And it then grabbed hold of me, and demanded to be completed. I wrote it for string quintet and piano. Because I was lecturing and hearing a performance of another piece of mine in Los Angeles in April, I arranged to stop in Saint Louis before returning to New York, in

order to rehearse the piece. The rehearsal process was not wonderful. The musicians, members of the Saint Louis Symphony, asked me to conduct. I was less than eager, because the piece *is* chamber music and because I had not conducted in public since 1967! But I agreed—not only to lead the rehearsal but also to return to Saint Louis a few days later to direct the performance.

The performance took place in a large synagogue. This was not a concert, but a ceremony with music. Holocaust survivors told their stories, with music interspersed. The event was quite moving, but the performance was less than wonderful—in part because of my inexperience, in part owing to the lack of rehearsal time. But the piece was effective, at least for me. The performers, though pressed by a limited rehearsal schedule, all seemed deeply involved in the work as an expression of Holocaust grief. Paradoxically, the composer was the least involved emotionally, because of his awkwardness on the podium!

I called it *Brief Lives, Endless Memories.* While working on it, I decided that it ought to be the second movement of a full-length concert piece. I also decided that I should make a version for string orchestra and piano.

So much for the external story. The internal one is more interesting. As a non-observant Jew, I kept asking myself: How could I ask anyone to listen to and think about *my* thoughts on the Holocaust? I feared that my Jewishness might be seen as self-serving by more religious Jews. The fact that many Holocaust survivors are atheists was little consolation. The fact that there were other victims of the Holocaust—gypsies, homosexuals, and racial minorities—did not lessen the fact that my work was destined to be thought of as a "Jewish piece," particularly considering its title. I thought about this problem a lot.

Both *Requiem for the Innocent* and *No Beginning, No End* are, in a sense, public pieces. They had an agenda: to help make people concerned with certain injustices. But no one needs my music to tell them about the Holocaust. There are hundreds of books, articles, television shows, radio broadcasts, videos, etc. that keep the story alive. But the Holocaust has always gnawed at me. It may be the case that it never touched me or my family directly, yet it touches everyone everywhere—Jew, non-Jew, religious, nonreligious. What does it mean to live in a world that has known the Holocaust (and, of course, other holocausts before and since)? How can one even begin to answer such a question? Composing *Remembrance of a People* became a way for me to work through the Holocaust in personal terms. So, it is different from the earlier two pieces. It is more personal and less political.

But what does an audience know about my feelings? And what *should* an audience know, especially since the piece seems destined to be a concert work, heard away from Holocaust memorial events? Composing can be

emotional and expressive, but I still believe that the meaning for the composer is not the meaning for the listener, who constitutes it in his or her mind—under the influence of the piece and the performance, to be sure, but also distinct from them.

That is how my intellectual, scholarly reasoning has gone. However, composing this music made me question that argument. I had specific ideas about the Holocaust in mind while I was composing, and I found myself inserting verbal phrases into the score so that the performers would know something about what I had been thinking. This is because I wished them to contemplate *my* meaning, and I wanted to attempt the impossible—to try to invoke specific emotional reactions. If that isn't communication from composer through performer and performance to listener, then I don't know what it is! I felt that I wanted to communicate. And I felt that I *was* communicating. So, who is right, the theorist or the composer? Does music communicate specific ideas from composer to listener, or is it incapable of doing that?

The verbal phrases may be thought of as an attempt to direct the performers' expression, but they can also be seen as a means to delimit their emotional involvement with the music in certain ways. But do these words also limit a *listener's* experienced meaning? Not if they remain hidden in the score!

The verbal phrases I inserted into the score also act as *Hauptstimme* indications, but I hope they do more: I hope they inform the musicians about the appropriate expression. At several rehearsals, players have said that the phrases did indeed guide them toward their interpretation. Some of the phrases are: "the anguish," "broken lives," "music of mourning," "death transcended," "death march," "the stillness of death," "grief beyond grief," "echoes of times past," "futility," "the immortality of death," "anonymous graves," and "lives cut short." These phrases help the music be what it is for me, and for performers, and ultimately, I hope, for listeners.

Since I did write them into the score, they are more than private. Therefore I asked my friend Roger Goodman to write brief prefatory poems to each movement, using some of these phrases. Although his poems did not finally use as many of the phrases as I would have liked, they do set the mood for each movement. They are supposed to be included in concert programs and, when appropriate, read aloud before each movement at performances. Roger wrote sixteen Holocaust poems, from which I chose these four:

Arbeit Macht Frei
From stiff, straight factory chimneys
Columns of gray smoke, straight and stiff,
Make bars that pierce the clouds;
Under the roof, the tanks, blood fueled,

Roll forth to chew the peopled fields;
Grind to dust the flowering Spring.

Grief Beyond Grief
Sob for sons, for daughters,
For the slaughtered;
For corpse-banked ditches;
Sob for sob-wracked throats
Scratched dry; sob for
Smoke-enshrouded Sun, blind-staring
In desert lands;
Sob for yellow blossom, blaring life
Above the nurturing ash; sob for
Widowed, childless God,
Lone once more amidst the boundless void.

Dance Remembered
Smoke, billowing fringe to ghostly gown
That swirls in ancient rhythm; dance heard
Once, long ago. The blurred drum
Beats to heel hard crack; Within the gown
The skeletal dancer bows; is swept away.

Death, Immortal
It could not be, in God's great Plan
To have His creature, Death, in one vast hecatomb
Release so many souls. No, here was shown the zeal of
Sons of Cain, whose brand so scarred them
That, again they slew their brethren in agonies of hate,
Self-blinded, stripped away Death's scythe and took
The duty of the Reaper.

The theme of *Remembrance* is the Holocaust and memory. I was concerned with how the Holocaust haunts history's collective memory; with humankind's tortured memories of the cruel events that took place in Europe in the 1930s and '40s; with the importance of never forgetting those who perished; with the painful memories that Holocaust survivors carry within themselves even today; with how the tortures of the victims affected their own memories; and with my personal memories of learning about the Holocaust from parents, relatives, friends, books, articles, movies, television, and radio.

Many other composers have created musical responses to the Holocaust. I often asked myself whether the world really needs still more Holocaust

music. The answer is simple: yes, we need as much music (and as many other statements) as possible. We must use all means in our power to keep alive the memories of what happened and of who died and how and why. Memory is our strongest weapon against future holocausts, and, whatever I may think about its ability to communicate, music is one form of expression that can deal powerfully with memory. For me, the crucial difference between previously composed Holocaust music and this piece is that *I* am the composer. I needed to use *my* musical art to help *me* come to terms with memories of the Holocaust.

While composing *Remembrance of a People* I kept a diary, partly in private and partly via e-mail correspondence with pianist Mina Miller, who was quite helpful to me in formulating ideas for the piece. She later organized and played piano in one of the performances of *Remembrance.* The following edited and abridged excerpts (and interspersed commentaries) from this diary give a vivid picture of what was in my mind while composing. I find them fascinating to reread today, to see how intensely I was grappling —in both technical and aesthetic ways—with questions of musical meaning. The diary also concerns itself with matters of compositional technique, which I hope may intrigue readers of this article. From discussing composing with a number of colleagues, I have been struck by how diverse our working methods are. I offer these reminiscences in the hope that a glimpse into one composer's workshop may be of some interest.

It may seem strange that I was often thinking about compositional technique, apparently divorced from the underlying expression I was seeking. But, in fact, craft requires full, intense, conscious involvement, even if that means relegating affect to a subconscious level. Usually when I sat down to write at my desk, computer, or piano, I had already internalized the feelings invested in the music about to be composed. I did not usually think too directly about the Holocaust while intensely involved in composing, although I do believe that Holocaust-related feelings were part of my composing process. Because the diary was written after, not during, composing sessions, it does consider the work's Holocaust theme, often alongside matters of form, tonality, style, and orchestration. Both the technical and the expressive were clearly deep concerns of mine when I was creating this piece. The big, unanswered question remains how these two concerns influenced each other.

A Diary

18 January 1996

I haven't completely committed to composing a Holocaust piece, but I am working on it. About a minute is done, and I find it intriguing. Surprisingly, I find myself thinking about thematic transformation. Normally that is something I find utterly uninteresting and strive to avoid,

but when I work intuitively, from the heart, old habits (some may call it musicality) are still there. And so it is here. With no conscious intention to transform themes, I find the music moving around the same materials—a theme, a motive, even an interval (the minor third—what else?).

24 January 1996

So far, the rhythms haven't gone beyond quarter-note triplets, and the metric changes have all been among 4/4, 3/4, and 5/4. This restraint is most unusual for me. But the music is nonetheless challenging to play. The first violin part is a bit stratospheric, as is the viola part. And I think I feel a cello solo coming along. The piece will probably require professionals, but it is for more expressive than virtuosic musicians. All of this seems a bit odd to me, though, since the piece is only going to be five minutes long and is intended as background music for a candle-lighting ceremony. The Saint Louis performance won't even be a concert. I suppose if I am going to be serious about all of this, I'll need to add movements. But I can't imagine what they would be like. How does one write fast music of grief and remembrance? Or, how (if one is not Haydn or Górecki) does one write three successive slow movements?

28 January 1996

I had an idea for an eventual third movement (no ideas for a first yet): a melancholic waltz, the dance of life of those who never got to live, of the children of those who perished in the Holocaust might have had.

19 February 1996

The movement seems to be done. A few details need to be ironed out, but the whole thing is in place—unless I have second thoughts. The music breaks off unexpectedly (after a cadence in F minor) at the end—lives cut short [see fig. 5]. This will work fine if/when the piece is a middle movement; for an independent piece, it may seem strange. Now, I need a name. "The Immortality of Death"?

The piano solo has augmented triads moving by half step as accompaniment to a rhapsodic, faintly bluesy RH line, which uses a simple mixture of triplets and duplets to create a sense of rubato. It is only eight bars long—cuts off unexpectedly, like much of the piano music in the piece [see fig. 5, mm. 55–63]. The piano is rarely integrated into the rest of the ensemble—that is a challenge for the other movements. It either plays against the others, accompanies discreetly, is a soloist, or is silent.

The piece seems to have two quotations. Unexpectedly, two not inappropriate fragments intruded into the piece, and I decided not to banish

them: a fragment from the finale of Tchaikovsky's *Pathétique* Symphony [see fig. 5, mm. 73 ff.], and an altered fragment of the *Dies irae* tune. Neither quotation was intentional or conscious.

26 February 1996

A title? "Lest We Forget"? Too trite. "Eternal Silence"? Too cosmic for a five-minute piece.

While I was in peaceful Montauk [where I have a retreat for composing], I began to have thoughts for another movement of the piece, but neither the first nor the third as planned, but a different one. An unexpected fourth movement? It is poignant and personal: not the tragedy of the Jewish people, not the murder of masses of innocents, but the infinite sadness of any (every) single undeserved death. It wants to transpire in stark two-voice counterpoint, with touching dissonances that resolve into poignant consonances, only to return to dissonance again and again. I hope I don't forget it before I get to write it!

18 April 1996

Despite the uneven performance in Saint Louis, and despite some details that need revision, the piece does sing. My conducting did at least help me think up some practical improvements, which I am already using to refine the piece. No matter how many pieces I write, I almost always find myself revising them after hearing them.

The essential expression of the piece—from grief to transcendence, from dissonant counterpoint to tonal harmony—can be heard and felt.

17 May 1996

I listened to the tape of *Brief Lives* several more times. I have some good ideas for the version I have been working on for string orchestra with piano. Also, I realized that my phrase structure is often decidedly odd—surely in *Brief Lives,* but also in most other pieces. I always find myself putting in various irregularities and unexpected turns. I have relished this quality—but as I try to listen not as the composer but just as a listener, I wonder if the phrases don't sound awkward, rather than quirky or intriguing. I struggle for the objectivity needed to answer this question, but I can't reach it.

I went to the Holocaust Museum in Washington, to the library and the learning center. In the library I watched some videotapes of survivors recounting their stories. In the learning center I heard music composed in the camps. I found all of this harrowing and personal. I was struck not by the enormity of events, but by the poignancy of individuals' own stories, told in reminiscences or in songs.

21 May 1996

It is now a month since the Saint Louis performance, and I can look back at it somewhat dispassionately. It always takes some time for me to learn to hear my music as a listener rather than as the composer—to hear what is in the music, not what I wanted to put there. Now, after several listenings, I think I understand the Holocaust piece. It surprises me in its emotional intensity and pathos—qualities not common in my music. These first emerged recently in the second movement of *A Game,* my piece for cello and piano. Those qualities have resurfaced here, but to a far greater extent. Strange! I want this Holocaust piece to have universal resonance, to survive its occasion, since I don't know if we will ever put the Holocaust behind us. Naomi Cumming recently shared with me this tellingly apt quotation from Slavoj Žižek:

> The 'return of the living dead' is . . . the reverse of the proper funeral rite. While the latter implies a certain reconciliation, an acceptance of loss, the return of the dead signifies that they cannot find their proper place in the text of tradition. The two great traumatic events of the Holocaust and the gulag are, of course, exemplary cases of the return of the dead in the twentieth century. The shadows of their victims will continue to chase us as living dead until we give them a decent burial, until we integrate the trauma of their death into our historical memory. [1992: 23]

23 May 1996

I have been analyzing *Brief Lives.* I hear mm. 73–77 as an antecedent phrase, then m. 78 begins as a consequent that gets derailed in m. 80. The harmony in mm. 78–80 seems as if it is simple, but I can't analyze it simply enough [see fig. 5].

A passage that intrigues me tonally comes after m. 76. That there is a modulation from F minor to C minor makes sense in the long run, but this idea does not capture the B major in violin I in the next two measures. Perhaps this B major is illusory, especially since violin II and piano LH do not agree—but I can't get it out of my ear, perhaps because I composed the first violin line first and then added the others.

For quite a while I did not fully realize how tonal the music is toward the end. But, with F minor in mind and ear, I now understand that key as prevailing from m. 48 on. Actually, I revised the harmony in the second half of m. 49 to be a combination of dominant and subdominant of F, and I added a counterpoint to (and also reorchestrated) the subsequent bass solo when making the orchestra version. What I had initially taken as D♭ major at m. 54 I now realize is actually F minor, with the juicy, augmented

Figure 5: *Remembrance of a People,* second movement, mm. 48–86.

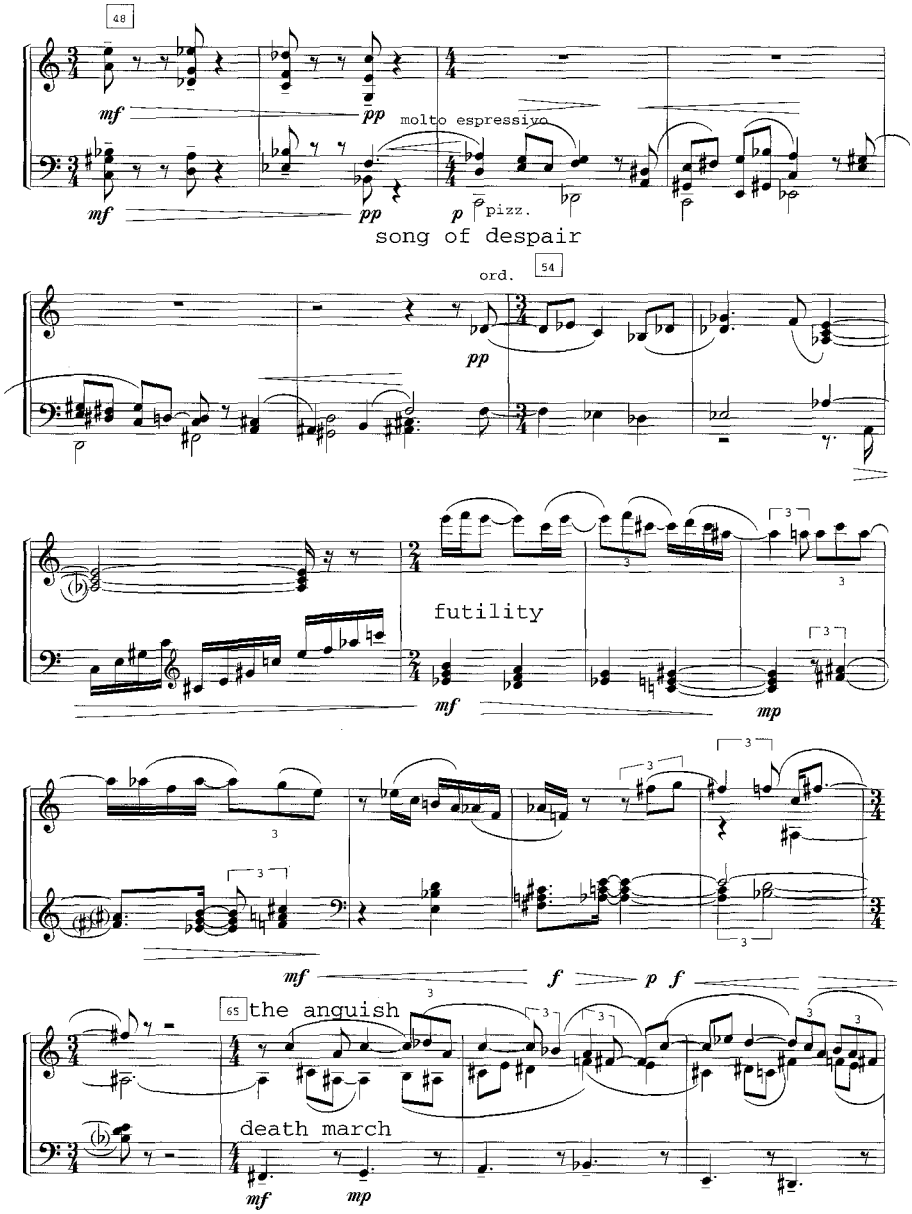
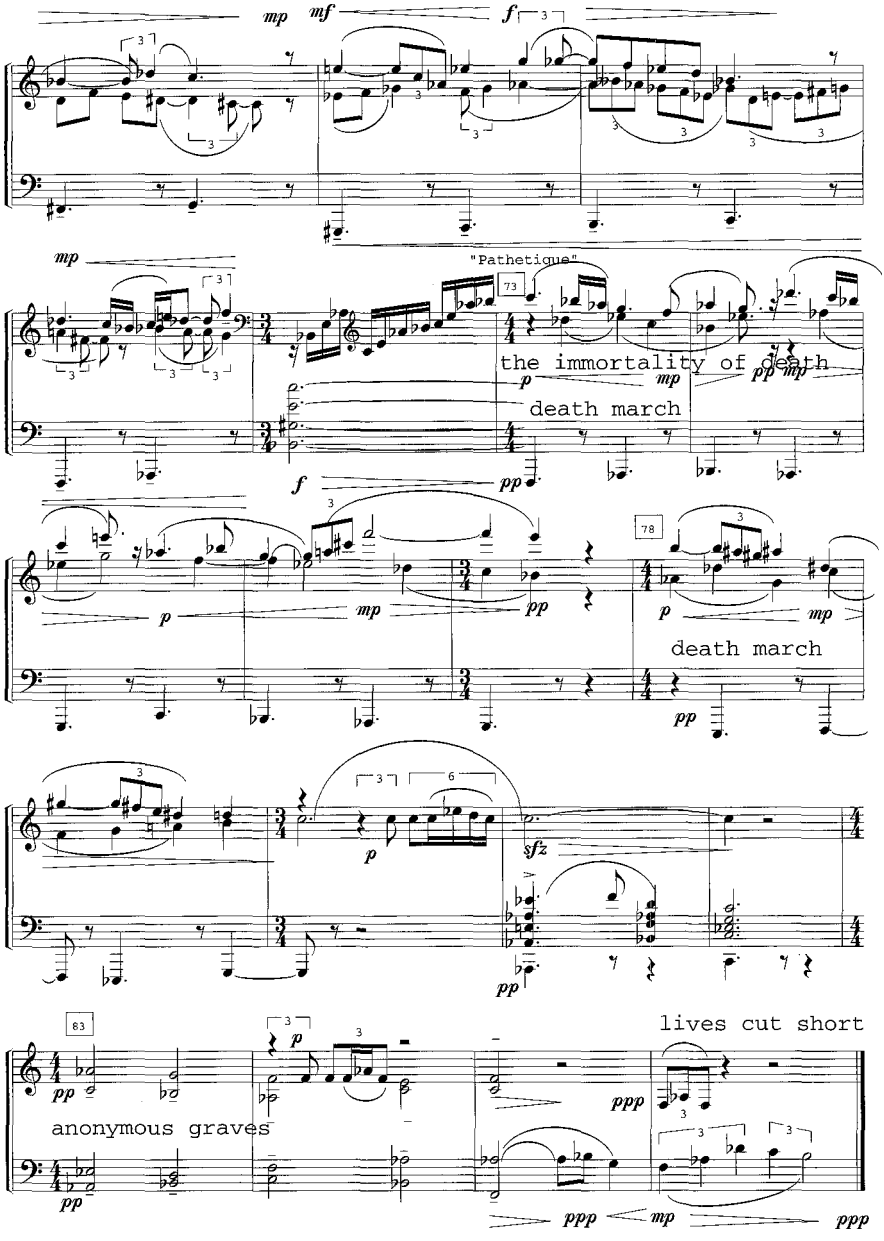


Figure 5 (cont.)



triad in the end of m. 55 as a V substitute. When mm. 54–55 return at the very end, just after an unequivocal F-minor cadence (even using the same augmented triad as dominant substitute, but this time with an added bass B♭—m. 84, second half), its allegiance to F minor is straightforward. This coherence is gratifying: I wrote all of this without thinking harmonically *at all,* but rather by thinking linearly. I was somewhat aware of tonal vs. atonal suggestions, but I had no idea how tonally integrated the music is from m. 48 on. I guess I was hearing well! Now, the harder questions are: How far back is F minor implied? Is m. 1 V+iv of F minor? Is the piece ever atonal? Are references to F minor (e.g., mm. 12–15, mainly violins) simply hints, or are they tonally functional? Also, I notice that B as an irritant to F has precedence: mm. 8–9 (violin I), 13 (violin I), 19–28 (bass), and 55 (bass). So, ending the piece on B after an F-minor cadence, followed by an arpeggiated F-minor chord (D♭ in the last measure is an incomplete neighbor to C) makes sense. I remember my elation on discovering that ending. I don't usually go in for abrupt endings, but this one seemed right, somehow. Now I think I understand why.

Commentary

What does this tonal/atonal dichotomy have to do with the Holocaust or with grief? I would have thought atonality more suited to anguish than tonality, at least in my compositional world, but in fact this tortured movement turned out far more tonal than I had realized while composing it. Tonality does allow for more wrenching denials of expectation than does atonality, I suppose, but the tonality is so chromatic that deceptive moves are not so inherently poignant as they can be in diatonic tonal music. Perhaps I somehow felt subconsciously that tonality is more expressive than atonality, although the intense atonal passages in the fourth movement —composed later—would seem to contradict that notion.

21 June 1996

Today I bought Daniel Goldhagen's book *Hitler's Willing Executioners* (1996). I also finished reading Primo Levi's *Survival in Auschwitz* (1993). Goldhagen is absolutely fascinating. I find him far more riveting than Levi, possibly because I have read or heard personal accounts of the camps before. But Goldhagen is a real scholar, and reading the tools of objective research turned on the Holocaust is a very different kind of experience. What he says about the complicity of the Germans, and the questions he asks that no one else has seen—it all ends up, paradoxically because of the objectivity, far more harrowing than the personal accounts. More harrowing because of the focus not on the victims but on the perpetrators.

23 June 1996

Now I'm getting annoyed with Goldhagen. He is a sharp thinker and sees the fallacies in others' arguments and methods clearly. But when he comes to offer his alternatives, he is very rigid and categorical. He seems content to substitute one dogma for another, with little justification other than: those other guys' ideas are stupid, and mine are an alternative, so mine must be right! But I'll see after he gets into more details.

29 June 1996

I've been working on the third movement—despite what I had thought about wanting to begin the first. I have an opening, which has a nice shape and on which I've worked quite a bit to get all the details of voice-leading right. I don't know where it is heading yet. My original idea—that this movement would somehow look back on happier, more innocent times before the rise of anti-Semitism in Europe—is still there, someplace in my subconscious, but the more I work on the music the less I think about the Holocaust. I must work this way, if I want the piece to be any good. This is a way that I suspect composing is different from prose writing, where you can always think about import. And it is different from performing, which takes place in real time. I must let the piece go where it wants, to follow through the implications of my materials—and thinking always about the images of the Holocaust can impede the process. The danger is that the piece will come out good and spontaneous but have nothing to do with the Holocaust. Somehow I doubt it, but if that happens I'll have to decide what to do about it.

Commentary

This diary entry reflects a major concern. For many years I worked out compositional structures before discovering or constructing the musical materials that would articulate them. The additive processes shown in figures 2 and 3 are but one instance of this way of thinking. However, I found my aesthetic changing in the 1990s. I became more interested in materials and less in forms and structures worked out in advance. Composing became more like improvising. Several authors of fiction and theater whom I have heard speak about their work talk about how they create the characters and then let them interact. These authors seem more like chroniclers than like creators of their characters' interactions and developments. My statement shows that I was adopting a similar stance when composing *Remembrance.* I was eager to let my materials—themes, harmonies, motives, sonorities, whatever—go on a journey of their own, which I would observe and then notate.

Does this change in compositional procedure relate to musical meaning? On one level it must, since the music composed more spontaneously and intuitively is certainly different in several ways from the music constructed in accordance with preconceived processes and structures. Music that obeys preset structures tends to have fewer surprises than music that develops on its own, so to speak. Perhaps the spontaneity of the unexpected fits a Holocaust theme well, because of the potentially wrenching quality that an unexpected musical event (such as the manic, fast passage late in the third movement) may have. Perhaps, also, an intuitively conceived passage allows its composer to think about extramusical impulses more often during the compositional process—though such thinking does not in itself guarantee any particular kind of meaning—as compared to a process-oriented passage, which can run along almost on automatic pilot for several measures. None of these considerations speaks directly to a listener, however; these are composerly concerns. A listener may well uncover specific meanings—even Holocaust-related—in any music, regardless of what the composer was thinking about while setting down notes.

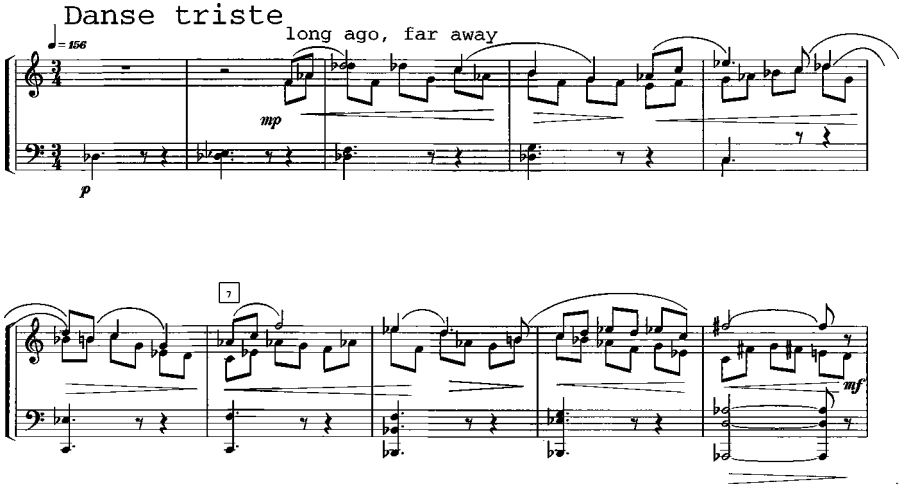
30 June 1996

I have about a minute+ of the third movement, and something is not quite right about it, but I can't figure out just what. The programmatic idea is becoming a little clearer. Its theme (title?) is something like: "Life Long Ago," or, "Dying Memories of Lives that Were." It isn't as easy to make the movement a waltz as I had expected: I have avoided waltzes for a while, because they always come easily and can get to be clichés. I like the waltzes in my *Music for Piano Number 4, Variations for Band, Musica Pro Musica, Another Sunrise,* and *Five Studies on Six Notes.* They all were very easy to compose, as I remember. But this one is not. So I am trying to make its recalcitrance into a positive compositional force: the inability of the music to flow like a waltz being symbolic of how the lives people lived before the Holocaust were ever more dimly remembered. The hesitancy of the music perhaps suggests how painful it was to think back on the lives they had.

I keep adding music onto the beginning of the movement, trying to get the phrase structure right. As a result, there seems to be confusion between antecedents and consequents—a confusion I hope to turn to expressive purposes.

The whole thing thus far is based on the final measure of *Brief Lives* [compare fig. 5, m. 86, with fig. 6, mm. 2–3]. Cut short in that context, it now triggers memories of continuities. It begins the third movement and pervades it on several hierarchic levels. Tonally, the piece seems to be playing with the D♭ side of that fragment.

Figure 6: *Remembrance of a People,* third movement, mm. 1–10.



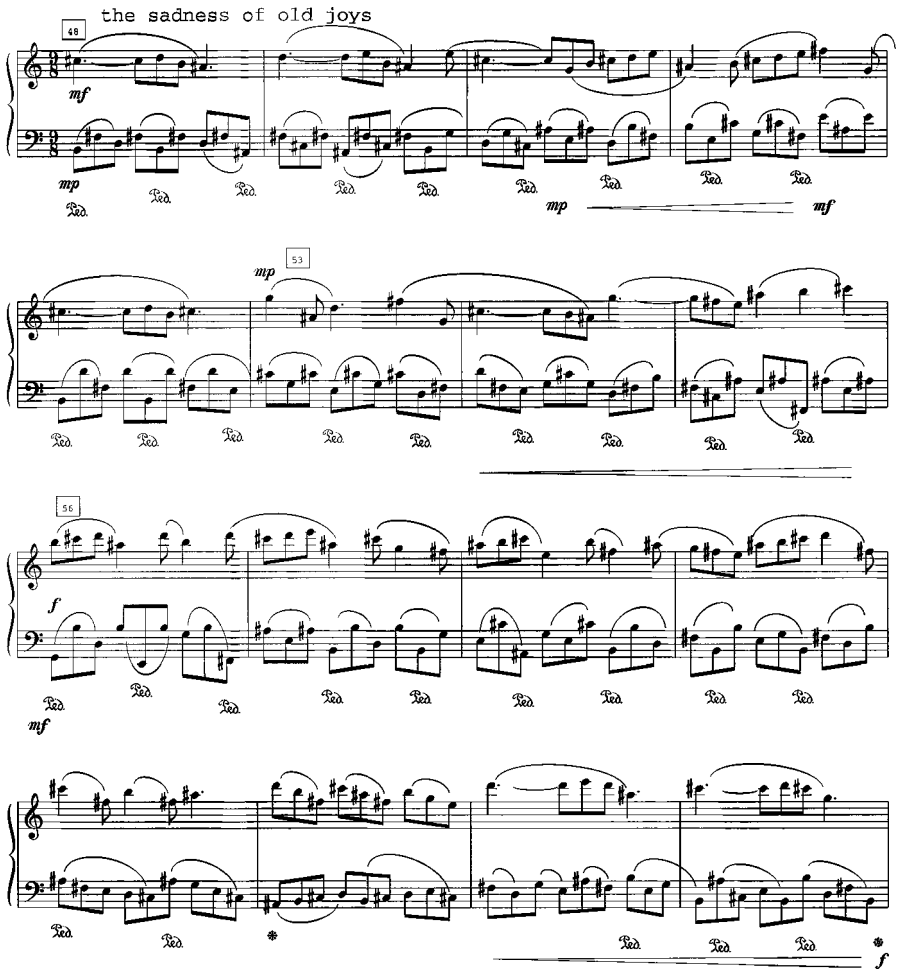
Again I am having trouble with the piano. A few measures are rather nice, but the other instruments act as if they don't really want a piano in this ensemble. Perhaps this is indicative of a lack of understanding on my part of how a piano can convey pathos; or perhaps the piano's alienation from the ensemble is somehow emblematic of Holocaust suffering. My piano writing has usually tended toward the brittle, the percussive, the virtuosic—but not the tragic.

I think, as the movement goes on, that it should become more fragmented, more dissonant, less tonal—to show how the memories of past lives (past living, really) fade. The reality then will be the last movement.

2 July 1996

The third movement is almost half done. I have about two minutes continuous from the beginning, and the idea of it is becoming clearer to me. The theme is remembrance—the memories of the oppressed thinking of happier times. Times that probably weren't all that happy, but in comparison to life in camps, hiding out, and fleeing, previous times must have seemed like paradise. But, as Primo Levi explains eloquently, horrible conditions make it hard to remember other times. So, the music is a picture of the days before the Holocaust, but seen/heard through the filter of those dreaded times. It opens with a bittersweet dance-like passage, but the phrases keep stumbling, as memory falters. The tonality keeps playing

Figure 7: *Remembrance of a People,* third movement, mm. 48–63, piano part (other instruments mostly double prominent piano pitches).



with F minor and D♭ major from the second movement. But then, that movement's "phantom key" of B finally asserts itself, in a poignant yet nostalgic passage in B minor [see fig. 7]. It is mainly piano music, so the piano problem seems to be solved—but it is still isolated from the ensemble. I *think* the passage is beautiful, but it may just be sentimental. Perhaps it depends on the pianist. I always rely on performers, but usually on their technical or rhythmic prowess. Here I hope for extremely sensitive and beautiful playing.

The inner tension comes from something rather clever. The passage is in 9/8 throughout. The melody clearly articulates this meter, and the LH seems to also, as it is an Alberti-like constant stream of eighth notes, in arpeggios. But the harmonies change not every three or six or nine eighths, but every four or eight eighths. So the melody and the harmony are out of phase, despite the simple way the notes line up rhythmically. They come into phase every four measures, forcing the phrase structure to be regular. The pitches are the notes of B harmonic minor, with no exceptions, but—since melody and harmony often do not agree—there are lots of pungent dissonances. Viola and cello are involved too, in a background way. At the end of this passage, hazy, dissonant chords take over, as a veil of pain descends over and swallows up these memories. I hope to relaunch this passage as the veil lifts partially, but with greater distortion, as present pain destroys memories of past innocence.

I have only a few verbal phrases thus far: At the opening dance-like passage, "long ago, far away." When this dance turns more overtly into a waltz, "innocence recollected." The B-minor passage: "the sadness of old joys." The veiled dissonant chords: "fading memories."

31 July 1996

I have come to realize that this piece is fulfilling a longstanding wish. Years and years ago, when I was first trying to figure out musical styles, I became aware of how close chromatic tonal music and freely atonal music can be. I used to play a game: beginning with various collections of pitches, arranged as dissonant atonal chords, I would voice-lead away from them towards convincing tonal cadences, usually in just a few chords. So, I had always planned to write a piece that sits on the fence between tonality and atonality, sometimes moving toward one side, sometimes the other, but without a huge contradiction of language.[12] I have just figured out that the Holocaust piece *is* this music. It is certainly true in *Brief Lives,* though less so in *Past Joys.* But the fourth movement is again this way. Interesting how far along I have come in this piece before having this realization.

I'm having some trouble with the final movement. It scares me because I think several of my pieces end somewhat disappointingly. I'm just not sure if it is beautiful enough. I need the atonal parts to be as beautiful as the tonal. I think they are in *Brief Lives.* But I must be careful. My tendency (actually, that of many polystylistic composers) is to be expressive and beautiful in the tonal sections, and to use the atonal sections as intense, or even ugly, contrasts, and to treat atonality not as a beautiful language in itself, but as the absence of tonality. That certainly happened in *Serbelloni Serenade,* and somewhat in *About Face* and *Musica Pro Musica* also. Thank

goodness *Notta Sonata for Two Pianos and Percussion* got beyond that pitfall, and that is one of the reasons I feel it is successful. But *Past Joys* comes perilously close to an atonality-as-ugliness aesthetic. I must not let that happen in the finale.

The last movement is, in an approximate sense, moving from tonality to atonality—just the opposite of what *Brief Lives* does. The finale begins in an unabashed D minor and gets gradually more dissonant, and finally begins to lose its tonality. I find myself wanting to write a long (too long?) series of sighs or cries of anguish in the middle of the movement: phrases that begin intensely with pungent dissonances, and then gradually trail off into (brief) silence. This seems to happen again and again, phrase after phrase. Can this work? I really don't know.

I sketched about four minutes very quickly (but not in chronological order), and then couldn't see what to do next. While I was trying to figure out a continuation, I filled in details of voice-leading, orchestration, dynamics, bowing, pedaling, phrasing, etc. This helped save time later, but more importantly got me to hear and understand what I had written better. I'm still not quite there, but I'm getting close. Now I have seen what the continuation should (maybe) be: more sighing phrases, but now totally atonal. I even toyed with making them twelve-tone, but that seemed a copout in this context. This passage is for string quartet only. Somehow, dissonances sound better in the string quartet than in any other medium. The sighing phrases now are beginning to resolve toward consonance, eventually tonality (not yet written). I am thinking that there should then be a series of string solos accompanied by piano—using tortured chromatic lines with wide leaps.

The Holocaust idea in the last movement is not as carefully worked out as in the other movements. My thoughts thus far: While we theorize about how and why the Holocaust happened, while we mourn the loss of life and the loss of humanity, while we read and write about mass genocide, while we try to deal with horror through art—one thing remains central. This is no story; this is no intellectual exercise. *It happened.* Beyond feelings, beyond facts, lies the recognition of the Holocaust's actuality. The final movement deals not with specific images and feelings, but with inescapable reality.

2 August 1996

Suddenly, the fourth movement is virtually done. I am amazed at how, in some passages, I have to struggle for every note, and most versions just sound wrong—whereas in other passages, everything comes quickly, and several versions sound right, and I need to choose among them. Sometimes, no matter what I write, it sounds good. At other times, no matter

what I write, it sounds dreadful. I guess it has to do with context. It is surely not a question of some kinds of music being easier to write. A completely atonal section, which I had expected to be grueling work, flowed easily and quickly. The passages in D minor, however, were very difficult.

The business with the sighs became obsessive, maybe even excessive. Almost the entire movement consists of phrases set off by brief silences. Most of these phrases decrescendo from loud to soft. This is a bold move. It certainly can be heard as reflecting Holocaust grief. But does it work, or does it become mannered and predictable? I still don't know!

The whole question of interrelationship is interesting. For the longest time, I have distrusted recapitulations (except in tonal music) as the easy way out. Time and time again, I have resolved that the piece I was writing would have no recapitulation, and yet by the time I had drawn the double bar, there was one in the music, glaring at me. Even worse, I seem to have a predilection for trying to wrap things up by quoting previous ideas just before the end. How obvious! Yet it is hard to keep myself from doing this. These are but two aspects of my distrust of, and even distaste for, motivic consistency. I have long felt that motivic consistency is overrated, that much music would survive fine if the motivic interrelationships were removed. This feeling is behind my words against musical unity in my article "Beyond Unity" (1995). But I think my composing has recently shown me a more nuanced side to the question. It happened with *Serbelloni Serenade,* and now again with the fourth movement of the Holocaust piece.

What makes their similarity-relationships work is that I do not hit the listener over the head with them. They are subtle. And why are they subtle? Because they were not consciously planned, but rather came from intense involvement with my materials and perhaps, in the case of this piece, from the Holocaust obsession. So, I am now no longer so adamantly opposed to motivic connections or to recapitulations. I am just against trying to make them more than they should or can be. And, I guess, I am opposed to making them the point of a movement. I actually tried to rework a passage from the second movement in the fourth, and this artificial construction was utterly unconvincing. I now feel that if the motivic associations arise naturally, unplanned and unbidden, then they just might be subtle enough actually to have structural import. Paradoxically, the less attention I pay to them, and the less intentionality I invest in them, the more important and the more believable they become. This is an important lesson, at least for this piece.

But with that lesson comes a dilemma. Since the first movement will be composed last, will the derivational process work in reverse, or will it not exist at all? How much of the third and fourth movements was influenced by my tentative ideas for the first movement? What if the first movement

comes out very different than I envision it? It is best not to think about these issues at all, but just to write the movement!

5 August 1996

I tried to put the piece aside for a few days and do some schoolwork and some theory work. Ha! Last night, I decided I would just see how my ideas for the first movement—kept in my mind but not on paper or in my computer since April—might work out, just before turning my attention elsewhere. Since it is often better to break off work on a piece in the middle, not at a major juncture, I thought I ought to sketch a bit. Well, the next thing I knew it was late this afternoon and I had sketched two minutes from the middle of the movement, which I like a lot. I'm not yet sure how it relates to the other movements, but I'm not worrying about that now. This music is interesting in two ways.

(1) The idea is: endless buzzing around, symbolic of life in the concentration camps, where people were made to work pointlessly, while they awaited death. I am thinking of calling the movement *Arbeit Macht Frei.* I find myself doing less emotional music, more contrived music, in a way. Somewhat like my style of the '80s, which abounds with directional processes—such as that used in the first orchestral interlude of *No Beginning* [see figs. 2 and 3]. Here, though, the process is not calculated but felt. The music moves from unison writing (orchestrated in a fragmented and pointillistic fashion, which is achieving what the other movements did not—fully integrating the piano into the ensemble) to harmony, to polyphony, to imitation, to true density. The language is quite rhythmic—all sixteenth notes, but with many rests. The music isn't as mechanistic as some of my '80s and '70s music, but it nonetheless creates the impression of mechanical (even maniacal) working-out—fully appropriate to the forced repetition of mindless work in the concentration camps.

(2) This movement, like the second and fourth, seems to be doing something I had always wanted but hadn't gotten around to doing. It has to do with scales and collections. When I was writing all those pieces with limited pitch-class content, I was always conscious of the six-note modes as collections with gaps, usually (not always) "defective" diatonic sets.[13] I got to thinking, especially as I moved on to less rigid but still collection-oriented music, about what makes a collection successful (for me). I'm not talking about a scale, which I take to be a collection with a (quasi) tonic, but just a collection of notes (and intervals). I got to feeling that the only collections that would not feel defective (and also not seem to include nonscalar tones) would be those with only major and minor seconds between adjacent members, and without two successive semitones (which

might be manageable, but which begin to sound like chromatic alterations to fewer scale degrees).

Now, there are surprisingly few such collections. The only six-note collection that meets these criteria is the whole-tone scale, which—because of its symmetry—is of limited usefulness, though it does have some great sounds. The only eight-note collection is the octatonic, which I have used a lot. Collections that have more than eight notes inevitably violate the requirement for no adjacent semitones. Among the seven-note collections, there are only two: the major scale, which is the same collection as that used by the natural minor and all the "church" modes: 013568t; and also 013468t. 013468t is the melodic minor scale (ascending) and also the so-called Bartók acoustic scale (e.g., the opening of the last movement of the *Sonata for Two Pianos and Percussion*).

013468t is under-utilized, I believe, yet it has some fascinating properties. It does not have unique multiplicity of interval classes, which makes it in certain ways more impoverished than the diatonic set (although not as impoverished as the octatonic and the whole-tone). But it comes close: the interval vector is <2,5,4,3,4,2>: 1 is missing, which means there is no transposition with six of the seven notes in common. But it does have other interesting properties. It shares a subset—a hexachord, all notes but one!—with the octatonic collection and hence can mimic that set nicely. It also has a pentachord in common with the whole-tone collection, and can thus mimic that very different-sounding collection. And it shares a hexachord subset with the diatonic and so can mimic the world of tonal-modal music quite well also. But there is an intriguing anomaly: if we measure relatedness between different transpositions in terms of the number of PCs in common, we find that the closest transposition (which I use as the closest modulation) is not a fourth or fifth away, but a major second. Very interesting! In contrast to the diatonic set, 013468t contains all four triad types. And it, like the diatonic and the whole-tone and the octatonic, is inversionally symmetric. It can also be thought of as derived from a major scale, but with both ♯4 *and* ♭7. By contextually emphasizing different members of the 013468t collection, quite different scales can be created.

So, I've always wanted to base a piece, or at least a substantial section, on this collection. But I never have. Now, without really planning to do so, I have been writing this piece. Once I became aware that the materials I have been thinking about actually are based on 013468t, I have been able to generate an interesting quasi-tonal structure that has an intriguing sound. The only danger is that the infectious rhythms and quasi-diatonic mode may sound too joyful for this piece, but I think as they go on and on and become more and more obsessive and dissonant, the point should be clear.

Commentary

It may seem strange that I chose the scale for reasons having to do with compositional craft rather than by thinking about the affective responses listeners might have to the melodies and chords this scale can produce. But in fact, there are so many divergent sounds, progressions, and moods that this scale is capable of that it almost did not matter expressively that I had chosen this particular collection. Consider, after all, the vast variety of emotional types that composers have created using the major scale. A decision as basic as what collection(s) to use does not delimit the expression of the music, although certain collections may be more conducive to certain moods—though it is hard to predict before actually composing what affects an under-utilized mode like 013468t may suggest. Anyone raised on the old music-appreciation adage that music in major is happy and music in minor is sad may find this statement odd, but in fact, expression depends on myriad aspects of music, and collection type is too broad and fundamental to determine affect solely.

6 August 1996

One way to slice up the compositional universe, at least of today, is into (1) music that tries to do something special, possibly unique—whether or not it is "advanced" in musical language, or experimental or avant-garde, and (2) music that simply tries to be attractive. I've always gravitated toward the former, as a composer and as a listener—the intellectual over the intuitive, perhaps; or the deeply thought-out over the facile, to be more prejudicial about it. Of course, the best thing is to be both, but that is exceedingly rare. The contemporary composers I respect the most all fall into the former group. I find it very difficult to let myself go and just write a beautiful piece, to be just musical. Although adhering to Holocaust themes can get in the way of just letting myself go, it also propels me to make the music beautiful.[14] I've done it in the past, particularly when I've worked quickly: *Cincy in C, Serbelloni Serenade,* and *Requiem for the Innocent* come to mind. This is a hard thing for me to do, especially since the first kind of music is often rewarded and the other dismissed in academic circles. But I am trying.

14 August 1996

I know exactly what the first movement wants to do—although I'm not sure whether or not these plans will constitute the entire movement. It should begin with a chaotic, indistinct polyphony of fragments, which should gradually coalesce as it gets less dense. Then a long passage of incessant fragments, representing how people were forced to do endless, repetitive jobs in concentration camps. This part I've written. As it goes

on, it gets progressively denser, possibly reaching the initial chaotic density once again. As it gets denser, it becomes canonic. Thus far in the piece, I've avoided canonic writing—I do it so often that it has become a mannerism. But somehow it seems to fit the idea of the first movement—of endless running around, doing meaningless tasks—so it is not the cop-out it might have been. After the piece grows back to density, a poignant melody should float above the chaos. It should focus on E♭, since that PC is being avoided totally. Right now I am into a three-voice canon (time interval of five sixteenths in 2/4 time), each voice using a different transposition of the basic collection. If I use T0, T3, and T6, then each pair of voices shares four PCs, and there are three PCs that each appear in one voice only, and there is one PC that does not occur at all. And that is E♭. That pitch should certainly produce an emotional impact when it finally appears.

7 September 1996

I am beginning to envision the opening of the piece. Although I thought I had everything planned, some plans have not worked out. I sketched about a minute at the beginning, not quite linking up with the already composed middle section. The one concern: the first few measures are quite unlike anything that follows. I did this at least once before, in my Septet. It works there, but that piece is only four minutes long (also in four movements). Whether the peculiarity of hearing an opening that does not connect with the rest of the piece is appropriate for such a sober piece I am not sure—even though there is a programmatic justification: the beginning could represent life before people were captured and put into camps. Everything after that was utterly different. But such a rationalization does not make the music work. It is appropriate only if the music works on its own.

11 September 1996

Strangely, I keep adding onto the beginning, so that the unusual opening is not quite the beginning any more. I did this in the third movement and also in *Serbelloni Serenade,* but I cannot remember having worked this way in any other pieces.

A friend called last night. I had not seen him for several months. At the beginning of the summer I mentioned the Holocaust piece. He requested a tape of *Brief Lives, Endless Memories.* He told me that his wife's cancer was progressing relentlessly. She died a few weeks later, but I was in Montauk and did not find out in time to attend the funeral. Apparently my tape arrived just as she was dying. They played a Mozart aria from *Zaïde* at her funeral. They sat *shivah* for a few days, and then just had friends in for a few

more evenings. At those intimate gatherings, they talked about her and played the Mozart aria and *Brief Lives*. The family found it comforting, and appropriate to the occasion.

Commentary

My music may have been a comfort, and I was certainly gratified that it was, but I believe that the occasion of mourning contributed as much to the meaningful musical experiences this family had with my piece as did the music's sounds. But I cannot know this to be a fact. I believe that the listeners themselves may have had more to do with their solace than did my music: they needed to be comforted, and they were thus predisposed to taking comfort from music. I do not—and cannot—really know the extent or the cause of their consolation.

17 September 1996

I had thought up a nifty idea for beginning: to start with the vagueness of the whole-tone scale, except that it has only five of the six notes. But the figuration would be such that you barely notice that one note is missing. Then, eventually, to supply two more notes to create not a whole-tone scale but a melodic minor ascending (or acoustic) scale. This makes great sense on paper, but when I tried to work it out, it was just too disruptive to move from the whole-tone universe to that special context (in which I already have a couple of minutes of music) of 013468t—especially if we never return to 02468. This is another case of conceptual logic (the five notes of the whole-tone collection becoming five notes of the melodic minor) not leading to musical logic.

Commentary

When we hear a passage based on 02468, why do we feel that its collectional completion wants to be t rather than 9 and e? This is an interesting question for music psychologists to try to answer. Perhaps we expect completion by means of the fewest possible notes, creating only major and/or minor seconds with adjacent notes in the collection. Or perhaps we expect the most prevalent intervals to be duplicated by completing notes.

22 September 1996

I think I may have gotten the idea to work. The whole-tone problem went away once I started being less rigid about my procedures—allowing in a few foreign notes when they knocked at the door. The problem was not with the idea but with its realization. I now have made the transition work, I think—by continually emphasizing one of the five notes of 02468,

which eventually becomes the leading tone of the melodic minor and resolves the crucial half step up. Some attractive and eventually poignant piano figuration helps—when the whole thing was simply a series of chords, it was tedious.

12 December 1996

There are a few passages about which I have doubts, but I am reluctant to change them, because in doing so I might rob the piece of some of its boldness. I know what they sound like, but until I actually hear them interpreted I won't be sure of their effect. One is the way the central portion of the first movement begins almost joyously and becomes grimmer as it becomes obsessive. I'm not sure about the apparent joy in relation to the overall theme of the music. Another is the long coda of the last movement, with phrase upon phrase starting strong and deteriorating into silence: phrases that refuse to group into pairs or triples, that remain isolated. A good programmatic rationalization is possible, but does it work musically?

16 December 1996

Tonight I finished the piece—again. Actually, it is hard to say exactly when a piece is done. I still need to tinker with editorial details, and with computer formatting, but tonight I entered the final dynamics and bowing marks. I've been at it for almost a year, which is not unusual, except that I had expected this one to go more quickly.

Do I feel gratified to be done with the piece? Perhaps, but I mainly feel released. This thing has held me captive for eleven months, and now I finally feel free of it. I am too resentful, at the moment, to love it, but that may come. Having spent all day proofreading, I'm not in the best of moods with regards to this music. I guess my reactions to it are like those toward an overly demanding person—which is progress. It is becoming independent of me, and gaining a life of its own.

7 January 1997

Thinking back on composing the first movement, I recognize that the big breakthrough was discovering the "poignant melody" centering on the previously absent E♭. I discovered it not in my imagination, which had yielded up several awful possibilities. Rather, I found it in the second movement! Since that discovery, I have been editing, deciding details, and entering music into the computer. Hence the copying is also done. I have begun to talk about the piece, and some people are interested. Perhaps there will be some performances. Now, I just hope the piece lives up to everyone's expectations—and, most of all, to mine!

Coda

And so ends my composition diary for *Remembrance.* For the first time in quite a while I had composed a piece without a commission or even a specific performance planned. Thus, if the work was going to be heard, I would need to market it, or at the very least tell people of its existence. About this prospect I felt quite awkward. I did not want to seem, to myself or others, to be promoting my professional career over the ashes of Holocaust victims. And I was ambivalent about sending such a personal and emotional piece into the world. But I had not exactly kept the piece a secret; whenever anyone asked me what I was composing, I answered. Thus several groups were eager to perform the music.

The premiere took place early in 1998, at the United States Holocaust Museum in Washington, DC. The concert series is under the direction of Steven Honigberg, a superb cellist who sang with great intensity and pathos in the second movement's solos. Roger Goodman read his poems. Several people seemed to be overcome by the performance. Why? It would be naïve to believe that the music alone had done this to them. They were an audience that regularly attends concerts at the Holocaust Museum, and so were predisposed to have an emotional experience at one of them. The words—Roger's poems and my program notes—certainly made clear what the music was trying to say. While I do not think that the music itself moved people, I also do not believe that the music was unrelated to their emotions. Music can induce powerful emotional responses, which contextual circumstances can link to specific images and ideas outside the music. In this particular concert, the music undeniably did help some people confront their Holocaust-related feelings.

Both similar and different things happened a few weeks later, when the group Sequitur played the chamber version (with Roger again reading his poetry) as part of a Holocaust-related concert in New York's Merkin Hall. This time some people in the audience said they would have been *more* affected had they *not* known of the music's connection to the Holocaust. The theorist in me appreciated their reaction. The postmodernist in me simply recognized that everyone is entitled to his or her own reaction.

The version for string orchestra was first presented a few months later, at the Interlochen Academy in Michigan, where Matthew Hazelwood conducted an orchestra of some ninety high-schoolers, some of whom were first learning of the Holocaust through my music and through events surrounding the concert that Interlochen had mounted. Then there was a performance in Seattle on the inaugural concert of Mina Miller's important series "Music of Remembrance." Again people were predisposed to being touched, and they were.

In June 1999 the orchestral version was done in a bastion of anti-Semitism —Russia. The performers were the Saint Petersburg State Symphony Orchestra, with my Columbia University faculty colleague Deborah Bradley as a very sensitive piano soloist, and with Ravil Martinov conducting. The orchestra members were deeply involved and dedicated. Not sharing their language, I found it difficult to gauge how the Russian listeners felt.[15]

I was particularly inspired by performances in two towns in British Columbia, Kamloops and Kelowna, in November 1999. I had not wanted to make the trip to the Rocky Mountains, because I was just getting back from performances of my *Surreality Check* by the Moebius Ensemble in Helsinki and Prague, and was also about to go to Atlanta for the Society for Music Theory conference. But the concert organizer, David Mardon, begged me, and so I agreed to go to the concerts (but not the rehearsals). I am very glad I went, because the events were profoundly meaningful.[16]

The orchestra ranged from complete amateurs (e.g., a violinist who had to play the part an octave lower because it was too hard, but had to ask another player to write out the octave-lower version!) to quite respectable professionals. Everyone seemed deeply dedicated to the concert, and by the time of the final performance it actually sounded quite good—and very intense.

Why had Mardon, an amateur violist, spent a year and a half of his life putting together a concert in memory of Kristallnacht, in a town of 80,000 people, with about three Jews in town? When I saw his statement in the concert program, I knew the answer to this question. Mardon had written, in part:

> April 1998. I am teaching chemistry lab in Kamloops, British Columbia, and I ask a refugee from Serbia, a man who fled because he feared for his and his Croatian partner's lives, a literate adult who is fluent in three languages, about Kosovo, and what is going on there.
>
> "Oh," he says, "it's those Albanians. They're not like us. They're not even human. They live like pigs in dirty houses. They pollute our land by living on it. They rape our sisters and poison our children. They breed like flies. There will be no peace until they are all driven from our sacred land and locked up in camps, and shot."
>
> So.
>
> I remembered the story of Vedran Smailovic, principal cello of the Sarajevo Opera, who throughout the siege sat in a chair in a square in Sarajevo and played his cello in the midst of snipers and mortar shells—because it was all he could do to protest, to make a difference.

> Ludwig van Beethoven said, 'I believe . . . that music can change the world.'

There were 350 people at the concert in Kamloops. Local dignitaries read Roger's poetry. Afterward, several people told me how affected they had been. One man came up to me, crying. He said, between his sobs, that he did not understood my music at all, but that it overpowered him. I told him that he understood it very well. And I believe that: on that occasion this music provided him with a context for having deep feelings of his own, which *he* attributed to the music but which *I* attribute more to him. One of the poetry readers said that it was important to do this concert, because the area had been targeted by the Aryan Nation. This represents political protest music at its most efficient: for at least some people, my piece was a call to attention about a social problem of immediate concern.

About a year before the concert, Mardon had contacted a businessman and philanthropist named Mel Kotler, who lives in Kelowna, a two-and-a-half-hour drive from Kamloops. Kotler then secured donations of several thousand dollars to support the concert, and he brought it to Kelowna. So, the afternoon following the Kamloops performance, I found myself in Kelowna, at a dress rehearsal attended by eight hundred high school students. The program was long, unfamiliar, and difficult for them. By the time my piece was approaching, they were getting quite restless. I decided to take the matter into my own hands. Taking the microphone, I told them about my grandfather's escape from Lithuania, and how hearing that story at the age of ten had marked my loss of innocence. I stared into the crowd and spoke in short, clipped sentences. The students were mesmerized, and silent. This story had its effect, as it carried them well into the music. But not all the way—their restlessness eventually returned.

Taken with my story, the concert organizers asked me to retell it at the evening concert. This time the crowd numbered five hundred, an amazing number of people for a town of 100,000 with only sixty Jewish families. Again people expressed gratitude for and involvement with my music. Why had they come to this concert? What were they looking for? What did they find? I wish I knew the answers to these questions, but several casual conversations with audience members revealed no definitive information about their inner experiences with the music. Perhaps emotional experiences around a Holocaust theme are better left private; or perhaps people are simply too insecure to discuss their reactions with the composer.

And that is the story—thus far—of my coming to terms with the Holocaust and with the expressivity of my music. What I learned from my three "programmatic" pieces is both a lot and a little. I learned first-hand about the expressive power of music, but I still do not really understand what,

when, or how music bears emotional or political meaning, or even whether music does, in any deep sense, communicate. I have felt deep emotions hearing these pieces performed, emotions somehow different from those that other works of mine induce. And I have witnessed powerful reactions in other listeners, but I understand those responses even less.

Sometimes I say to myself: You have tasted music's power in both political and personal contexts, so why not simply accept it? I suppose I do accept it, even though I still do not comprehend what it is in the music that induces or evokes grief, tragedy, sorrow, or catharsis. Although I cannot solve the dilemmas of musical signification touched on throughout this essay, I do know that my never-ending concern with meaning helped to shape the music of which I am the proudest.[17]

Notes

1. Although written in 1946, William Wimsatt and Monroe Beardsley's "The Intentional Fallacy" first came to widespread attention in Wimsatt's *The Verbal Icon* (1954). This article was subsequently reprinted in numerous anthologies of writings on aesthetics or literary criticism.

2. They were, in chronological order: Arnold Franchetti, Leon Kirchner, Billy Jim Layton, Seymour Shifrin, Roger Sessions, Andrew Imbrie, Karlheinz Stockhausen, Jean-Claude Eloy, Richard Felciano, and Edwin Dugger. My experiences studying with Stockhausen are remembered in my article "Karlheinz in California" (Kramer 1998).

3. A particularly apt example involves two professionally trained musicians who hear rather different references in a particular passage in my *Serbelloni Serenade* (1995). One hears Russian contrapuntal music like that found in some Shostakovich fugues, and the other hears Mexican bullfight music!

4. For further discussion of this point, see Kramer 1996.

5. I brought Norma and Zachary to hear it. Zachary slept quietly in his carriage for the entire concert, except that he woke up and cried for three minutes when my music began.

6. At the time of the concert, I believed that there had been 24 victims, but recently uncovered historical evidence indicates that there were 15. See Rubenstein 2001: 1–65.

7. Norman Dinerstein was supposed to participate as the fourth composer, but he died unexpectedly.

8. The chair of the Committee, Solomon Mikhoels, suffered a serious fall while visiting America. The doctor who treated him was the grandfather of Paul Nadler, who conducted the premiere and one of the subsequent performances of *No Beginning, No End.*

9. See my analysis in Kramer 1988: 388–94.

10. There is no complete presentation of the third phrase, but this statement comes closest.

11. *No Beginning, No End* was commissioned by Albert Metzker, a patron of the Murdered Poets Concert whom I never met, and is dedicated to his wife Edythe Metzker. At the first performance in Cincinnati's Music Hall, the Cincinnati Chamber Orchestra and Cincinnati Choral Society were conducted by Paul Nadler. Richard Hynson prepared the chorus. Because of the difficulties of mounting a sufficiently large performance force, the work has been done only two other times. It was performed in 1989 by the Seattle Symphony Orchestra and Chorale under Gerard Schwarz, to whom I showed the work when he was guest conducting the Cincinnati Symphony and who immediately promised to program it—not on a protest or commemorative concert but on a subscription concert that also presented *Das Lied von der Erde* and Beethoven's Fifth Symphony. My piece has been played only one other time, by the Southwest Florida Symphony Orchestra and Chorus under Paul Nadler in March 2000, when it shared a program, based on themes of tragedy and brotherhood, with Brahms's *Tragic Overture* and Beethoven's Ninth Symphony (interestingly, all three pieces are in D minor).

12. I have found Arnold Whittall's discussion of the contradiction of musical languages to be quite compelling. See Whittall 1986–87: 1–20.

13. *No Beginning, No End* is unusual in using a seven-note mode; most of my other pieces from 1974–84 use untransposed six-tone sets.

14. I subsequently learned that the beauty of this music can be problematic. One projected performance of *Remembrance* was cancelled, apparently because the music was thought to be too beautiful in the face of the ugliness of the Holocaust! Whether beautiful music can or should express ugly ideas is apparently a major issue for some people.

15. There has also been a performance of the orchestral version by the Cleveland Chamber Symphony (with Deborah Bradley again as soloist, and with David Stock conducting) in April 2000. The Boston-based group ALEA III, conducted by Theodore Antoniou, performed the chamber version in October 2000.

16. There was also a touch of humor. When I arrived in Kamloops, Mardon picked me up at the airport. As soon as I had gotten into his car, he hit me with the following: "I have to tell you something. Now, don't worry—the concert is going on, and your piece *will* be played. But we had some trouble at the first rehearsal. The conductor showed up, and we noticed that his score had no pencil markings. He had hardly looked at it, though he had complained about it a bit a couple of months ago. He began to rehearse. After a few minutes, he announced that the piece was too long and too modern, and he was not going to conduct it. He threw the score onto the floor, stamped on it, and walked out of the rehearsal, shouting 'I resign!' He never returned. But don't worry—the concertmaster took over rehearsing, and everything is going fine." I wish I had been there to witness this outburst. It is exciting to think that a piece of music could still, in 1999, provoke such a reaction—and a piece with healthy stretches of tonality at that! The concertmaster—Mardon's son Ian, a fine musician—did an excellent job on short notice.

17. I would like to acknowledge the help of several people who read preliminary drafts of this article and offered valuable suggestions and perceptive insights: Deborah Bradley, Norma Kramer, Mina Miller, and Jann Pasler.

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Composing Notes

By Fred Lerdahl

Background

In my mid-twenties I experienced a prolonged creative block caused by the lack of a systematic compositional method. Beneath the block was a crisis of belief. Composers of earlier generations had belonged to aesthetic camps that provided the security of reasonably complete aesthetic worldviews. If you were in the neoclassic camp, you embraced an urbane use of the past, employing certain compositional techniques; if you were in the serialist camp, you embraced an idea of the future, employing other techniques. With the explosion of the postwar avant-garde, however, anything became permissible and therefore nothing had the stamp of authority.

I have always been attracted to systematic approaches to composition, but the compositional systems that were fashionable in the 1960s tended to be opaque to the informed listener when hearing music composed with them; one could not discern the methods of construction without concentrated study. I saw no reason to compose by a hidden code (see Lerdahl 1988). Moreover, the justification for these systems was at bottom merely historical: composer A influenced composer B, who influenced composer C, and so on. According to the prevailing neo-Hegelian ideology, each step was obligatory and pointed the way to future progress. A composer who took the next dialectical step was viewed as significant. If you were not on the wave of the future, you were irrelevant to those who believed in that particular wave. By the late 1960s, however, there were many competing waves, and they effectively cancelled each other out.

I wished to base my composing not on hidden codes and historical contingency but on the nature of the musical mind. By itself, this impulse was too vague to be useful. I began to see how it might lead to something substantial when I read Noam Chomsky's theory of generative linguistics, which advanced a program for the study of the human capacity for language. Chomsky's goal was to investigate particular grammars, the specifics of which are learned by experience, as a means toward characterizing universal grammar, which represents the computational mechanisms of the innate linguistic mental module and which underlies the learnability of particular grammars. This way of thinking about a mental capacity was revolutionary at the time, and it laid part of the foundation for what has since then become the cognitive sciences.

The postwar musical avant-garde had found its natural affinity in the behaviorist philosophy that was ascendant in the 1940s and 1950s.

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Behaviorists believed that the mind was initially an undifferentiated blank slate that was completely malleable, and that learning took place entirely by exposure and association. This view suited historically contingent music that employed arbitrary codes, for how else could anyone believe that such music was learnable?

I sensed in the Chomskian approach a fresh way to think about music. If it was possible to study the language capacity, it should also be possible to study the musical capacity. If this could be accomplished in any detail, it should then be feasible to use this knowledge to guide the development of compositional methods that are structurally rich yet cognitively transparent. Admittedly, this was a utopian quest conceived in broad strokes, but it provided a program for my own development.

This program began to materialize after I met Ray Jackendoff, a linguist who had independently reached similar conclusions about the application of the Chomskian framework to music. For years we worked closely together to develop a formal cognitive music theory, culminating in *A Generative Theory of Tonal Music* (1983; hereafter *GTTM*). We concentrated on the particular grammar of Classical tonal music, but our deeper goal was to articulate universal principles of musical cognition.

Starting with this collaboration, I divided my creative time between composition and theory, never mixing the two at any given time period because I needed to keep some distance between these very different activities. Although the theoretical work took on a life of its own, I never lost my initial motivation of pursuing theory for the purposes of composition. The influence, in fact, went both ways. Not only did theoretical ideas find an adapted place in my music, but my musical imagination and creative needs also suggested theoretical ideas, sometimes well in advance of anything I was able to state systematically. This interaction between composition and theory has persisted to the present day.

Compositional Syntaxes

While working with Jackendoff I did many reductional analyses of tonal pieces, some of which appeared in *GTTM,* in order to test and refine the rules that we were formulating. This activity led to the notion of composing by "expanding variations," which constituted a kind of reduction in reverse, spread over time. The idea was to begin with a single, stable event and elaborate it progressively into a few events, then more events, and eventually many events covering many minutes. As the events were elaborated, the complex would gradually become highly unstable. The materials themselves would not be the standard tonal ones but materials of my own devising.

To compose in this fashion held two major attractions. First, since the early 1970s I had felt the urge to recover tonality, broadly conceived, but

in a new way. I did not care for the grayness of the constant recycling of the total chromatic. I wanted to be able to write anything from a triad to a twelve-note chord in ways that would make aural sense, to have available the full range of the tension of sensory dissonance and the resolution of sensory consonance, and to locate a home base so that a phrase or section could depart from it and return again. I came to see tonality less as a stylistic principle than as a cognitive principle that it would be unfortunate not to engage.

Second, I sought novel formal procedures. The reconstituted neoclassical forms of Stravinsky and twelve-tone Schoenberg held little interest for me. More compelling—to take two contrasting examples—were the transformational motivic processes of late Sibelius and the simultaneous tempo unfoldings of Carter. (In this connection, I have never subscribed to the mainstream notion that equates modernity with degree of dissonance. Music is too multivalent for such simplicities. Twelve-tone Schoenberg was radical in pitch organization but retrospective in the treatment of motive and form; late Sibelius was conservative in pitch organization but forward-looking in the treatment of form and instrumentation. By now, the employment of microtonal dissonances and noise is quite familiar, so it is pointless to pretend to advance music by writing more dissonant sonorities. There are more interesting ways to be original.)

The composition of expanding variations satisfied both criteria, that of recovering tonality and that of working with a new formal procedure. It also provided a fruitful balance between order and freedom. This was important given the then recent atmosphere in which total serialism and chance had vied as putatively serious modes of compositional organization. In expanding variations, any given variation is elaborated within the structure of the previous variation, yet how it is elaborated is not predetermined. Once the variation is realized, it in turn sets the framework within which the next variation evolves. The result is an open-ended process within well-defined constraints.

I first employed this compositional procedure in my First String Quartet (1978). This piece also introduced in rather pure fashion a particular syntax to which I have often returned in various ways. As this syntax incorporates a number of principles related to my theoretical work, I shall briefly describe it here. Figure 1 gives the first six expanding variations of the Quartet, notated in reductional format without specific durations. The slurs represent prolongational relationships. Variation 1 states a completely stable sonority, low G with its immediately upper partials. Variation 2 adds the same sonority in slightly less stable form with D rather than G on top. Variation 3 interpolates a more dissonant chord comprised of the double leading-tones to G and D: A♭→G, F♯→G, E♭→D, and C♯→D.

In the latter case, the resolution of C♯ is displaced to G, outlining root motion in the bass and bisecting the octave. Variation 4 in turn elaborates the C♯ chord by a still more dissonant chord, created by whole-step motion in each of its voices: B♭→A♭, E→F♯, F→E♭, and B→C♯. Thus, the entire voice-leading is symmetrical around G and D. The chord progression is from consonance to high dissonance to intermediate dissonance to consonance: in pitch-class sets, (0 5)→(0 1 6 7)→(0 2 5 7)→(0 5). The T→S→D→T written beneath variation 4 represents harmonic function as described in my *Tonal Pitch Space* (2001; hereafter *TPS*). The progression is analogous to the standard T→S→D→T of diatonic tonality, in terms not of harmonic vocabulary but of equivalent prolongational position. This is the basic cadential (or closural) progression in this piece.

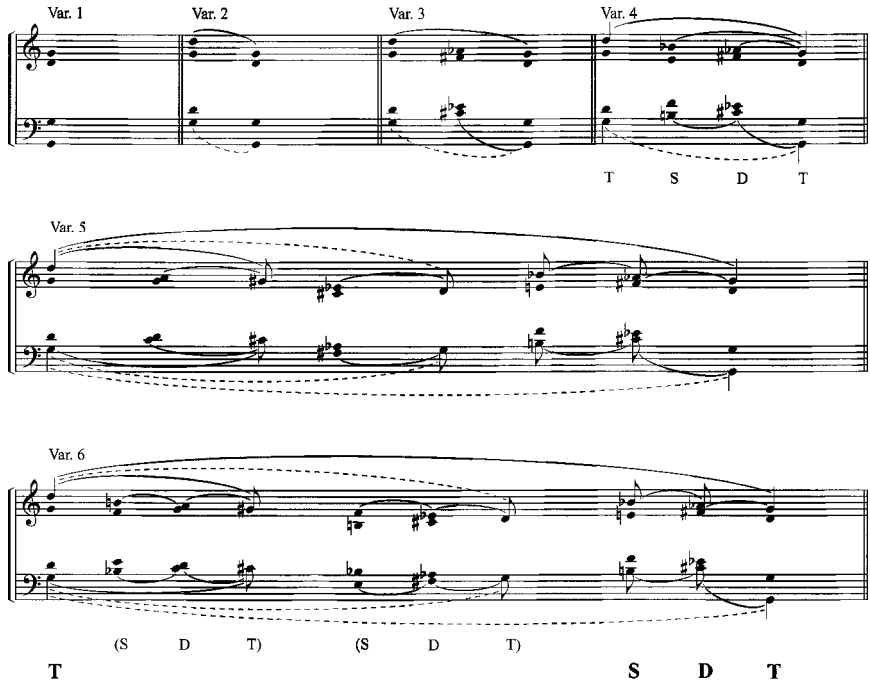
Variation 5 elaborates this structure by transposing D→T to C♯ with attendant voice-leading, and then by moving back to G but in the less stable form of resolving melodically to D on top; the cadential progression then follows as before. The transposition to C♯ parallels tonicizing the dominant in diatonic music: D-function becomes local T-function. Variation 6 fills out the progression by adding S-function chords, completing the T→S→D→T schema in a nested context.

In the actual piece, linear displacements and elaborations in individual voices have already begun to occur by this point, but the logic of the structure is as in Figure 1. As later variations expand, the texture becomes increasingly polyphonic and the harmonies increasingly dissonant through vertical elaboration. The tritone transposition in variations 5 and 6 soon becomes a full minor-third transpositional cycle. Subsections acquire their own motivic and expressive characters, like parts of a growing, differentiating organism. The (0 1 6 7) chord evolves into a scherzando section with octatonic passagework, the (0 2 5 7) chord into a mysteriously lyrical passage. The final cadence eventually dissipates into disjunct, noise-like sounds.

The idea of making a coherent harmonic syntax out of different chord types with varying degrees of dissonance came from an earlier, unpublished study (originally my unfinished doctoral dissertation) on the early music of Schoenberg. One thinks first of all of the opening progression of his Chamber Symphony, Op. 9, whose opening progression (fourth-chord→whole-tone chord→triad) governs so much of that piece's harmonic and motivic material. Equally suggestive was Schoenberg's Second Quartet, Op. 10, whose basic cadential motion is the double leading-tone structure, D→T, shown in fig. 1. One also finds this progression in Bartók and early Stravinsky.

Theory obviously influenced composition in the procedure shown in fig. 1, above all in the concept of expanding variations with its hierarchical

Figure 1: The first six expanding variations of the First String Quartet, notated in prolongational format.



elaborations. But composition also influenced theory, although at the time I had little inkling of it. First is the intuition of harmonic functions, defined by prolongational position. Second is the whole-step to half-step voice-leading, which I would now explain by my theory of voice-leading attractions. Third is the employment of sensory consonance and dissonance as a structural strategy to replace the absence of a complex pitch space. This notion is implicit in Hindemith's (1937/1942) theory of harmonic fluctuation, and it broadly relates to ideas in the current school of spectral composition. In terms of my own work, however, all three theoretical ideas are developed systematically only in *TPS*. I was groping in the First Quartet toward ideas that I was able to formulate only many years later.

My music has relied upon a number of other theory-inspired structures as well. *GTTM*'s theory of grouping and meter has been a constant resource, as has the theory of scales described in *TPS*. I have simulated

timbral hierarchies (Lerdahl 1987) in orchestral settings and have often used *TPS*'s fundamental construct, the "basic space," in both its diatonic and various chromatic versions. There is much more to do in this regard, especially in relation to pitch-space paths and the calibration of patterns of tension and attraction.

In brief, my theoretical work has spawned not a comprehensive compositional system but a collection of related procedures that share a cognitive perspective. These procedures give my body of music, no matter how different individual pieces may be, an underlying unity and trajectory. To conceive a new work means, in part, to position it with respect to the previous use of these procedures and to open up new territory in relation to them. At the same time, there is a good deal in my composing that remains unsystematic. One of my ideals for a compositional method is that it seamlessly integrate the intuitive and the systematic. The best theory, in my view, feels so uncontrived that it seems to disappear into the musical fabric.

Modernism, Postmodernism, and Exploration

One of late musical modernism's attitudes for which I have little sympathy is its rejection of references to the past. Earlier modernists did not feel this way. Debussy and Schoenberg, for instance, freely evoked past styles as the aesthetic occasion demanded. With postwar modernism, however, such evocations came to be seen as embarrassing lapses or, if pursued to any length, a symptom of mental softening. Because of this attitude, Strauss was believed to be in decline after *Elektra;* Berg was seen as a nostalgic Romantic, inferior to the constructivist Webern; Bartók's high point was judged to be the acerbic and rigorous Fourth Quartet, after which his work supposedly weakened with the increasing use of triads and folk tunes. This attitude is still prevalent among latter-day modernists, who shudder when a triad or a tonally referential melodic figure appears in a new work. Minimalist pieces are less likely to evoke this reaction, probably because extreme repetition neutralizes the material.

That I have no affinity for this attitude was already clear in the decision in *GTTM* to focus on Classical tonal music as the idiom through which to erect a theory of musical cognition. *TPS* shows how the same underlying formalisms apply, with appropriate adjustments depending on the stylistic input, to highly chromatic and atonal music. In both theory and composition, I have a unified rather than compartmentalized view of music. For my music to shun allusions to older music would be out of character.

A second modernist attitude that I do not share is its projection of an impersonal mask. One hears this in the music of composers as different as Babbitt, Boulez, Ligeti, Reich, and Andriessen. The stance tends to be one

of tough objectivity. Evidently this is a reaction against the subjective inwardness of the Romantics and the second Viennese school. The frequent use of quasi-mechanical processes assists this aesthetic stance.

The double effect of eschewing the past and the subjective is to lend much late modernist music a one-dimensional quality. This attribute is unlike the other-directed spirituality of a Palestrina or a Messiaen; it is self-contained, often sensuous but cold. Soon this music will be old, and it will not evoke a web of cultural and expressive reference in the way that, say, *Pierrot Lunaire* and *Agon* continue to do.

Yet I rarely feel affinity for postmodernists who freely quote or imitate earlier tonal models and who indulge in a Romantic confessional mode. My objection is less one of principle than of realization. In my view, quotation works only if it is done with irony and if it fits structurally within its context; imitation succeeds only if it is realized as well as that which it imitates. Subjective expression is at least as demanding in its constraints (even if they are difficult to articulate) as the most hard-edged construction.

In my dedication to systematic thinking and formal coherence, then, I am more modernist than postmodernist. Yet, if the occasion calls for it, I enjoy the challenge of incorporating allusions into my musical style in an organic way. Nor do I hide behind a hard mask and deny personal expression, a posture that seems to me sterile. I lose interest in music that lacks inwardness. In short, I do not conform to either the modernist or the postmodernist stereotype.

A different angle on the modern/postmodern issue is the extent to which a composer explores new territory. For composers of earlier generations, this usually meant breaking the barriers of what had been stylistically normative or acceptable. Works of this kind are *Erwartung, Gruppen, 4'33"*, and *Atmosphères*. The exploratory spirit would seem to be the province of the modernist. Yet one of the first postmodern works, Berio's *Sinfonia,* was composed in an exploratory spirit; so was Adams's *Harmonielehre.* With no more rules to break in the old avant-garde sense, what counts as exploratory has become a rather subtle matter.

I value the exploratory spirit, but for me it has taken a different form than for the usual modernist. Recovering tonality in a fresh sense and being able to juxtapose the extremes of consonance and dissonance in a coherent way seemed very exploratory when I started doing these things in 1974. Inventing the syntax shown in figure 1 was exploratory. A similar spirit hovered over a 1994 orchestral piece that was written *pianissimo* throughout and completely in streamed, overlapping, and expanding and contracting variations. My sense of the exploratory is driven not by breaking down old barriers but by the urge to find new ways to organize existing materials. The problem of musical syntax haunted the twentieth century

and remains a primary issue for the twenty-first century. Beginning with the breakdown of traditional tonality almost a century ago, this issue seems to me to be the fundamental problem of modern music, even more than the commerical decline of classical compared to pop music or the marginalization of contemporary within classical music.

Boulez, as I understand it, faced the modernist crisis in the 1960s and envisioned a solution different from what has been discussed here. Seeking to continue to be exploratory in the traditional avant-garde fashion, he found himself outflanked by the experiments of Stockhausen and Cage and enmeshed in the hopeless dialectic of total serialism vs. chance. There was no consensual wave of the future, no way to lead as before. He instead imagined the *deus ex machina* of music technology and began plans for what became IRCAM. If music history and the barrier-breaking mentality of the avant-garde no longer guided musical progress, then technology, which is incontestably in a perpetual state of revolution, might come to the rescue. And in a crucial way Boulez has been proven right. The exploratory spirit among young composers has migrated increasingly to applications of computer technology. However, technology only offers new means; it does not solve the cognitive and aesthetic problems of musical organization.

I welcome exploration through music technology and am glad to engage it. In this regard I have two broad research goals that impinge on my compositional thinking. First, computational models of cognitive music theories, including the combined *GTTM/TPS* theory, promise to facilitate the investigation of cognitively transparent compositional systems. Implementation will render trivial some compositional methods that used to be seen as profound and will facilitate perceptually viable computations that before would have been inconceivable. Second, computer technology enables the exploration of timbral organization and its relation to other musical dimensions. For more than a century, timbre has played an increasingly central role in composition, but its structure-carrying potential is still poorly understood. A related development is the growing use of microtonal tunings. These tendencies are especially evident in the spectral approach to composition. Spectralism's main shortcoming is that it has not succeeded in bridging the gap between the exploration of sound and audible form; the timbres and tunings cannot yet bear the musical weight that is demanded of them.

To pursue issues such as these stirs my creative imagination. I hardly expect many composers to share this appetite, although I think it would be good if American composers placed more value on the intellectual side of their craft. In any event, such has been my path, and as I continue my explorations I shall make compositions that incorporate cognitively plausible modes of organization, accept the past, and express inwardness.

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Fruits and Vegetables

By Alvin Lucier

In May of 1999 I happened to be in Prague for the first performance of *Diamonds,* a new work for three orchestras. Petr Kotik, who had commissioned the work for The Orchestra of the SEM Ensemble and the Janáček Philharmonic, had organized two orchestral concerts for the Prague Spring Festival. The first had the title Music in Space. Besides *Diamonds,* it included Earle Brown's *Modules I, II, III;* two Canzoni from the *Sacrae symphoniae* of Giovanni Gabrieli; and Stockhausen's *Gruppen.* While I was there I had lunch at the Maly [small] Buddha, a vegetarian restaurant near the Hradcany Castle, with pianist Joseph Kubera and singer Thomas Buckner. Joe was the solo pianist in *Gruppen* and Tom was soloist in Roscoe Mitchell's *Fallen Heroes,* a featured work on the second concert. The meal was memorable. Never had I tasted vegetarian food so fragrant and delicious. I highly recommend the Maly Buddha to all my friends. (Uvoz 46, Prague 1, Hradcany, Tel/Fax: 02-20513894.) Later that summer I started working on a commission from Tom Buckner for a new work for baritone voice. I immediately thought of writing a song cycle for voice and piano, a work that Tom and Joe could perform.

For several years I have been developing a method of composition in which voices and instruments sustain tones against pure-wave oscillators, creating audible beats that occur when two or more closely tuned sound waves coincide. I use electronically generated waves because their purity (no overtones) produces vivid beating against the richer, more complex instrumental sounds. I began experimenting with this phenomenon in the early '80s, when performers started asking me for works. I wanted to make music for conventional instruments with the same aesthetic that informed my earlier electronic pieces (which often explored brain waves, echoes, and room resonances). I have always been drawn to sound that does *work,* that causes something physical to happen.

There are two ways I go about this: 1) sustain one or more pure waves and ask the performer to microtune tones against them, causing beats at various speeds (the farther apart, the faster the beating; at unison no beating occurs); and 2) design oscillator-sweeps against which the players sustain fixed tones. Since the waves are in constant motion, the beating speeds continually change. In *Still and Moving Lines of Silence in Families of Hyperbolas* (1984), a series of eleven solos and a duet, players detune sustained pitches around one or more stationary waves. I didn't specify exact tunings—that would have been impossible for the players to execute;

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instead I asked them to make equal steps in one direction or another against the pure waves. As long as the pitches move in the required direction without inadvertent backtracking, I am satisfied. Included were four solos for mallet instruments. Since their pitches are fixed, the player repeats the same tone, varying the tempi of the repetitions, causing overlap, truncations, and elongations of the fixed beating caused by the differences in pitch between the mallet instruments and the oscillators. In *Septet for Three Winds and Four Strings* (1985), however, the players tune precisely above and below a sustained oscillator tone, in terms of cents, with the help of electronic tuners. In *In Memoriam Jon Higgins* (1985) a clarinetist holds minute-long fixed tones straddled across a continually rising wave that sweeps up the entire clarinet range. In the more recent *Wind Shadows* (1994), a trombonist tunes one, two, and three cycles above and below two closely tuned sine waves that beat once every ten seconds.

Under certain circumstances, slowly beating pure waves may seem to spin across the room, moving from the higher source to the lower. This is vivid in *In Memoriam Jon Higgins,* when near-unisons are reached between the sustaining clarinet tones and the slowly ascending pure waves. Most of the time it is very difficult to perceive, especially when more than one or two instruments are sounding and the beating is rapid. In a controlled environment, however, the effect is vivid. In the sound installation *Seesaw* (1983), a pure-wave oscillator slowly sweeps around a fixed tone, causing beats to slow down and speed up. As it does so, the movement changes direction from one loudspeaker to the other as the sliding wave moves above and below the fixed one. In an installation at the Whitney Museum in New York, I treated the walls with Sonex, an acoustic-absorptive material, which virtually eliminated reflections. The spinning effect was extremely vivid.

Against sweeping waves, one has three options as to tone placement: 1) starting a tone simultaneously with the oscillator tone against which it is to beat, in which case the beating starts at zero and speeds up as the wave moves away from it; 2) anticipating the tone's arrival and then stopping at the unison, so that the beating will start fast and slow down to zero; or 3) straddling the tone, so that the beating starts fast, slows down to zero at unison, then speeds up again as it passes to the "other side" of the fixed tone. In each case the speed of the beating depends on the frequencies of the pitches and how far apart they are at any given moment. At each higher octave the frequencies double, as do the beating speeds. For solo works, I often simply notate the performers' pitches simultaneously with the pure-wave tones, allowing the performer the leeway to anticipate or delay her pitches. In *Music for Piano with Slow Sweep, Pure Wave Oscillators*

(1992) I notate two pitches per pure-wave semitone because the pure-tone sweeps are so slow—18 and 22 seconds between semitones—and the decay time of the piano is so short (see fig. 1).

In *Crossings* (1982), for small orchestra, the instruments invariably straddle a slowly ascending wave. The players watch a television monitor upon which are displayed the frequencies of the wave as it rises from the lowest double bass note to the highest reaches of the piccolo range. In *Six Geometries* (1992), for small chorus, these gestures are used to produce a more varied four-voice counterpoint (see fig. 2).

I have discovered that three intervals produce vivid beating patterns: the near-unison (most vivid), and, because of the strong second and third partials, the near-octave (less vivid), and the near-perfect twelfth below (least vivid). Having three pitch choices, one can lead voices in contrary motion, defeating the inexorable chromatic motion demanded by ascending and descending sweeps. For example, starting with two waves moving away from unison in opposite directions, one can simply track the sweeps' pitches stepwise from semitone to semitone, stepping and skipping up or down from the lower to the upper sweep, or through octave displacement produce Webernesque melodic lines consisting of leaps of sevenths and ninths. Furthermore, when two waves reach an octave or a perfect fifth, a single instrumental tone—the near-unison with the lower tone of an octave and the near-twelfth below the fifth of the perfect fifth—will create double beating. I look for this opportunity to use single tones as a way to relieve the constancy of two-part writing (see fig. 1).

For works using fixed oscillator pitches, I record them at home with digital oscillators onto DAT tape or compact disc. For those that require sweeps, I describe the precise motions of the waves—in cycles per second and in seconds in time—then send the information to sound engineer Bob Bielecki, who has made a computer program that executes the shapes on DAT tape. I send dubs on compact disc to my publisher, Material Press in Kiel, along with the written score.

For this new work I decided to use sweeping oscillators because of the fixed pitches of the piano and to ensure that the beating would be as vivid as possible. In an earlier work for Buckner, *Music for Baritone with Slow Sweep, Pure Wave Oscillators* (1993), I freely "drew" rising and falling shapes against which Tom would sustain wordless long tones. I used two lines only; Tom would move from one to another. In *Still Lives* (1995), a suite of eight piano pieces I wrote for Kubera, I simply drew objects I saw around my house, including a lampshade, a bread knife, and a hammock in the backyard. I sketched those items and freely outlined them on staff paper. I didn't try to draw them to scale. The shapes and their musical manifestations are more impressionistic than accurate. I drew a few shapes,

Figure 1: *Music for Piano with Slow Sweep, Pure Wave Oscillators,* excerpt.

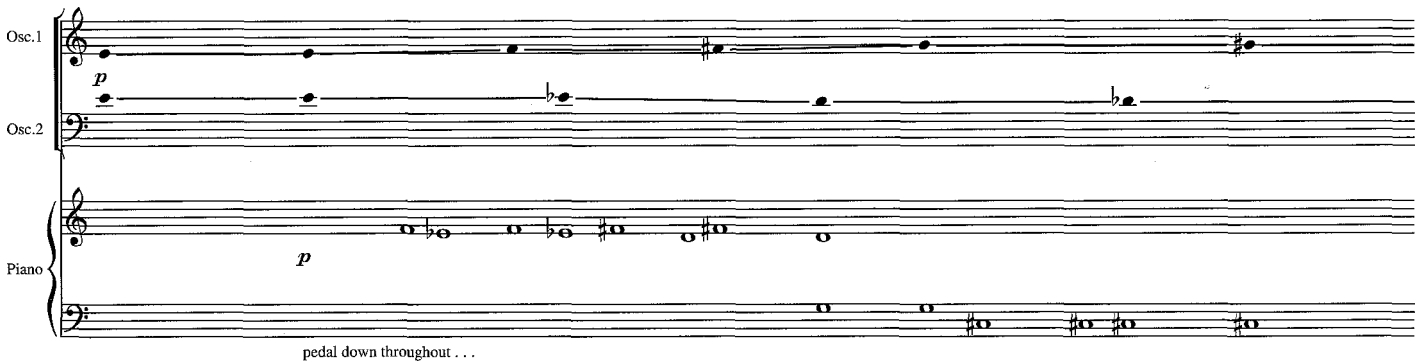


Figure 2: *Small Fish Logo,* from *Six Geometries.*

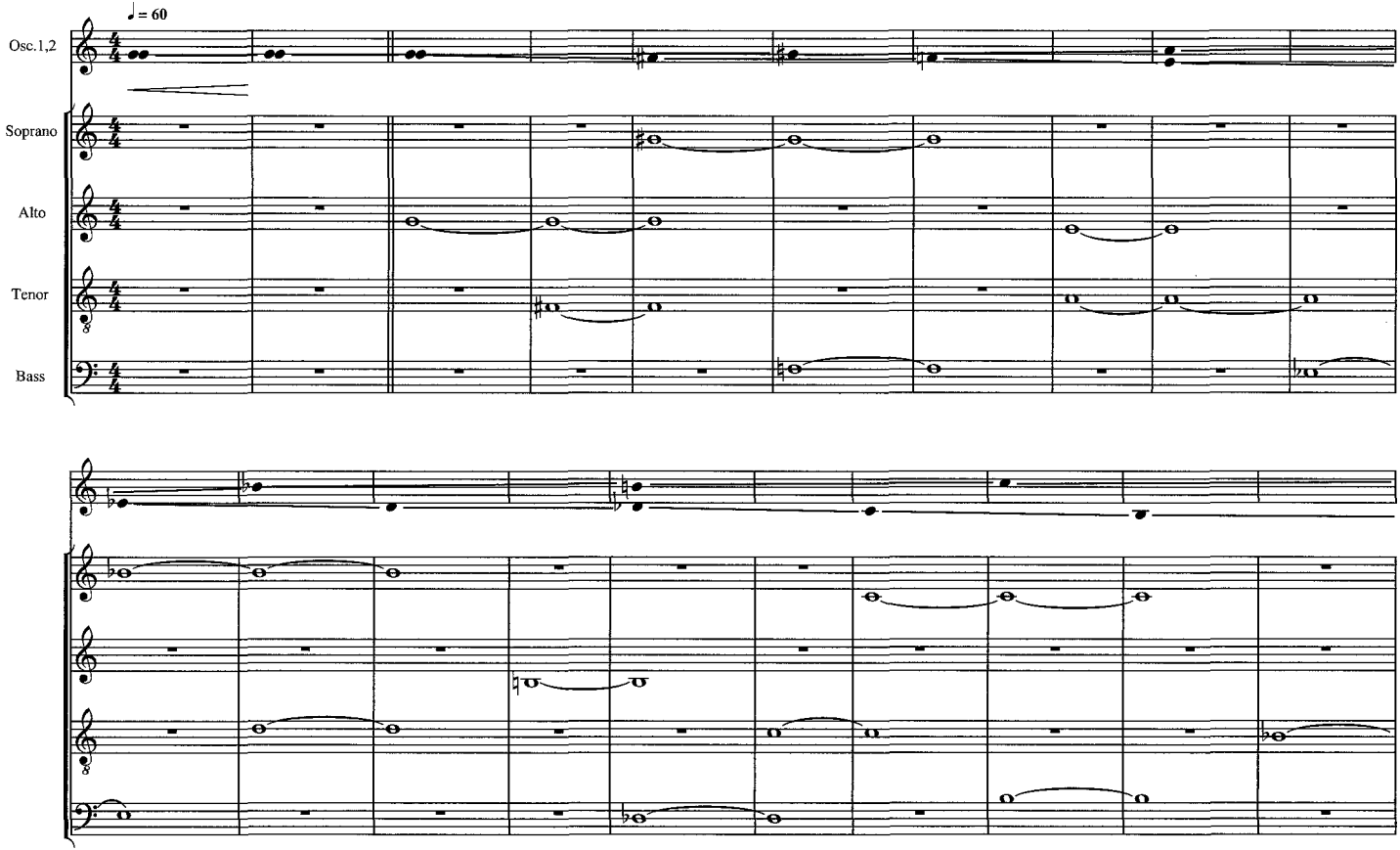
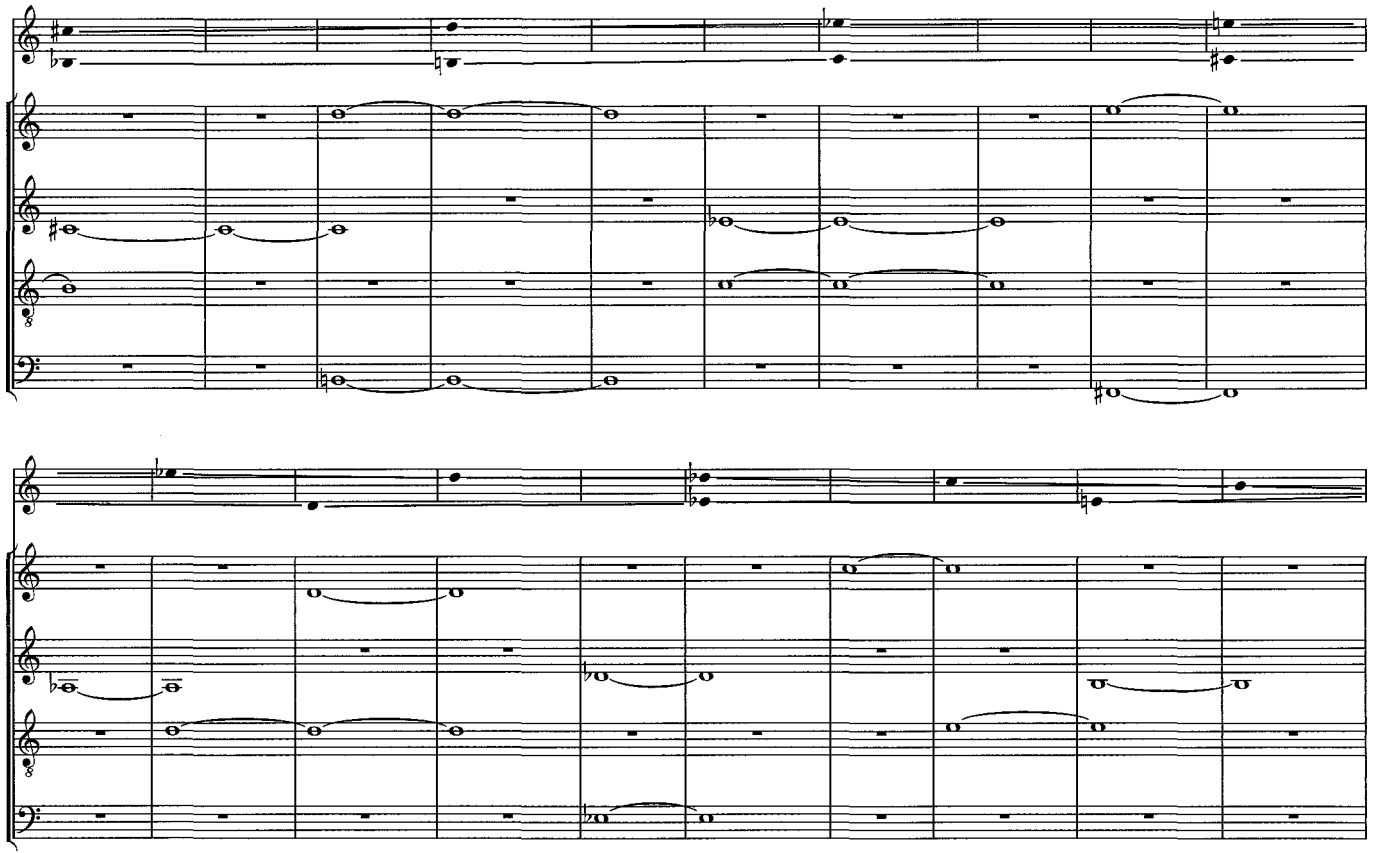


Figure 2 (cont.)



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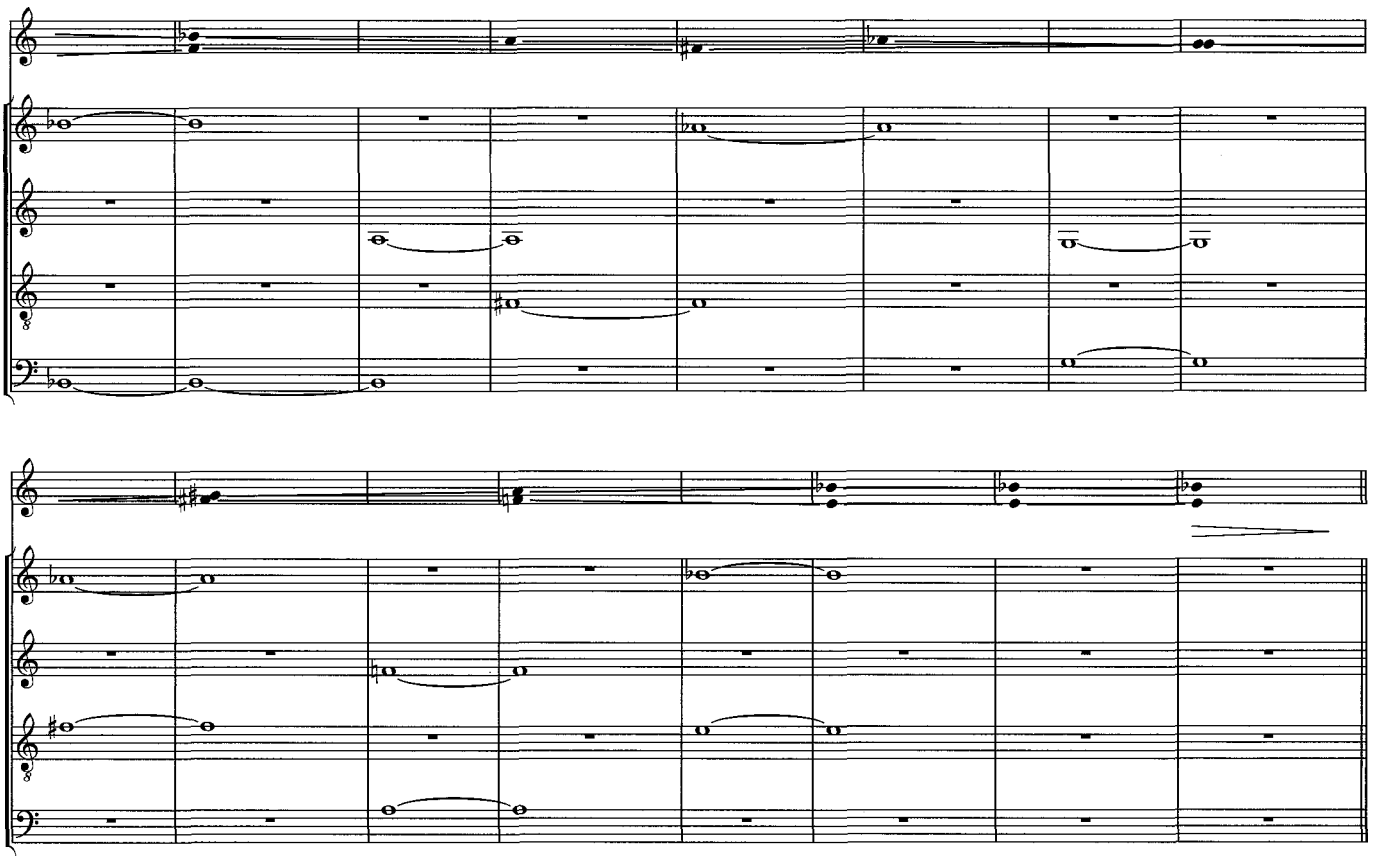


including a fern growing outside a window in my living room, with three oscillators. This enabled me to generate three- and four-note chords.

* * *

As a remembrance of that exquisite meal we had in Prague, and as a gesture to the passionate vegetarianism of Tom and Joe, I decided to use as my shapes a collection of fruits and vegetables. In the early sixties in Venice, while on a Fulbright Scholarship to Italy, I had encountered the works of Renaissance painter Carlo Crivelli (b. Milan 1527) and had been entranced by the beauty and richness of the fruits and vegetables that often framed his paintings. I was reminded, too, of Italian painter Giuseppe Arcimboldo's *Vegetable Garden* (c. 1590), in which a bowl of vegetables, when viewed upside down, becomes a face with a hat. I am aware of the ridicule I may encounter for using *Fruits and Vegetables* as a title, but I have decided to use it nonetheless.

First, I traced each vegetable and measured it lengthwise and vertically, getting a rough idea of its size. For each inch along its length I apportioned four measures of 4/4 time. For example, the red pepper, lying on its side, measured five inches, producing a 20-measure piece. At a tempo of a quarter note equals 52″, I got a 1′36″ song. I generally (though not always) used the height of each vegetable as a rough guide to the range of the sweeps. The pepper was about three inches at its widest; I started with a three-octave spread. It had a bulge along its length, so I drew two horizontal ridges, outlining that bulge, at not quite equidistant intervals: two minor sixths, a fifth apart. Thus there are four oscillator tones: two for the outline of the shape—F 87.3 cycles per second on the bottom and F 349 cps on top—and two for the ridges: D 146.8 cps and A 220. The outside tones sweep inward at slightly different speeds, the inner ones at about half those speeds, for over a minute, then abruptly curve into a perfect fourth at the end of the piece. In general, if an object showed no horizontal lines or striations, I simply drew an outline of the shape. If it had lines, I used that number of oscillator tones. For example, the celery stalk had twelve horizontal lines along its length; correspondingly, I used twelve oscillators.

For each song I made a chart of the oscillator sweeps in terms of frequency and timing. Below is the chart for the first song, *Red Pepper.* Letters in parentheses indicate the stereo placement of the oscillators: Right, Right Center, Left Center, and Left. Fade-ins of four beats are included within the sweeping waves (4.6″); fade-outs are longer, eight beats (9.2″), to allow time for the piano tone(s) to decay (see fig. 3). No dynamics are given; rather, they are chosen by the performers to produce the most effective beating.

Red Pepper

Osc. 1 (R) F 349 cps: 65.8″ (including 4.6″ fade-in) down to D 293.7; 9.2″ down to C 261.6; 10.4″ down to A 220; 9.2″ fade-out to 0. Total time: 94.6″

Osc. 2 (RC) A 220 cps: 65.8″ (including 4.6″ fade-in) down to G 196; 9.2″ down to F 184.9; 6.9″ down to D♯ 155.5; 3.5″ up to E 164.8; 9.2″ fade-out to 0. Total time: 94.6″

Osc. 3 (LC) D 146.8 cps: 65.8″ (including 4.6″ fade-in) up to E 164.8; 13.8″ up to G♯ 207.6; 4.6″ up to B♭ 233; 2.3″ down to A 220; 9.2″ fade-out. Total time: 95.7″

Osc. 4 (L) F 87.3 cps: 65.8″ (including 4.6″ fade-in) up to A 110; 13.8″ up to C♯ 138.6; 4.6″ up to D♯ 155.5; 2.3″ up to E 164.8; 9.2″ fade-out to 0. Total time: 95.7″

See fig. 3 for the notated version of *Red Pepper.* Diagonal lines indicate sweeps. Black note heads indicate chromatic pitches.

There are thirteen songs in all. In several of them, I felt that the shapes were too simple or redundant in relationship to the others, so, for example, I drew *Two Lemons* and *Three Figs,* and for the *Granny Smith Apple* cut it in two and laid the two halves end to end. Within each half was embedded the heart of the apple, which produced a form within a form (see fig. 4).

Another way of lessening the chromaticism generated by the oscillator sweeps, in addition to writing near-octaves and -twelfths, is to sustain pitches through two or three sliding oscillator semitones. If a pitch holds through a series of two, a whole-tone scale is suggested; or if, as in *Two Lemons,* the voice and piano parts hold through three adjacent tones, melodies in minor thirds are generated (see fig. 5).

At certain places in the piece, I had to accept consonances or chords that seemed out of place, that seemed to come from music of another time period. The first-inversion D-minor chord at the very beginning of *Red Pepper,* and a series of ascending and descending diminished sevenths in *Celery* are two examples. For the latter I divided the twelve parallel lines extending the length of the stalk into two six-note chords, running them in contrary motion against each other. The singer and pianist simply outline the notes of the chords. In both cases, the familiar sound images are heard against continually detuning waves, providing a microtonal background. I had originally hoped that this polytuning would provide a context for these and other more familiar sound images, creating an excuse or rationale for their use. I now realize that this doesn't happen and that context is a cop-out. So I simply accept them for what they are: lovely sounds with associations.

Figure 3: *Red Pepper,* from *Fruits and Vegetables.*

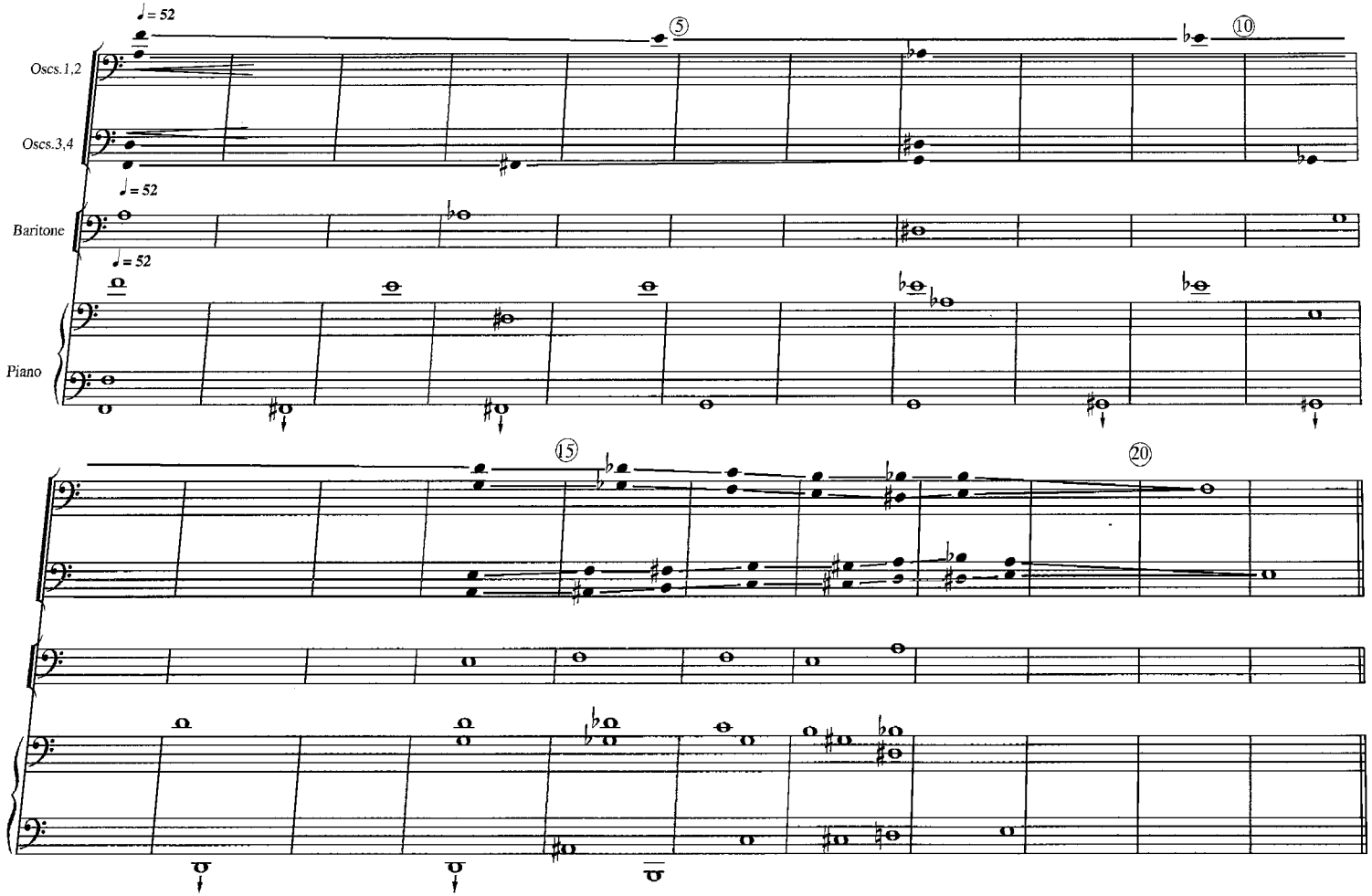
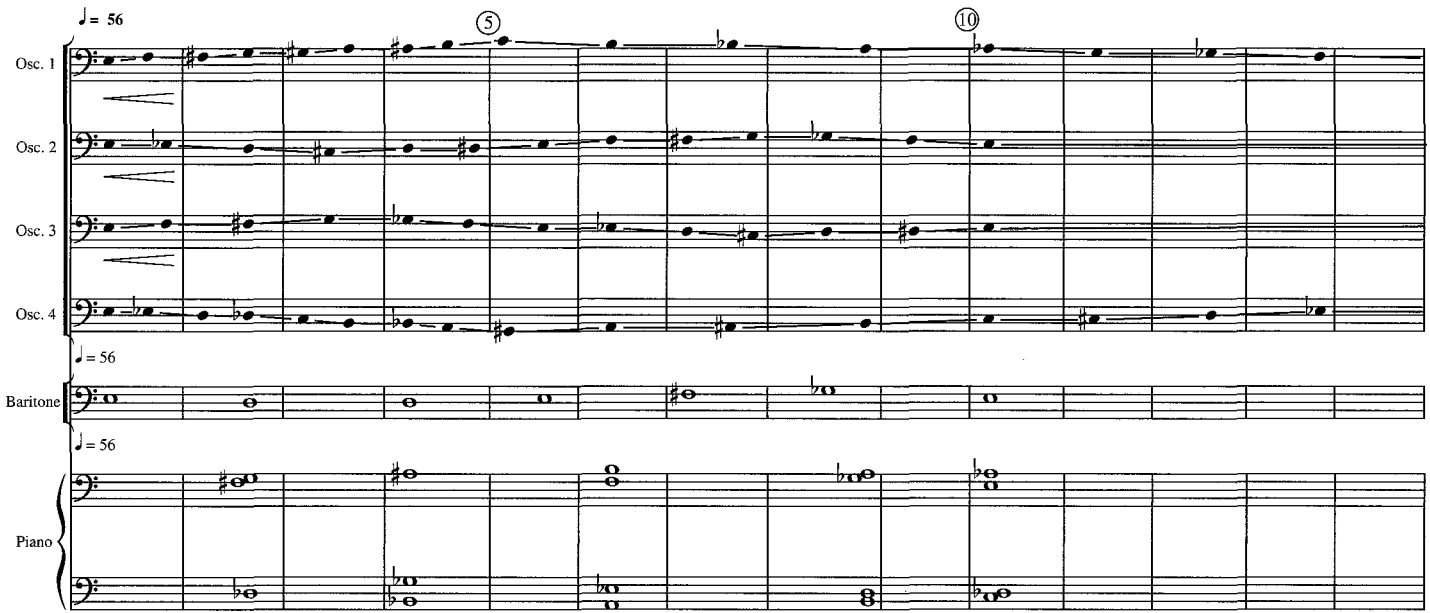


Figure 4: *Granny Smith Apple,* from *Fruits and Vegetables.*



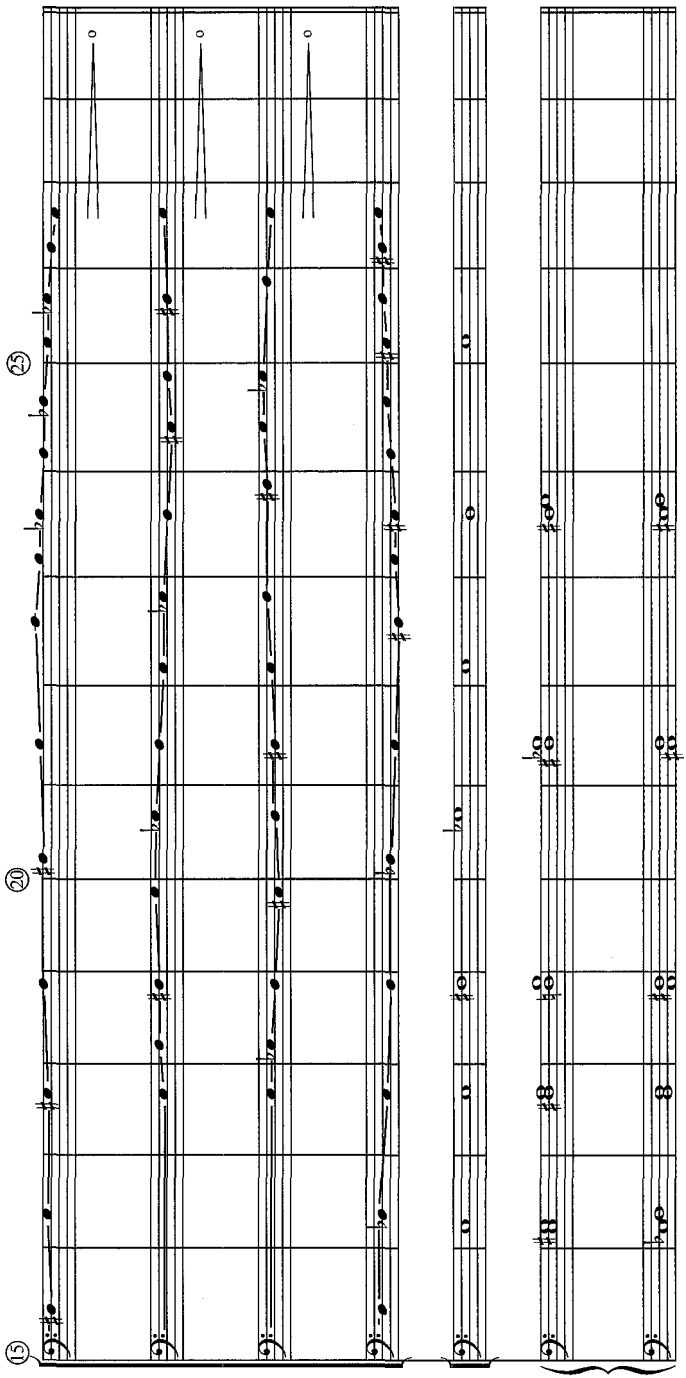
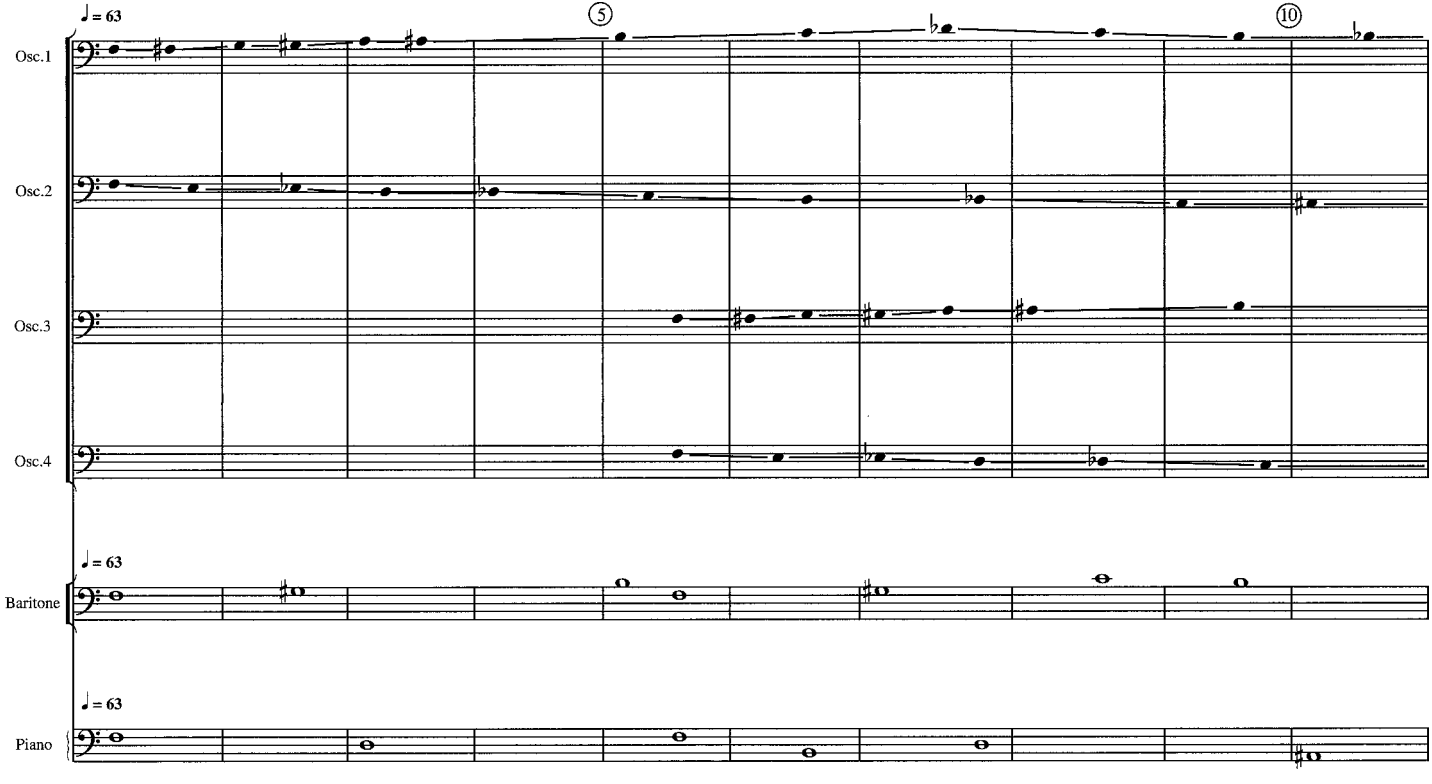


Figure 4 (cont.)

Figure 5: *Two Lemons,* from *Fruits and Vegetables.*



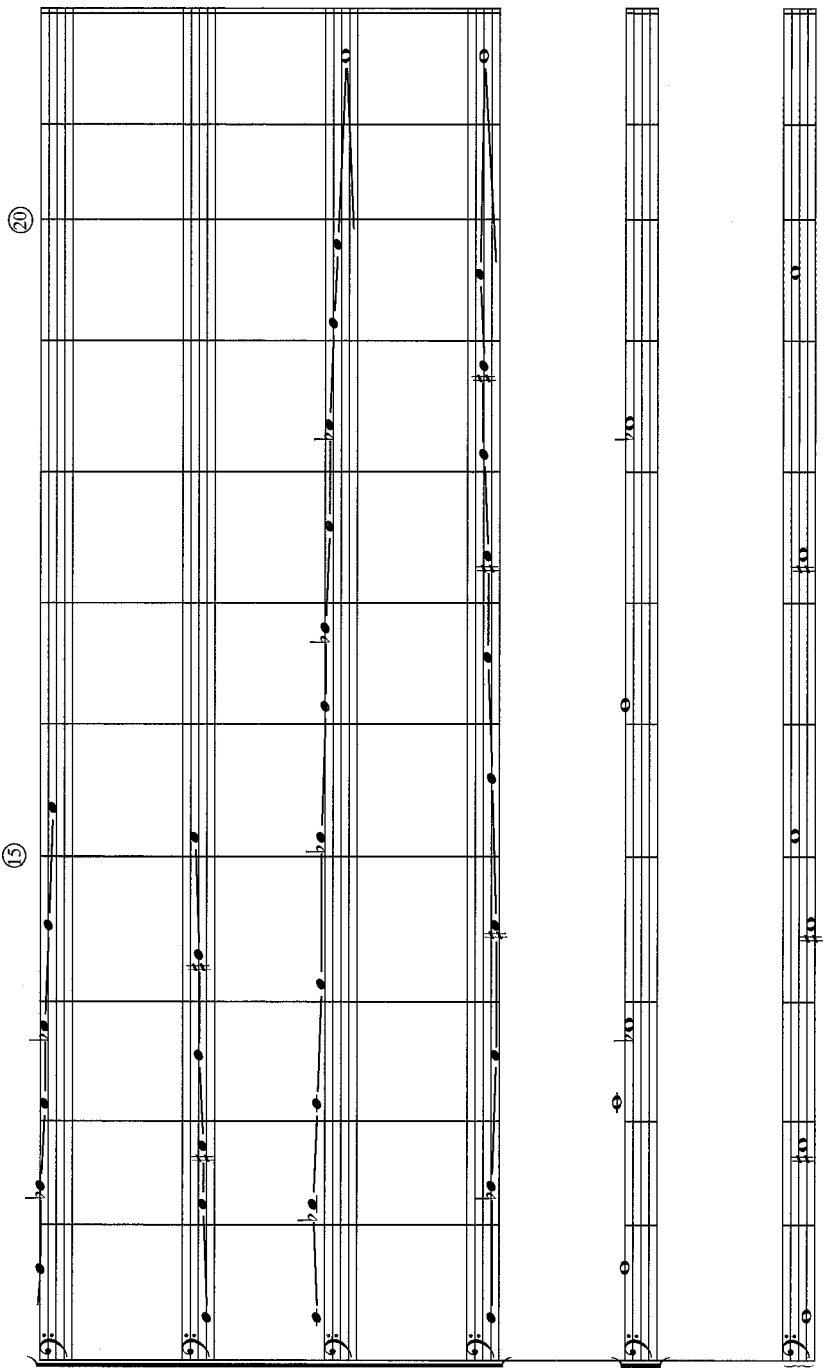


Figure 5 (cont.)

I have made a few works using limited feedback in place of pure waves. In *Music for Gamelan Instruments, Microphones, Amplifiers and Loudspeakers* (1994), microphones are inserted into bowl-shaped *bonangs,* producing sustained tones determined by the size and shape of the bonang and the acoustics of the room. Three *gender* players repeat a series of tones nearly in tune with the bonangs. In *Small Waves* (1997), six glass vessels, some partially filled with water, produce pure tones against which a string quartet, piano, and trombone play long tones. From time to time, water is poured from one vessel to another, raising and lowering the pitches. And in a sound installation titled *Empty Vessels* (1998), microphones are inserted into the mouths of eight vases and melon jars, creating strands of soft feedback that flow out into the room. The movement of visitors disturbs the feedback strands, causing bumps of sound and slight changes in pitch. Occasionally a vase will stop sounding completely. In *Music for Gamelan* the pitches of the resonating bonangs are indeterminate; the gender players search for them as part of the process of the performance. In *Small Waves* the pitches of the feedback strands are determined by the size of each vessel as well as the microphones inside. In *Empty Vessels* the chord produced by the eight sounding vessels was chosen by ear and remains the same from installation to installation.

* * *

I have made several works for instruments without oscillators, in which stringed instruments do the sweeping. In *Navigations for Strings* (1992), for string quartet, I direct the players to strive for impossibly minute microtunings, with the understanding that they are impossible to hear and execute. I wanted the quartet to have a guide in compressing a minor-third interval to unison over a fifteen-minute performance. In *Serenade for Oboe and Strings* (1993), as the four strings sweep from a major 2nd out to a major 3rd and back, an oboist plays all 55 of the permutations of the five tones within a major third, creating beating of various speeds as it catches the strings' tones at different points along rising and falling sweeps. In these two works the beating is vivid enough for discriminating listeners. In *Fideliotrio* (1993), for viola, cello, and piano, the strings sweep in opposite directions away from, and back to, a repeated A-220 cps in the piano. The first minute or so sounds like an out-of-tune piano, with the viola and cello acting as fourth and fifth strings in addition to the three piano strings. The results are not as vivid as the two previously mentioned works, but retain a musical presence nonetheless.

In *Diamonds* the string sections of three orchestras draw differing diamond shapes, each one at a slightly different speed from the others, caus-

ing the shapes to phase out from each other. I had hoped that the sustained wind, brass, and percussion (slow-rolling glockenspiels) would beat not only against the sweeps within their own orchestral group, but with the other two as well. In the Spanish Hall of the Hradcany Castle this wasn't noticeable; the orchestras were positioned far too far apart for true physical interaction to take place. I was also disappointed that beating in the upper ranges of the orchestra wasn't as vivid as in the lower; in fact, sometimes you couldn't hear beating at all, although the work did succeed on a musical level. A few months later, however, a curious thing happened. I was playing a CD of the performance in my spouse's Subaru. The loudspeakers were positioned on the lower part of the front and back doors. Much to my surprise, I heard remarkable beating in the higher registers! A plausible reason is that the smaller loudspeakers don't project the low frequencies with as much energy as live performance or a bigger sound system, thereby allowing the highs to be more present. The small car space, too, might act as a high-pass filter.

Music as an Action Sport

By Steven Mackey

Introduction

I have never been one of those composers who take musical dictation directly from God. I need to massage the material before it congeals into something that excites me. Part of the problem is that, like Groucho Marx, "I refuse to join any club that would have me as a member." In my case, I refuse to accept any idea that my brain can think of. The music I want to hear is quirky and psychedelic and deals with fringe states of consciousness rather than logical thought or brand-name emotion. Consequently, I have tried to incorporate a variety of activities—including, but not limited to, staring at a blank page waiting for divine intervention—that allow me to engage the material, and the creative process itself, in a way that will more likely shake out an idea that surprises and delights me. My aim is to enlist the whole organism in collaboration with the gray matter in the hope of being true to a wider range of experience.

The notion that how we make music is reflected in the music made suggests an intermediate step in the chestnut of wisdom that art reflects the culture from which it came. From a practical point of view, a cultural milieu exerts its influence on music by inciting and reinforcing certain music-making activities, and those activities have a direct and powerful influence on the music that is made.

My formative years were in northern California in the late '60s and early '70s, where the dominant music-making activity among my peers was garage band rehearsals and jam sessions in grungy spaces lit by black lights and candles, adorned with beads and posters, and infused with incense and aromatic herbs. The context, including the music-making, was intended to incite transcendental experience.

Practice meant improvising by myself, making up new licks that would fit in a blues or some other common modal jam, or stealing solos, note for note, from recorded masters like Jimi Hendrix, Jimmy Page, Carlos Santana, Eric Clapton, and Duane Allman. Composing an original new song was a collaborative venture. I might "make up" (nothing was ever written down) a song—that is, the basic groove, chords and tune—then play it for my mates who would design figuration on their instruments that would "go with" it in some intuitive sense.

In graduate school at SUNY Stony Brook (M.A. 1980) and Brandeis University (Ph.D. 1985), I spent most of my time sitting at a well-lit desk

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with music paper, graph paper, and a box of number 2 pencils. I was quite comfortable with this model of compositional activity. The pleasurable absorption of designing twelve-tone partition arrays was quite similar to working out problems as an undergraduate physics major at UC Davis.

Collaboration

When I began teaching at Princeton, I felt great support and encouragement from my colleagues Paul Lansky and Jim Randall for making use of my checkered past as a rock musician and electric guitar player. Paul and I collaborated with some of the graduate composers (like Brad Garton and Martin Butler) in a few "novelty songs." It was a way for them to experiment with the new MIDI technology without the pressure of inventing an original masterpiece, a way for me to ease out of retirement as a guitar player, and a chance for all of us to rejoin a collaborative culture. Perhaps the fact that many of our students back then (and now) became interested in music technology through pop music explains why they, like me, feel comfortable in collaborative situations.

Paul and I have since collaborated on a few works that are bona fide entries in our catalogues, the most recent being a musical chain letter instigated by his idea for a piece for tape and improvising guitarist, from 1995. The tape part sounds like a couple of fabulous percussionists, with a background of sustained notes that vary from sparse pedal tones to a fabric of slow counterpoint. I dubbed his two-track stereo tape part onto two channels of my eight-track Tascam DA88 and, in a process quite similar to working out my part to a new song in a rock band, began "making up" (nothing written down) a guitar part that defers to, reinforces, accepts, contradicts, and ignores the tape. (Our collaboration—*Dancetracks*—is on my electric guitar CD *Lost and Found,* on Bridge Records.) The chain letter went back to Paul a couple of years later when I gave him my guitar tracks, without his original tape part. He rearranged them and added a new computer orchestra and released *Dancetracks: Remix* on his Bridge CD called *Ride.*

I suspect that my comfort with the working method of *Dancetracks*—creating additional contrapuntal layers to an existing strand of music—owes as much to my involvement with pre-Baroque music as it does to playing in rock bands. As an undergraduate, I moved from the electric guitar to the classical guitar and then to the lute. Until my last year in college, I thought I would grow up to be an early music ensemble director. *Cantus firmus* technique continues to be of interest to me. Unlike many composers for whom an idea takes the form of a brief, harmonically fully realized fragment, my ideas are often long monodic strands that remain more or less intact with the addition of other parts. An extreme example is *Troubadour Songs* (1990), for electric guitar and string quartet. This

piece was created by writing a string quartet part, in counterpoint, to an existing solo guitar piece of mine—*Myrtle and Mint.*

Improvisation

In addition to collaborative work, coming to Princeton got me improvising again. During my first week, in 1985, Jim Randall suggested that we improvise together—as he put it, "You on the electric guitar and me on . . . let's say, the front end of the piano." This led to jam sessions with students and friends; the best composition lessons I have ever given or received were improv sessions. Over the years, I have filled hours of cassette tape with various partners, which has transformed my music in several ways.

First of all, I got a sense of how the electric guitar, my instrument, might function in a non–rock/blues/jazz context. After ten years as a recovering rock guitar player I had forgotten all my licks, which is the best thing that could have happened. I had to relearn electric guitar with the sensibilities and preoccupations of a composer of concert music. Blues patterns that were once indelibly etched on the guitar fingerboard like footprints on a fox-trot diagram had faded to make room for all kinds of constructions that I was forced to invent in order to *go with* my improvising partners. I started including electric guitar, now unhinged in my mind from Led Zeppelin covers, into my compositions. The first was *Troubadour Songs.*

There are moments in these improv tapes that jump out as particularly fresh and vivid. It turned out that these moments were either blatant violations of grad-school taboos about harmony and counterpoint, or simply unheard-of, wacky combinations that nobody could ever *think* of; they had to just happen. Instead of clean, tidy counterpoint where each part contributed to a controllable governing harmony, I began to think more of a counterpoint where things coexisted in some aural intuitive sense—more like my illiterate rock band collaborations.

Composing at a well-lit desk with pencil and paper has many biases. I could almost feel my hands get stuck in the ruts that would guide me toward respectable voice-leading. It was as if I were channeling Arnold Schoenberg. It was clear that I needed to invent a different working method if I was going to be able to tickle some of these fancies that improv excited. I needed to find a way to make mud pies instead of etching such articulate lines on paper.

Around this time my father had a stroke, which transformed an articulate, witty man into a clump of unfinished sentences, punctuated with frustrated expletives as he realized that his sentence had gone askew. He had meant to say, "Did you turn off the light in the garage?" But what came out was, "Is the oven still . . . shit!" I wanted to capture this mode of

expression in a composition: music that would be an homage to dogs, dolphins and my father after his stroke—creatures with soul but without syntax.

Making Mud Pies: *On All Fours*, for String Quartet

I borrowed a cello from the music department. My first meaningful act was deciding that the cello part should be in a radical scordatura with the strings tuned as follows: first string: down a major third to F; second string: up a minor second and a quarter tone to halfway between D♯ and E; third string: down a quarter tone to half way between F♯ and G; fourth string: a normal low C. This, obviously, changes the whole underlying resonance of the quartet. The open strings buzzed in a microtonal *klang*, dulling the bright ringing of open fifths. The cello I borrowed had fallen into some disrepair and was out of tune when I got it. I can't claim that it was in this particular tuning when I first strummed it, but its stressed intonation did suggest a kind of resonance with my image of my father's condition. I arrived at the eventual scordatura through trial and error. I think this tuning reflects my blues roots: in relation to the low open C, the third and second strings are plausible "blue" versions of fifth and third scale degrees, respectively. The first string is the subdominant (more significant than the dominant in a blues context, although, at the time, I was simply fascinated by the disoriented sourness of the 3/4-tone interval between the first and second strings). This interval is ubiquitous in the piece.

As in the old days, before I could read music, I just started playing with this cello. I put pieces of scotch tape where the frets *should have* been so I could keep track of where my fingers were landing. I "made up" the cello part in the first section of *On All Fours* (see fig. 1), recorded it, then notated it. Note that there are two staves. The top staff indicates *suoni reali* while the bottom is something like a tabulature indicating where the fingers go.

This more playful activity had indeed enabled me to create a cello part with a tonal landscape that I could not *think of*, but the downside is that the process had not unpacked a handy algorithm to generate material that would combine or develop. I hesitate to confess what actually inspired the detuned violin part that runs through this beginning and is one of the piece's most memorable features. I think the scordatura violin part I eventually arrived at is faithful to my original idea of expressive yet inarticulate communication: grunting, wheezing, and moaning, and I really like the variety of gestures and nuance that are coaxed from this utterly unrefined voice. I wish I could say I pursued that sound with a definite purpose since the truth is so preposterous: I had been wrestling with how the other instruments might combine with the cello part—in terms of more traditional violin and/or viola techniques—without much success. While practicing

Figure 1: *On All Fours,* mm. 1–14.

Commissioned by Chamber Music Chicago

ON ALL FOURS

Steven Mackey (1990)

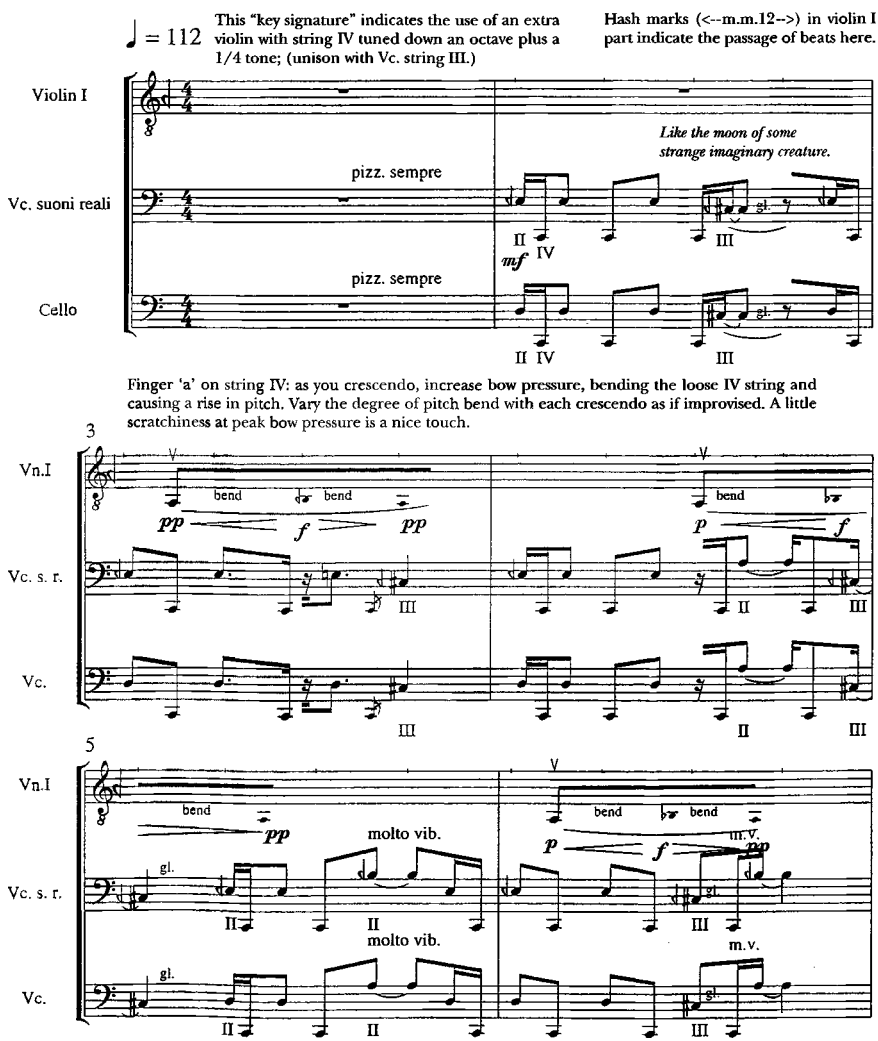


Figure 1 (cont.)

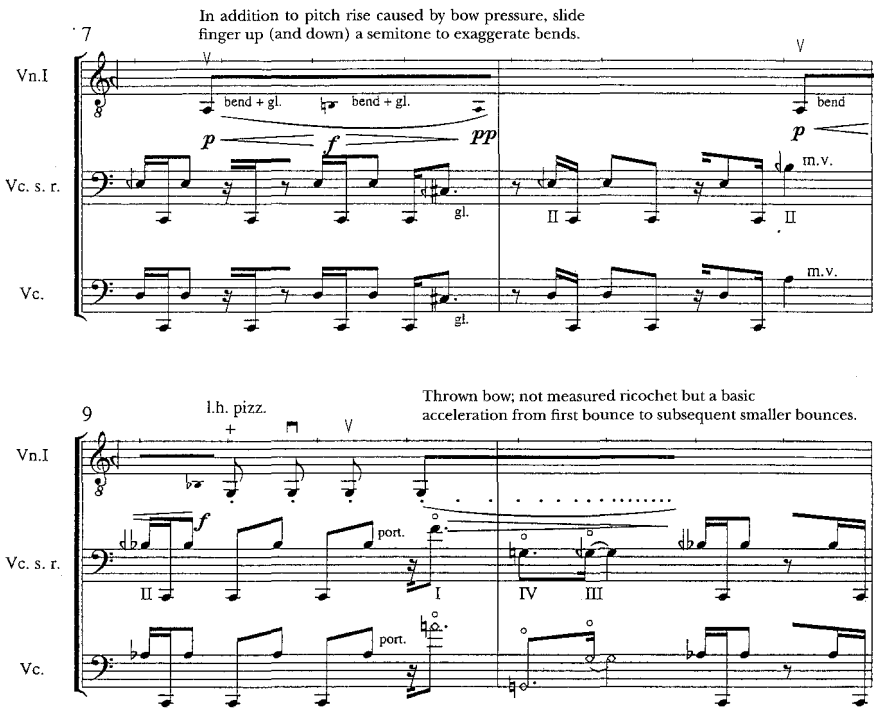
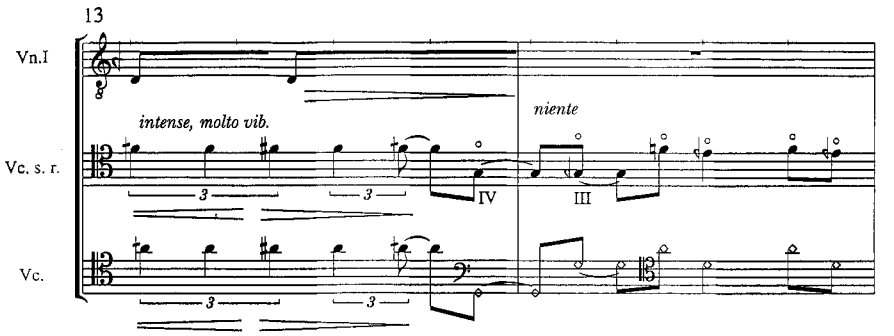


Figure 1 (cont.)



the cello part, a UPS truck pulled away from the front of my house and combined beautifully with what I was playing. The detuned violin is, in fact, a reasonably accurate transcription of that. After "designing" an instrument that could make such a noise—a violin using only the G-string, detuned down an octave and a quartertone—I spent some time discovering what else it could do. I now consider myself a virtuoso of the detuned violin and enjoy demonstrating its technique to "real" violinists that play the piece.

The pitch-bends in the violin and the microtonal resonance of the cello are like a couple of oddballs who "deserve" each other. The two work in combination because of their character rather than their harmonic interdependency. The two parts have such strong individual profiles, blurred tonal outlines, and sharply contrasting articulation, rhythm, and phrasing, that they do not invite harmonic accounting. The violin in particular has a flavor that is so individual and pronounced that it is harmonically inert. They combine because they seem to be from the same strange world. (*On All Fours, Troubadour Songs,* and another piece, *Indigenous Instruments*—started after but completed before *On All Fours*—are all works in which I imagined myself writing ethnic/vernacular music from a culture that doesn't really exist.) They share a "vibe"—a kind of down-and-dirty and somewhat exotic flavor. The violin moans and chants over a quasi-percussion groove in the cello. (An even simpler archetype: the cello beats and the violin breathes.)

Note the notation: traditional metric notation for the rhythmic cello and proportional notation for the violin are used to render the distinct character of each part. The two tumble through the passage together rather than in a subdivision lock step.

The two instruments do try to foreground a tonal relationship, of sorts, in m. 27 (see fig. 2). Both instruments play an accelerating gesture starting in the same neighborhood pitch-wise, and perform a small glissando up. The similarity in gesture invites comparison, but the tonal outlines of both are so blurred that the result is an odd and (I think) funny heterophony.

The notion of heterophony—"screwed-up" octaves and unisons—plays an important part throughout *On All Fours,* especially in passages that use more traditional playing techniques as a way of building on the primal, inarticulate, nonsyntactical, nonharmonic effect of the opening.

A somewhat different array of activities inspired, conceived, and realized *Deal,* my concerto for improvising electric guitar, optional drum set, fifteen-piece chamber ensemble, and tape projected from an onstage boom box.

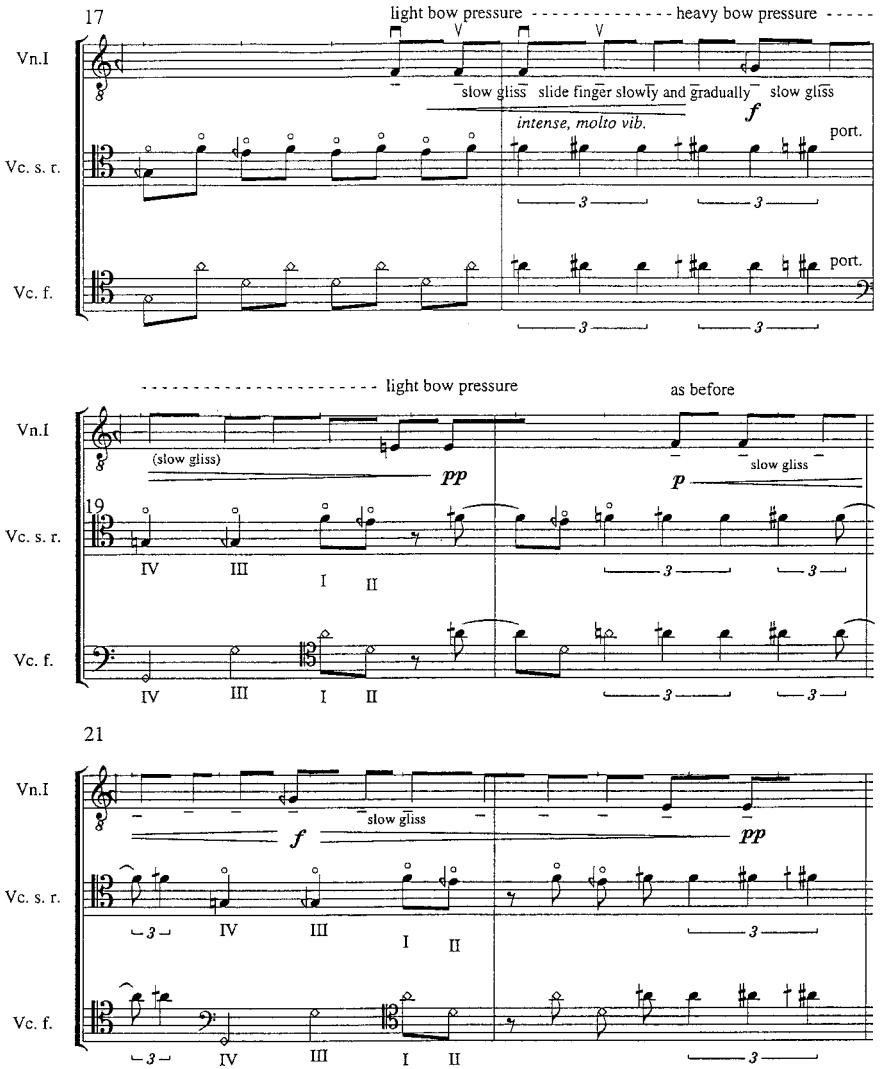
Charts and High Concept: *Deal*

Several years ago on a visit to California, I took a long drive up the Pacific Coast Highway. On my left was a breathtakingly gorgeous expanse of ocean, and to my right was America. I passed an auto-wrecking yard with heaps of burning tires and stacks of greasy carburetors, sweet docile cows grazing, then a tacky, run-down, tourist-trap gift shop which upon investigation contained some very beautiful and expressive wood carvings—clearly the work of one dedicated to the medium. On the radio, announcements of more killing in Rwanda and Bosnia were followed by the baseball scores and then Mahler's delightful Fourth Symphony. My father's health was declining and I was recently divorced and/but/yet I was really enjoying the ride, not ecstatic, just absorbed in the fullness of life—in the "curl" (as the surfers might say). It occurred to me that maybe I am sort of *cheating* by relying so heavily on the extravagant beauty of the Pacific Ocean to spin all this into a secular humanist's satori. But all is fair in love, war, and existential crisis management.

It amazes me how "reality" is so dependent on perspective, and I feel fortunate that I have always had an optimistic outlook and positive attitude. I have no idea what caused this—just some kind of chemical thing, I suppose. I have a friend who is much darker, borderline suicidal at times, who insists that my sunny disposition is due to the fact that my parents force fed me brewer's yeast and cod liver oil every morning until I was 18.

I have never had any ties to organized, brand-name religion. As a young man I read Alan Watts and Krishnamurti, and today, as an older young man, I practice staying in the *now moment* and try to avoid *withholding love,* which of course is difficult after a scathing review. (So, I have taken to not reading reviews.) This drive is another reminder that the universe

Figure 2: *On All Fours,* mm. 17–22.



does not make sense intrinsically; we as individuals must actively make sense of it. Every day we make our reality with our thought and language —with *The Word,* as in, "In the beginning was the Word."

I wanted to make a piece about *this,* a piece in which an individual, a distinctive solo voice would make sense of vivid and varied experiences. I had already been cooking up plans for a piece for the Los Angeles Philharmonic New Music Group for electric guitar and large chamber ensemble. This instrumentation seemed right for this concept since the instrumentation itself cuts a large swath through the landscape of contemporary musical life as well as embraces the quirks of my background.

The electric guitar seemed an ideal solo instrument precisely because it is not at home with traditional concert instruments. There would be palpable issues of survival at stake. I had been a fan of the guitar player Bill Frisell, a great improviser and musician who manages to find a place for himself in a variety of contexts, from jazz to free-improv to bluegrass. He isn't a flashy virtuoso; rather, he listens and responds: perfect! Also, an improvising soloist who would very literally have to "deal" with an elaborate sonic and psychic topography seemed a sharper realization of my original inspiration. This is what electric guitar players—myself included—*do.*

The electric guitar has evolved primarily through aurally transmitted, improvised, non-notated music. It is quite different from the interpretive tradition of the classical cello or violin. The distinctions between composer and performer that are vivid in Western classical music are blurred in music indigenous to the guitar. Personal style, for a guitarist, is expressed by *what* he or she plays, as well as by how. In starting to think of writing a guitar part, I had this image of Bill Frisell, squinting through his thick glasses, trying to decode a notation codified by the post-Darmstadt avant-garde, the fussiness of which was actually aimed at capturing Bill's own distinctive playing style.

Instead of writing out a guitar part, I provide the soloist with a kind of annotated road map, with imperatives like "play" or "don't play," and character suggestions like "Teasing, sweating, fragmented intro to an 'out there' blues in F." I often supply actual notated licks as a way of conveying physically—*mano a mano*—aspects of the tonality in the broadest sense of the word: not just harmonic information but attitude, *tone* of voice. When I listen to Bill's performance I am amazed at how he clearly uses the notes I suggest, but in ways that I would have never thought of, ways that are dripping with his personality and style.

The guitar road map was of course the last phase of composition. The primary task was to create a musical world in the ensemble that was plausible but not inevitable. It couldn't just be a passive accompaniment; I wanted it to challenge the soloist's sensitivities with some tight corners

but to also have the occasional gentle downhill coast with the sun and wind at his back.

My friend and colleague Jim Randall had recently shown me a stack of paper that a student of ours had generated containing all the possible pitch-class collections in random order with no short hand and no bias as to structural significance. So, the presence of (D,E,F) did not preclude the appearance of (A,B,C), a transposition. It seemed appropriate for me to deal with this chaos in some way. Jim handed me a stack of paper, which I later fanned out like a deck of cards and asked my wife to pick one. Each sheet lists 27 collections (see fig. 3). I then took it upon myself to interpret this page in some way that would transform the meaningless commingling of letters into something that would guide me with the conviction of the tablet that Moses brought down from the Mount.

After a solid week of wrestling with this random page, I emerged with the following ordered sequence of 52 pitch-class collections, which used all 27 of the original random collections at least once and some as many as four times (see fig. 4: set numbers refer to the original random ordering; letters show the fabricated ordering).

Before I go any further I should remind the reader that the nitty-gritty precomposition work that follows was aimed at helping me think of something that I otherwise wouldn't. It is not aimed at ensuring coherence, but is rather a strategy to introduce me to unusual characters. It serves as a constraint mechanism to put me in an intellectual position that will require me to be resourceful and imaginative, to *dig deep,* in athletic terms, and guide me away from uncensored regurgitation of the top layer of my daily musical intake.

As an abridged accounting of how the labyrinth in figure 4 was concocted, suffice it to say that the collections are linked by common tones. The reader will notice four "classes" of pitches: bold, bold/underlined, un-bold, and un-bold/underlined. For example, see level P: the notes **F, G,** and **B** are bold, which indicates that they were common tones brought down from level J. These three pitches were left over from set #25 when, in a preceding step, the notes C, C♯, D, E♭, and A were brought down as a remainder from level D (#15). So, boldface indicates a remainder that was brought down, the un-bold shows the new remainder created. The underlined notes indicate that the note is also a common tone from the preceding set in the ordered sequence. That is, **F** and **B**, in addition to being remainders from level J, were also contiguous common tones present in level O. D♯ and F♯ were also present in level O; the pitches G and E were not.

The reason adjacent sets, in terms of the common-tone chains (i.e., level J and level P), are not always adjacent in sequence order (i.e., levels J and K or levels O and P) is because there are several common-tone chains

Figure 3: Random collections.

1. C♯ E G♯ A B♭
2. D E F G G♯ A B♭ B
3. C♯ D E♭ A B
4. D E F
5. C D E♭ G A♭ B
6. C C♯ E♭ F A B
7. C C♯ F♯ A♭ A A♯ B
8. E♭ F F♯ A B
9. C C♯ F G♭
10. D♯ E F F♯ G B
11. F G A♭ B♭
12. C C♯ E♭ F G♯
13. C D♭ F F♯ G A♭ A B♭
14. C D E♭ F G B♭ B
15. C C♯ D D♯ A♭ A A♯ B
16. C♯ E♭ E F G♯ A A♯ B
17. C♯ E F♯ G G♯ A B
18. C D♭ D♯ E G A B
19. C D E G A
20. C D♭ D F♯ A B♭
21. D♯ F G♯ A B
22. C D E F F♯ G G♯ B♭ B
23. E F G♭ A B
24. C D♭ G♭ G A B♭ B
25. C D♭ D E♭ F G A B
26. C♯ F F♯ G A B
27. D E♭ E G♭ G A♭ A A♯ B

unfolded simultaneously, created by the fact that a remainder may be present in more than one other collection. These multiple paths are interleaved so that the common tones are not drearily linear and, I discovered, harmonically predictable.

As it is, the recurrent common tones recall, foreshadow, and cross-reference each other and thereby facilitate a nonteleological continuity. The fact that the referential common-tone cells are re-colored by their surroundings in different collections and that the common-tone cells themselves are constantly changing helps to project a sense of a wide and varied landscape. Having seeded the landscape with potentially sensible features (common tones), the process of composition was freed to invent a fantasy—turning collections of notes into flavorful musical events, and a series of events into a plausible but complex continuity. (Remember, it is the improvising soloist's job to really tie the elements together.)

Figure 4: *Deal* collection sequence.

*Note classes listed from most members to least, not by class identity.

A.(4)	D E F	AA.(18)	C♯ E♭ B C E G A
B.(2)	D E F G♯ A♯ B / G A {5,3}*	BB.(25)	C♯ F G A C D E♭ B
C.(2)	D E F G A B♭ / G♯ B {5,3}	CC.(13)	G G♯ A B♭ C C♯ F F♯
D.(15)	G♯ A♯ B C C♯ D E♭ A {4,3,1}	DD.(17)	E G G♯ A B C♯ F♯
E.(7)	G♯ A♯ B C C♯ F♯ A {3,3,1}	EE.(13)	F G A C C♯ F♯ G♯ A♯
F.(1)	G♯ A♯ B C♯ E A {3,2,1}	FF.(21)	F A♭ E♭ A B
G.(24)	G A B♭ C C♯ F♯ B {2,2,2,1}	GG.(13)	C F F♯ G G♯ A♯ C♯ A
H.(24)	G A C C♯ F♯ A♯ B {5,2}	HH.(5)	C D E♭ B G G♯ {3,2,1}
I.(21)	G♯ B E♭ F A {2,1,1,1}	II.(19)	C E G A [D]
J.(25)	C C♯ D E♭ A F G B {3,2,2,1}	JJ.(7)	C C♯ F♯ G♯ A♯ A B
K.(13)	C C♯ D E♭ A F G A♭ B♭ {3,2,2,1}	KK.(6)	E♭ A B C D♭ F
L.(18)	C♯ E A C E♭ G B {2,2,2,1}	LL.(3)	C♯ A D E♭ B
M.(7)	C C♯ F♯ B G♯ A B♭ {3,2,1,1}	MM.(9)	C C♯ F F♯ [null set]
N.(20)	C C♯ F♯ A♯ B D A {5,1,1}	NN.(11)	G G♯ F B♭
O.(8)	E♭ F A F♯ B {2,2,1}	OO.(9)	C D♭ F [F♯]
P.(10)	F G B D♯ E F♯ {2,2,1,1}	PP.(6)	A B C D♭ E♭ F {3,2,1}
Q.(11)	F G A♭ B♭ [null set]** {2,2}	QQ.(14)	D E♭ B C F G B♭
R.(14)	C E♭ G B D F B♭ {3,2,1,1}	RR.(15)	D E♭ B C♯ A C G♯ A♯
S.(15)	G♯ A B♭ C D♭ E♭ / D B {4,2,1,1}	SS.(14)	F B♭ C D E♭ G B
T.(3)	D A C♯ E♭ B {3,2}	TT.(12)	C D♭ E♭ F [G♯]
U.(26)	F♯ B C♯ F G A {2,2,1,1}	UU.(13)	C F G B♭ C♯ F♯ G♯ A
V.(27)	D♯ E F♯ D B / G G♯ A B♭ {3,3,2,1}	VV.(13)	C G♯ A♯ C♯ F F♯ G A
W.(2)	D F B♭ E G G♯ A B {5,2,1}	WW.(5)	C D E♭ G B [G♯]
X.(25)	C D♭ E♭ D B F G A {3,3,2}	XX.(17)	C♯ F♯ G♯ A E G B
Y.(12)	C D♭ E♭ F A♭ {3,1,1}	YY.(26)	C♯ F F♯ G A [B]
Z.(22)	D B C F F♯ G G♯ A {3,3,2}	ZZ.(10)	E G B E♭ F G♭

**A common tone chain is closed if it leads to a remainder of one note or null set.

The next phase is my favorite activity: swiveling between the desk and the piano, trying to endow a bag of notes with musical reality, making music out of the hand I was dealt. My thinking was divided between erecting a manageable topography for the soloist while at the same time creating a landscape with enough personality to sustain itself if the soloist decided not to play. In order to further the sense of mysterious yet palpable natural law, I began by working on groups of collections that had the same internal partition, such as level HH and level PP. They both have three notes in one class, two in another, one in a third, and no fourth class. It didn't matter to me that the three-note class in HH is bold but is not bold in PP. I was only interested that there are three classes with the same number of members. Even in a process like this, one has to draw personal lines as to how anal-retentive one aspires to be. The segregation was intended

to inspire polyphonic/contrapuntal features to aerate the texture and to give the soloist several points of entry into the texture at any one time. Figure 5 reveals the mapping of the subsets of 3, 2, and 1 notes from HH into the analogous contrapuntal positions at PP. This creates a strange sense of *modulation.* The phrase E♭–D–**B** is compressed to E♭–D♭–C. The half step A♭–G becomes B–A, and the C pedal tone is replaced by F. The interval content is different, yet a strong illusion of correspondence is established. I imagine the listener having the sense that there are some natural laws at work, without any idea what those laws might actually be—a sensation analogous to my reaction to Kabuki theater (or *life,* for that matter). In this particular case, the content of the six-note cells naturally falls into an extended, quasi-triadic context, which gave Bill Frisell, a jazz musician, some chordal handles and the option to play in "harmony" with the orchestra. In the guitar part, I even supplied some traditional chordal references, for example at PP: $F^{7}\sharp 4\flat 6$.

Even when the collection itself was more chromatic, I consciously fabricated realizations that would create the illusion of extended triadic structures so that a jazz musician's view of the universe—his or her "religion"—might actually yield some comfort (who am I to say it is illusory?). Figure 6 excerpts rehearsal letter D. (The rehearsal letters also refer to the letters that delineate level in the chart described above.) The collection at level D has three classes of notes: (G♯,A♯,**B**); (C,C♯,D,E♭); and (A). Throughout the piece, I tried to design textures that were like mobiles, suspending several clusters of activity simultaneously. At D there are three clusters of activity, all repeated to give the soloist time to negotiate the terrain but all repeated in different periods to delineate the elements. Note that the chromatic cluster is arranged so that it fills in the third, C–E♭. In combination with the G♯ (A♭) held over from the previous phrase, and the recurring G♯ and A♯ (A♭, B♭) in the bass clarinet played in the same register, an A♭-major or quasi-pentatonic resonance is created: an easy point of entry for an improvising guitarist. Meanwhile the low B, doubled with a gong, and the repeated A provide distinct and mysterious external coloring. The soloist can highlight the quasi-triadic core of the texture (the A♭), play with the extraneous elements, or add another distinct extraneous element. There are already two "clinkers" in the orchestra; if the guitar adds a third that has character and conviction it could still be heard as a response inside the frame created by the orchestra.

The notion of the orchestra part creating an inclusive frame inspired the addition of the tape part. My compositional activities were accompanied by the sound of my world: geese on the lake behind my house, my dog announcing the arrival of the mail, and the phone ringing. These sounds evolved from a minor annoyance to an integral part of the piece. It

Figure 5: *Deal,* excerpt.

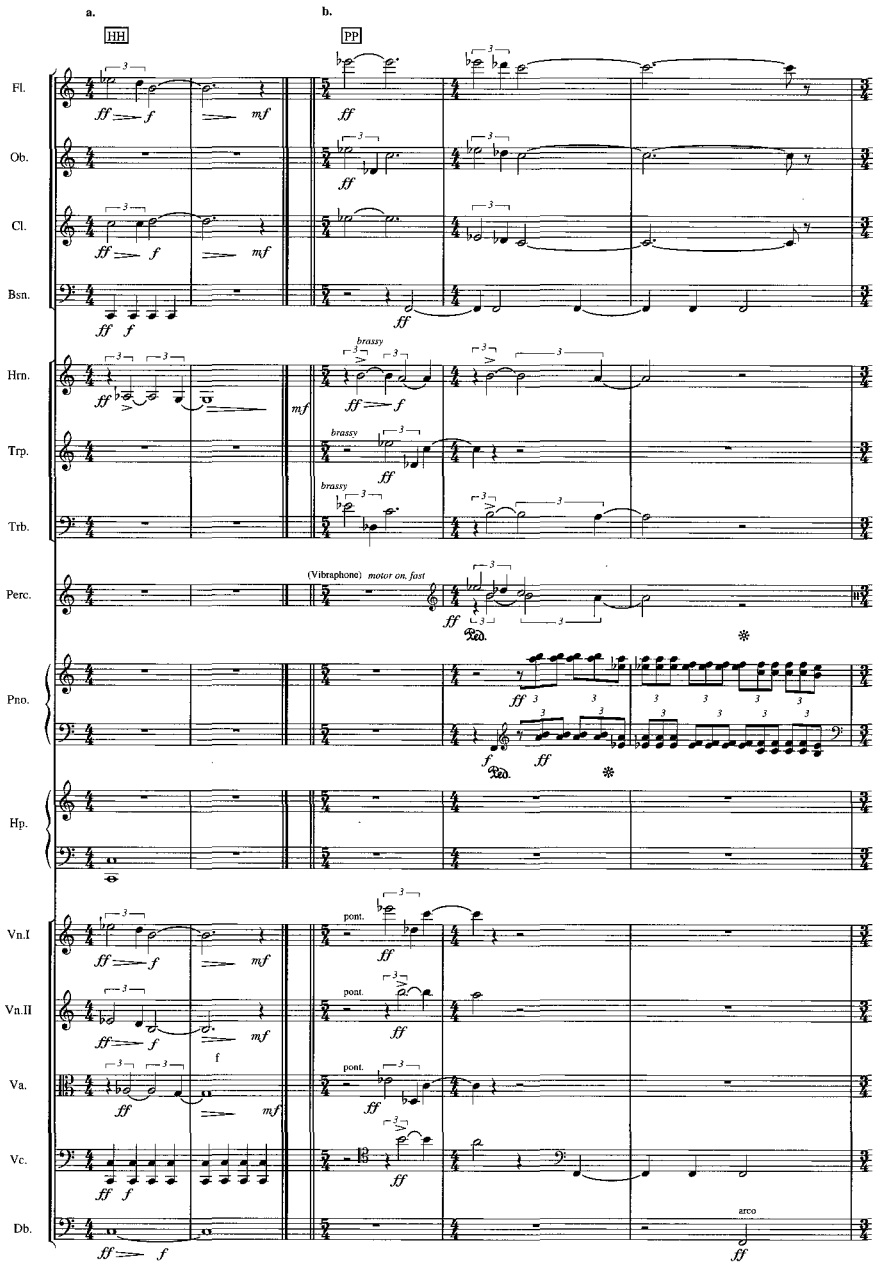


Figure 6: *Deal,* excerpt.

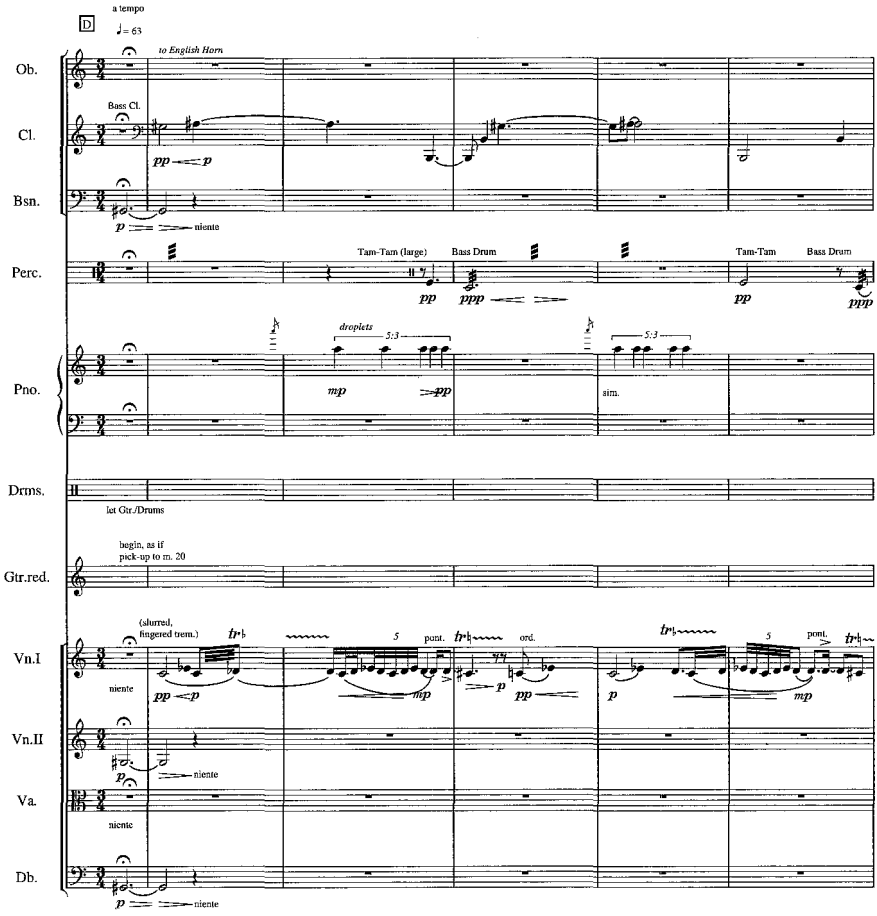
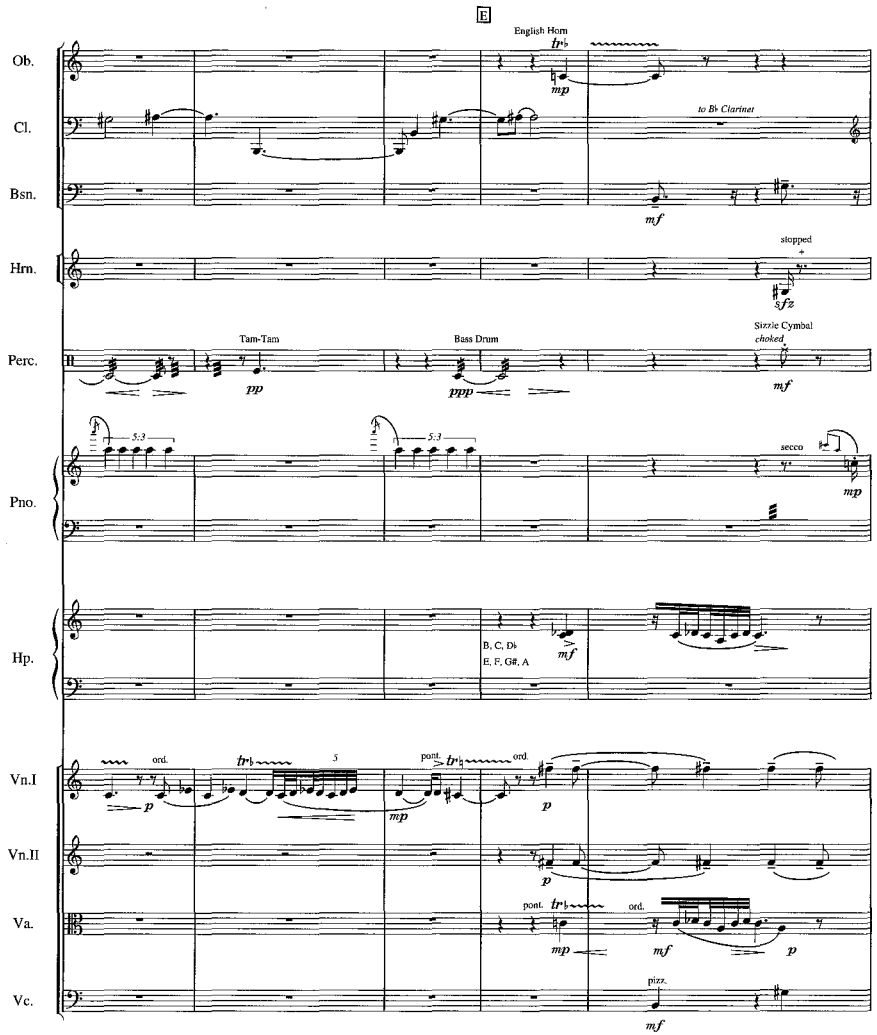


Figure 6 (cont.)



occurred to me that these sounds drew an inclusive perimeter around the electric guitar and orchestra; compared to a barking dog and a ringing phone, the electric guitar and chamber ensemble have more in common than the labels "classical music," "jazz," "rock," "world music," "electric," and "acoustic" ordinarily allow. In the end, the effect of the tape part for me is to highlight the hallucinatory, dream-like quality of the score. It is as if the "real" world impinges on our reverie from time to time and thereby makes us conscious of it. When I ran this rumination past Paul Lansky his response was, "My take on this is that in the presence of a Mahler-like sense of isolation and even desolation, the sounds on the tape, in that they're presented without any human sounds, serve to heighten the loneliness of the music. The fact that the ringing phone goes unanswered is most poignant."

Arrangement: *Feels So Baaad*, for Violin, Marimba, Guitar, and Percussion

Whether a natural landscape or a work of art, great beauty can frustrate me. I sometimes feel a bittersweet disappointment at merely "appreciating," and a yearning to press it into my senses, to internalize it: to "have it." I have heard myself say (crudely, I admit), "If you can't have sex with it and you can't eat it, what good is it?" I'm sure this is one of the driving motivations in my being a composer: by inventing music, I have a way to make something of experience—to own it. This is also why I love teaching. Finding just the right words and gestures to *capture* the magic of a passage for a student is an active form of appreciation. This also explains my continuous involvement with making arrangements of music that I love. While it appears to be a noble gesture of admiration, I am sure, in most cases, that I am not doing the music any favors; after all, it was perfect to start with. But it is a way to get my hands inside the music and massage it as if it were my own, and occasionally I capture something that helps bring someone else to an appreciation of the singular genius of the original.

In the late '80s, just before I began to compose *On All Fours*, I made fifteen arrangements for the Kronos Quartet of various old rock and blues tunes by Jimi Hendrix, Howlin' Wolf, Muddy Waters, and others: music of my youth. This activity has had an enormous impact on my work over the past decade. Making arrangements and transcriptions of music that was not originally notated was the single most effective antidote to the ruts and prejudices of writing music on paper.

Blues and rock is music about the persona of the performer rather than the tunes and chords that we in the classical music biz find so convincingly central. The well-worn riffs and changes (a twelve-bar blues) of Muddy

Waters's *I'm Ready* are hardly unique. But the persona of the man singing the song is inextricable from the song itself. When he shouts, "I am ready for you and I hope you're ready for me," it is absolutely clear that the man in front of you wants to fuck or to fight and doesn't really care which.

Arranging such music for string quartet is preposterous! (And I'll add that the products themselves are novelties at best.) But surely the struggle to make a string quartet—the archetype of aristocratic refinement—growl and grovel with sound effects was instructive; it led me to an orchestration concept that would welcome the presence of an electric guitar. More subtly, the activity of writing down constructions that were never conceived of in terms of notation lifted my pencil and ears out of a set of well-honed habits inherited from my teachers. In general, the act of pondering how one might infuse a notated score with a persona that vividly colors its *content* has had a far-reaching impact. The process of orchestration for me begins with developing some sense of personal history on the voice that is projecting a particular part, which leads to performance indications like "sweet, foolish, whistling in the graveyard" and "shouted like a political speech." (I wish I knew the inside story to "Beklemmt" in the Beethoven *Cavatina.*)

There have also been original pieces that fell out from what began as innocent arrangement activity. My wife asked me to make an arrangement of Chuck Mangione's '70s pop-fusion hit *Feels So Good* for her group Marimolin (violin and marimba) plus spouses (the violinist's husband plays percussion and I play guitar). It had been chafing me that in my blues arrangements nobody was ever satisfied. I worked hard to capture the personae of the performers/composers in ways that I thought were clever but were, I admit, quite abstract. Simply transcribing the tunes without even text to contextualize them seemed, in a word, lame. Kronos was unhappy because the tunes bore only a passing resemblance to the originals and would hardly serve as the encore chestnuts they were hoping for. Colleagues had suggested that the pieces were better heard as original compositions in the tradition of twentieth-century art that viewed familiar objects through a refracting prism. I'll buy that, although I wasn't getting my name in the programs. So I embarked on the *Feels So Good* project with two pads of manuscript paper. On one pad I put all my ideas that would render a straight-ahead, rosy-cheeked version of *Feels So Good* for this unlikely combo. On the other pad, I wrote down all the ideas that seemed so prismatic as to be original. Most of those came in the groovy bridge built on the bass line: D–E–F–E♭–F–G.

My antidote, a little bonbon called *Feels So Baaad,* just sort of fell out as a chaconne, based on that bass figure. There is no way that the bridge in

Feels So Good could have happened enough times to exorcise my fantasies, and even if it had, my harmonic flights of fancy over the bass would have been out of place. So, everyone was happy: the performers got a hit tune that people would recognize and I had a new piece.

Music as an Action Sport

I have been describing a range of activities that influence the music I make and I haven't even mentioned the interpretive dance and cacophonous vocalizations that emanate from my studio on a daily basis as I struggle to get inside, to be, the music. I think there are a couple of explanations for my active approach to composition. First, I have always identified myself as an athlete. (I was a professional freestyle skier 25 years ago, and now play tennis four or five times per week.) It is not surprising that my concern for how the head, heart, and musculature collaborate in sport would influence my approach to music. But also, I think the fact that notated music is not my mother tongue plays a role. I didn't know how to read music until I was 21. Before that, music only existed as the result of unmediated physical action. In contrast, I have friends (Jim Randall, for example) who were score-reading Beethoven quartets at age six. While I would now consider myself to be fluent, addressing music solely through its notation does not mobilize my passions the way I think it does for him. I need to break a sweat.

The Composition of Irish Traditional Music

By Don Meade

Irish traditional music has much in common with the old folk music traditions of other parts of Europe.[1] No other European country's traditional music, however, has achieved such worldwide popularity outside the rural ethnic communities that gave it birth. The roots-seeking nostalgia of millions of Irish-Americans partly explains the contemporary appeal of old-fashioned Irish folk music. But what about the thousands of Japanese, French, German, Dutch, and other Irish-music lovers around the world, fans whose record-buying habits, musical pilgrimages to Ireland, and attendance at concerts and festivals demonstrate that they much prefer Irish music to that of their own countries?

Ireland's relative economic backwardness into the late twentieth century helped preserve its rural song and dance as a healthy living tradition while the folk music of more prosperous western European countries faded from popular memory. There is also the legendary Irish talent for alcohol-fueled conviviality, the engine driving an international boom in Irish theme pubs, hundreds of which now serve up jigs and reels along with pints of porter in places as unlikely as Bangkok and Budapest. A young Frenchman in Paris may have no idea of where to go to hear French folk music, but he will quite likely know one of the several Irish pubs in that city that feature Irish traditional music.

These factors are important, but as a life-long enthusiast of Irish traditional music and as an amateur musician, it also seems clear to me that the secret to the unparalleled popularity of Irish traditional music is the superiority of its composition. "Composition" in this context includes three different aspects. First is composition in the narrowest sense—the invention of new melodies. Then there is the continual reworking of these melodies in the course of the semi-improvisational music-making, something that is an ingrained habit among Irish traditional players. Finally, the way in which traditional tunes are played together in a typical informal "session" of Irish music is an important sort of composition as well, and no small component of the music's appeal.

In exploring these three aspects of composition in Irish traditional music, I will deal almost exclusively with instrumental dance music. Irish folk songs and ballads have an even broader popularity than traditional dance music, but the composition and performance of Irish vocal music takes place in contexts quite different from that of the dance music tradition.

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Tune Makers

Traditional dance tunes, like symphonies and rock songs, are the work of actual composers. This may seem obvious, but many listeners seem to assume that the Irish melodies they hear in concerts, at sessions, or on recordings are all products of some misty Celtic past—more like found objects than works of art.

Even experts in the field can fall into this mindset. Stephen Jardine, an American who wrote a 1981 master's thesis at University College Cork on composers of Irish dance tunes, was discouraged from taking up the topic by no less an authority than the late Breandán Breathnach, the most respected collector and publisher of Irish traditional music of the late twentieth century. Breathnach warned Jardine that he wouldn't find much in the way of actual composers or compositions. In fact, Jardine found dozens of living composers and hundreds of recently composed tunes, many of which had entered the oral tradition so successfully that collectors like Breathnach published them alongside melodies dating from the eighteenth century (Jardine 1981).

Irish traditional musicians are notoriously unconcerned with the names of tunes. It is typical even in a formal concert setting for the performers to tell the audience that they haven't a clue as to the name and history of most of the music they're playing. This is largely a side effect of the fact that most Irish fiddlers, flute players, pipers, accordionists, and other instrumentalists learn new tunes by ear, often in informal sessions or from cassette recordings made without benefit of liner notes. Keeping track of names and composers is not easy for musicians who typically have a repertoire of up to 1,000 jigs, reels, and hornpipes, some of which are more or less related to each other.

Whether the musicians know it or not, however, a surprisingly large number of the tunes currently in circulation were composed over the past half century, often by men and women who are still alive and playing. Based on my own two decades of playing in Irish music sessions in the U.S. and Ireland, and on a knowledge of composers gleaned from Jardine's thesis and my own research and observation, I would guess that at least a third of the Irish dance tunes commonly played today fall into this category.

The largest number of well-known modern composers of Irish dance music have been fiddlers. Notable fiddling composers of recent decades include Seán Ryan of Tipperary, Paddy Fahy of Galway, Josephine Keegan of Armagh, Martin "Junior" Crehan of Clare, Martin Wynne and James "Lad" O'Beirne of Sligo and New York, Charlie Lennon of Leitrim, Ed Reavy of Cavan and Philadelphia, Larry Redican of Dublin and New York, and Chicago native Liz Carroll.

Most other well-known composers are button accordionists, including Paddy O'Brien of Tipperary, Corkman Finbarr Dwyer, Galway priest Father P. J. Kelly, Brooklyn native Billy McComiskey, and Martin Mulhaire, a Galway man long-resident in Queens, New York. Some of these composers' pieces have been noted down in various printed collections. That's a boon to archivists and historians, but of no great use to most traditional musicians, who often don't read music and rarely learn tunes from books even when they can make out what some older Irish players call "the dots."

Though melodic permutations are virtually limitless, the structure of Irish dance tunes is very simple and fairly rigid. Reels, jigs, and hornpipes—the three most common types of dance music—are all constructed from eight-bar segments. Both reels and hornpipes are usually represented in cut (2/2) time and are distinguished by subtleties of tempo and timing not always apparent to novice listeners but clear enough to dancers and musicians. Jigs come in three common varieties—single, double, and "slip," which are written in 12/8, 6/8, and 9/8 time, respectively. Other types of tunes heard in the Irish tradition, inlcluding highland flings, "barn dances," mazurkas, waltzes, and polkas, are either regional specialties or remnants of nineteenth-century Continental dance fads.

Some "big" tunes include as many as seven parts, but a typical Irish jig, reel, or hornpipe has only two—often referred to as "the tune" and "the turn"—each of which is sixteen bars long. Each segment is repeated, sometimes with a second ending, though quite a few of the oldest pieces in the traditional repertoire are played "single" (i.e., without repeats).

The melodies themselves are modal. A slim majority, perhaps, have a straight major (Ionian) tonality, usually D or G major, though fiddlers are fond of A as well. The largest number of nonmajor tunes are set in the Dorian mode, with a scale starting on A, B, D, or E. Mixolydian modal scales starting on A, G, or D are also used, and there are a smaller number of tunes that use an Aeolian (natural minor) scale. The favored modes are those most easily played on the oldest diatonic instruments in the Irish tradition—the Celtic folk harp, uilleann pipes, tin whistle, and keyless wooden flute. Fiddles, concertinas, banjos, and accordions all arrived in Ireland much later, and while players of these instruments can indulge in greater chromaticism, they continue to adhere for the most part to the modal scales of the established tradition. Some east Clare fiddlers and concertina players are fond of playing in C or F major, but most tunes in these or more exotic keys are imports from the fiddling traditions of Scotland and northern England.

Some of the oldest Irish tunes use gapped scales that make the tonality hard to classify. Others combine parts set in different modes. Recently

composed tunes can often be detected by their deviations from the modal norm. A big part of the late Ed Reavy's distinctive compositional accent, for example, was his fondness for throwing in passages that escaped the modal straitjacket. The quirky compositions of east Galway fiddler Paddy Fahy don't seem to play by any rules at all, though this fluid tonality is part of Fahy's peculiar charm as a composer.

Many modern compositions are picked up by other musicians from recordings. Many more, however, enter the oral tradition the old-fashioned way, passing from musician to musician by direct personal contact. A new tune may become popular because of the respect accorded to the composer, or because some superlative musician has recorded it. Once launched into the world, however, a tune generally makes its way on its own merit, so that compositions by little-known, unrecorded musicians have often become standards of the tradition.

The oral tradition is a great editor of new tunes. Irish musicians often alter the compositions of other players, rounding off the sharp corners. Passages with odd chromatic touches or complicated second endings are often reworked so that the tunes better fit the conservative traditional mold. As New York flute player and composer Joanie Madden has pointed out, the new tunes that most successfully enter the traditional repertoire are those that sound as if they could be a couple of hundred years old.

Improvisation and Variation

Many tunes in the Irish traditional repertoire share a common "ancestral" tune but have since gone their own modal or rhythmic way. Irish music scholar Micheál Ó Súilleabháin, formerly of UC Cork but now at the University of Limerick, is fond of pointing out to students that two well-known reels, "My Love Is in America" and "The Dunmore Lasses," use the same basic melody—one with a mostly major sonority, the other with a minor or Dorian sonority.

"Miss McLeod's Reel," one of many Scottish imports to the Irish tradition and probably the most overplayed tune of all time, shares the same basic tune with an equally well-known jig called variously "Jackson's Bottle of Brandy" or "Pay the Reckoning." The jig version just leaves out a quarter of the notes to squeeze itself into 6/8 time. These variations were introduced long ago by now-forgotten musicians, but similar transformations are still being made by traditional players today. A more common sort of semicompositional innovation is the casually executed melodic variation, in which almost all Irish traditional musicians indulge when playing.

This sort of innovation may be contrasted with that of jazz improvisers, who tend to play the actual melody of a piece once, going on to blaze new

melodic paths through the harmonic jungle with each repetition. Irish traditional players, on the other hand, confine themselves to a more modest sort of variation. The degree to which Irish musicians vary the melodies differs greatly. Some players—New York–born All-Ireland fiddle champion Brian Conway is a good example—experiment for a time with a new tune but eventually arrive at what they judge to be a perfected "setting," from which they rarely stray thereafter.[2] At the other extreme are players like John Carty, a London-born fiddler and tenor banjo player famous for never playing the same tune in the same way twice. Carty, in fact, rarely plays any eight-bar segment the same way again![3]

By the standards of jazz improvisers, Carty's variations may be limited, but each time through the tune, he creates a new setting that closely parallels but never actually repeats the tune's basic melody. This is not a new phenomenon. When police sergeant James O'Neill of Chicago was attempting to transcribe music from the playing of Mayo fiddler John McFadden in the early twentieth century for his boss Francis O'Neill's famed tune collection, he was frustrated by the fact that every time he asked McFadden to repeat the tune so that he could catch the subtleties of the melody, the fiddler would play it slightly differently. McFadden wasn't trying to be difficult—he just couldn't play any other way!

These kinds of variations are indulged in by Irish traditional musicians even when they are trying to play together. Duet competitions at the All-Ireland *fleadh cheoil* (pronounced "flah kyoal"), a huge music festival held in late August each year, reward players who achieve note-for-note synchronicity. Recording artists also tend to seek seamless perfection in the studio. Most Irish traditional musicians, however, feel no compulsion to match anyone else's playing and reject such exactitude as robotically un-Irish.

Birth of the Session

Irish traditional dance music is, of course, rooted in Irish dancing. The influence of *Riverdance* and other such stage shows has made Irish step dancing more popular than ever over the past decade. Irish traditional social dancing has also experienced a revival, particularly among enthusiasts of set dancing, a form developed in the nineteenth century from imported quadrilles. Outside the dance context, concert performances and recordings of Irish traditional music are the way in which many contemporary Irish music lovers hear the tunes.

For most musicians and their hard-core followers, however, the heart of Irish music-making is the "session," an English word that has also been Gaelicized as *seisiún*. A session is simply a group of traditional musicians playing an unscripted repertoire of tunes for their own amusement, often

in a pub setting. Many Irish music fans think of the pub session as a time-honored tradition, perhaps even the way in which traditional music has been played for centuries. It is, in fact, a relatively modern invention.

Before the 1970s it was a rare Irish pub owner, either in Ireland or abroad, who wanted traditional music in his establishment. Traditional music was associated with rural backwardness, and most Irish people had as much enthusiasm for it as most Americans had for old-time "hillbilly" music. Traditional music concerts and festivals were practically nonexistent. A brief flowering of traditional music recordings in the 78-rpm era was followed by decades in which very few records were made. The musicians themselves played for each other at private gatherings in those years, and there was virtually no public audience for the music.

The "ballad boom" set off by the American success of the Clancy Brothers and Tommy Makem in the early 1960s changed all that. Aran-sweatered crooners, bearded guitar slingers, and gravel-voiced folkies sold thousands of LPs and filled concert halls. "Folk" music became good for business in pubs in Dublin, London, Boston, and New York. Traditional musicians emerged from their underground existence to find much greater public interest in their art. Irish "folk groups" began to supplement the guitars with banjos, fiddles, pipes, and accordions. Traditional musicians—even those unaffiliated with ballad singers—started to infiltrate the pubs themselves.

In nineteenth-century Ireland, traditional musicians rarely played in groups. Two fiddlers might join together for greater volume at a house dance, but most pipers, fiddlers, flute players, and accordionists played solo. When traditional dancing moved into larger halls in the 1920s and '30s, larger ensembles were required for the unamplified music to be heard. These "ceili bands," and similar groups in Irish-American dance halls, featured various instrumentalists playing in unison with backing from drums and piano.

A similar style of unison-playing (minus the piano and drums) was fostered from the mid-1950s on, when musicians from all over Ireland and the Irish diaspora gathered at the *fleadhanna cheoil* (music festivals) organized by the traditional music organization Comhaltas Ceoltóirí Éireann. When this style of music-making entered the pubs, the modern *seisiún* was born.

Composing the Session

Informal sessions can happen anywhere, and at a crowded *fleadh* they *do* happen anywhere. I have played in many street sessions in Ireland, as well as in parking lots, sidewalks, alleyways, hotel corridors and lobbies, a Chinese restaurant, a small grocery shop, the back of a van, bed-and-

breakfast parlors, church halls, social clubs, and a greyhound race track. As opposed to *fleadh* pickup sessions, however, a typical regularly scheduled session in Dublin, Boston, or Brisbane features two or more musicians paid by a bar to show up in order to guarantee that there will be music.

Other unpaid musicians may wander in to join the regulars. The music may or may not be amplified (usually not in Ireland). If there are singers in the bar, they may be asked to take solo turns, and the patrons may be hushed so that they can be heard. If an accomplished step dancer is present, he or she may be coaxed into giving an impromptu performance. If there is enough room, a set or half set of dancers might even take the floor if the musicians are cooperative. Songs and dancing at sessions are, however, a diversion from the main business at hand, which is the cranking out of hundreds of instrumental dance tunes. The musicians are not performers on stage and don't take real breaks. They may, however, pause at length to discuss musical and other matters (and sip their pints) between bouts of jigs and reels.

A set of reels, jigs, or hornpipes as played in a session usually consists of at least two separate tunes (of the same meter) played in succession, with the change from one tune to the next taking place without pause after two, three, or more repetitions according to custom of the musicians present. At a particularly lively session, these sets may extend to as many as a dozen tunes in quick succession, particularly if the barman has announced the last call and requested the musicians to play "just one more."

This sort of music-making may look democratically haphazard to the outsider, but the musicians themselves are quite aware of various musical and social distinctions. Participants generally defer to the senior players present, to the most accomplished musicians, or to those who are being paid to play. The leading musician or musicians are accorded the privilege of starting most sets of tunes, and of deciding when to switch from one tune to the next. The other players join in or drop out depending on their familiarity with the music.

Anyone who demonstrates minimal competence will usually be encouraged to start some tunes of their own, but one is expected to wait to be asked. Overeager musical newcomers, especially those not raised in Ireland, may miss these social cues and start tunes out of turn or at a radically different pace than the leaders. Such a *faux pas* is rarely criticized openly, but the offending party generally feels the weight of much silent disapproval and amends his or her behavior. The real audience for the session is the musicians themselves. Others are welcome to listen, but the music is not really being played for their entertainment. Bar patrons are

not expected to applaud when a set of tunes concludes, though in Irish-American bars this often happens anyway.

The success of any session is largely determined by the ability of the leading musicians to keep the music going by playing tunes that can be picked up by the others present. If this doesn't happen, group play can suddenly turn into an unexpected solo performance. If the musicians know each other's repertoires well, they may venture to play obscure or recently composed melodies. Otherwise, the leader will make conservative changes—into tunes that he or she can be confident the other players will know.

Some tunes are so closely associated with each other (often because of influential recordings) that the change from one to the next is foreseen by all present. Regular attendees at established sessions may also make a habit of combining certain tunes. A player may also call out the name of the next tune to cue the others to what's coming. As noted above, however, most Irish traditional musicians don't know the names of many tunes, so this technique doesn't always work well.

In a good session of well-practiced musicians, the players switch together from tune to tune so seamlessly that listeners might imagine that a program had been worked out beforehand. In fact, however, only the leading musician (or musicians) may have any idea of what tune he is going to change into, and then only at the last second. At the change, the other players may pause briefly, but if the leader has chosen wisely, they need hear only the first couple of notes to identify the new tune and join in again. A good session leader is thus a "composer," whose choice of repertoire and tempo ensures a steady flow of music and effectively involves the other musicians.

A Personal Note

I grew up in Los Angeles, where genuine Irish traditional music was not to be found in the 1960s and early '70s. My parents were Irish-Americans originally from Boston, and I loved their collection of LPs by the Clancy Brothers and Tommy Makem. I was particularly fascinated with the few Irish dance tunes that Makem played on the tin whistle, and attempted to play them myself on the recorder and harmonica. Around 1974, Fred Sokoloff, an LA bluegrass musician, taught me to flat-pick a few reels and hornpipes on the guitar, and I soon began to experiment with the mandolin, an instrument much better adapted to playing fiddle tunes.

It was not until moving to New York, however, that I encountered genuine Irish traditional musicians. Beginning in 1982, I began to attend the regular Monday night sessions at the now-defunct Eagle Tavern. The Eagle sessions were extremely loose affairs that attracted many novice mu-

sicians and singers, most of whom were completely ignorant of session etiquette and viewed the Monday free-for-all as their one opportunity to perform. Despite frequent interruptions from these misguided soloists, the real life of the session was directed by the older Irish musicians who actually knew how to play, particularly the late Donegal melodeon (one-row button accordion) player Tom Doherty and Longford fiddler Paddy Reynolds.

Tom was at the Eagle every Monday. He didn't have a huge repertoire of tunes, but he played them all extremely well and the session only seemed to take flight when he picked up the "box." Paddy Reynolds's fiddling was a revelation. I had never heard such subtlety of bowing and fingering or such sophisticated settings of tunes. Trying to play with Tom and Paddy on the mandolin or tin whistle was a challenge, and I was glad at first that my instruments could barely be heard. As I gained confidence, I switched to the louder tenor banjo and eventually picked up the fiddle as well.

My musical apprenticeship continued at other New York bar sessions, and I will be forever grateful to the many highly skilled musicians who encouraged (or at least allowed) me to play with and learn from them, especially Brian Conway and Tony DeMarco, two amazingly talented musicians who continue to uphold the long and proud tradition of County Sligo–style Irish fiddling in the Big Apple. Interested parties can hear Brian on Saturday nights at O'Neill's of Third Avenue, and Tony on Thursdays at Paddy Reilly's Music Bar.

Notes

1. In Ireland, the term "folk music" has come to be associated with the guitar-backed "ballad groups" of the type pioneered in the 1960s by The Dubliners and the Clancy Brothers and Tommy Maken. "Traditional music," on the other hand, is used to describe old-fashioned, country-dance tunes and unaccompanied singing, both in English and in the Irish-language *sean-nós* ("old style"). In this article, I use both terms more loosely to refer to the oral tradition of noncommercial, rural-based, amateur music-making.

2. See Conway and DeMarco's recording *The Apple in Winter.* Conway also has a solo recording, tentatively titled *First Through the Gate,* scheduled for release in 2002 on the Smithsonian Folkways label.

3. See Carty's recordings *Last Night's Fun* (1996) and *Yeh, That's All It Is* (2001).

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On Plurality

By Duncan Neilson

When asked why I write music the way I do, the first thing that came to mind was a story: the story of the blind men and the elephant. So it will help to start with a telling of this story, a parable, and it goes like this: Six learned men, all blind, go to visit an elephant. The first bumps into the side and describes the elephant as a wall. The second feels the tusk and describes the elephant as a spear. The third feels the trunk and calls the elephant a snake. The fourth feels the elephant's knee and thinks that it is a tree. The fifth touches the ear and calls the elephant a fan. The sixth grabs the tail and describes the elephant as a rope. When the blind men reconvene and compare stories they argue loudly and completely dispute each other's opinions. And so the parable concludes that although each blind man was partly right, they all were in the wrong!

So.

I am one of the blind men. A composer. And the elephant is sound and music. Metaphorically speaking, I work hard to faithfully describe the portion of the wild creature that I perceive—the sound, the timbre, the rhythm, the style. And I agree with the elephant parable right up to the ending, but here is where I part ways. There are other composers, other blind men, and their claims are important. So instead of disputing their claims I have begun to listen.

I wasn't always this way. When I was in college, if you didn't like Stravinsky or the Talking Heads, I would have proven you wrong, loudly. In fact, had you disagreed, I may have thought that you were an imbecile. So of course my friends tended to like Stravinsky or the Talking Heads, or at least wouldn't give me a hard time about it. We had our little clique. And all that I read or listened to tended to reinforce my opinions. Sure, I considered myself open-minded, but if you liked Bob Dylan or John Cage, forget about it! And if the composition that you wrote didn't resemble the style or the substance of my composition, I really thought that you were barking up the wrong tree. So the composing equation was easy: people who were like me were smart, and people who were unlike me, dumb. Thankfully, something was about to happen in my life that would make me abandon this way of thinking—abandon, in fact, just about everything for a while. This was the day I walked, like a blind man, smack into the Berlin Wall.

Berlin was the first crack in the shell of my comfortable reality. I lived and studied in Berlin in 1990, when the wall was coming down. I found

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that to really understand the insanity of the wall—to feel it and not simply shut it out—one had to go a little crazy. One had to leave the familiar realm of order, and things having to make sense. In Berlin, the artificial borders were being broken down and things were changing so quickly that there wasn't time for answers—just constant questions. Would the Russians be invading? Would there be a peaceful transition? Would there be violence? Would democracy prevail? Nobody really knew what was happening at the time. News was outdated as soon as it was printed. Every day the Berlin Wall was eroding away from hammer blows on both sides, and the armed border guards weren't firing a shot. There was an incredible feeling of elation in the air. But how long would it last?

Of the many memories I have of Berlin at this time, one still haunts me. One evening I visited the wall just before sunset. Hundreds of crows, giant flocks of them, would gather in an open area on the western side. They'd cackle and crow and generally make a ruckus. Then suddenly they'd lift into the air, fly over the wall and land on the far side. I couldn't see them on the far side but I could still hear them. So I'd watch the sunset colors developing and glance at the candy-colored graffiti gracing the western side of the wall. And soon enough the crows would come flying over again, cackling and cawing and laughing. And suddenly it dawned on me. The crows. They're laughing. What an unbelievable comedy! How many families did this wall break up? How many dreams and lives did the wall try to contain? How much money and human labor did it take to build it? To maintain it? How many died trying to cross it? And here were these crows flying freely across the wall, this enormous barrier to human understanding. The crows were laughing. I began laughing too.

I've been a border crosser ever since. At first I rebelled from the sense of the wall. So in Berlin I was attracted to music that appeared to have no borders. I went to performances of free jazz. I saw John Zorn's Naked City. I listened to electronic music and recordings of hip-hop that used lots of genre-crossing sampling. To me, the borders were down, and I liked music that crossed genres, blended styles. Later, when I returned to the States, and I resumed my piano and composition studies in Portland, Oregon, I got a job at the best record store in town. And not only did I want to listen to music that blended styles, I wanted to listen to *everything*. So my paycheck was recycled right back into the store. I would come home with armloads of CDs. By day I'd practice my Beethoven and Prokofiev, and by night I'd listen to Bob Dylan, Stockhausen, punk rock, Cassandra Wilson, *taiko* drumming, everything. I just listened, listened, listened. Suddenly the world of music was wide open.

Over the years this activity has developed into a composition philosophy. It's less an official philosophy and more something that just seems to

work for me. There are three parts. The first is this: avoiding the hardening of artistic categories. Hardening of artistic categories is the same as hardening of the arteries. It prohibits flow—the flow of creative blood, the flow of ideas. It is very important to know the distinctions between categories, to know the similarities and differences. But if the borders become too rigid and too exclusive, then I see aspects of the Berlin Wall creeping in. Hardening of the categories is often an attempt to isolate or silence voices that seem contrary. And the real lesson I learned from the Berlin Wall is that it's important for all voices to be heard. Even if the voice seems contradictory. So, maintaining a balance between recognizing categories but at the same time not allowing them to become overly rigid is important.

Secondly, I find it is important to define and set boundaries around your own musical identity, then set your identity on the shelf and genuinely step into another person's perspective. This may sound easy but in practice I have found that it is not. In fact, it's one of the most difficult things I have tried. To genuinely understand someone else's viewpoint, instead of simply tolerating it, takes time and attention. This is time and attention that I once would have spent on making sure that everyone understood my music, my views. The process of knowing your identity and then setting it aside to experience someone else's viewpoint is a back-and-forth process. By experiencing a new perspective, you provide contrast to your own identity, which may have become static. You also offer yourself a chance to expand the horizons of your own identity if you choose to do so. And just because you have explored a new philosophy, doesn't mean that you'll adopt it. I believe that this process, though difficult, is important and healthy. Otherwise, stories like the blind men and the elephant come true, in which each person is unable to comprehend the other's viewpoint, and thus each misses the larger picture.

Thirdly, I believe that pluralism is a good idea. I tend to be a pluralist in my work. My work encompasses many styles and idioms. Others may not approach composition in this way. That's okay. What is important is that each composer, regardless of style, be given a chance for his or her unique viewpoint to come through. This is pluralism. For a teacher, this is difficult to put into practice because it is so easy to impose one's unsolicited viewpoint, to tell a student, "Yes, that's fine, but I would write it this way." The music that is important in my life may differ strongly from the music in someone else's life. That's fine, too. The fact is that music is still important in people's lives. And just like the blind men who each called the elephant a wall, a spear, a snake, a tree, a fan, and a rope, there's a good chance that we as composers are experiencing different parts of the metaphorical elephant.

Since Berlin, I've been inspired to write music in many different styles and for a wide range of performing ensembles (chamber groups, orchestras, vocal groups, electronic media, experimental theater, and rock groups). I will focus the discussion here on solo piano, the instrument on which I was trained as a performer, and expand the plurality discussion from Berlin to my current place of residence, New York City.

* * *

If a piano were to relax, as we humans keep trying to do, it would be something else altogether. A piano is full of suppressed desires, recalcitrance, inhibition, conflict. Yet because its opposing forces are carefully balanced, they are still.

—*Anita T. Sullivan*

The opposing forces within a piano (wire, wood, steel) strike me as emblematic of life in New York City. Two of my recent piano compositions, *Hyperfiction* and *Butterfly Zone,* are influenced by different sides of New York, and offer contrasting glimpses of the city. They also exemplify the boundary-crossing aesthetic mentioned above.

Hyperfiction is a group of sonic postcards. The pieces distill urban energy, alternating mad, frenetic episodes with moments of quiet and repose. Like postcards, each piece conveys a lot of information in very little space. Sudden, even violent, contrasts between consonance and dissonance, softness and loudness, politeness and rudeness erupt. Different musical styles mingle and collide like taxis on Broadway. One of these "postcards," *attract opposites,* combines sweet melody and random noise-outbursts, a conversation between complete opposites stuck in an elevator. A second piece, *sci-fi,* is a condensation of B-movie sci-fi. In this piece, hostile aliens and Godzilla really do stomp through New York City—cartoon laser blasts and all.

A third piece, *tangle lesson,* starts off like a normal tango and then gets hijacked. The piece was influenced by a time I was sitting at a bar and thirty people barged in, having just left a tango movie, and they took over the stereo (much to the waitress's chagrin). As the couples danced to scratchy tango records, one record began to skip, at which point everyone stumbled. That wonderful moment of mayhem suggested the piece—thus the broken tango of *tangle lesson.* There are twelve "postcard pieces" in all, ranging from about thirty seconds to two-and-a-half minutes in length. Ordering the pieces within the set was like juggling twelve well-shaken bottles of soda.

Hyperfiction is similar to the channel-surfing aesthetic of the late '80s and early '90s, when videos/movies sped through images so quickly that it prompted discussions of information overload and short attention spans

of listeners and viewers. A few "protest" videos came out at this time, filmed in black and white, with long, unflinching camera shots of musicians who never once lost eye contact with the camera and viewer. It was almost uncomfortable to watch—one was tempted to look away. *Butterfly Zone* is similar to this aesthetic in that it provides long stretches of sonic fabric, in contrast to the quick-splice aesthetic of *Hyperfiction*. Where *Hyperfiction* rewards the short attention span, *Butterfly Zone* rewards longer contemplation.

Butterfly Zone is dedicated to the outdoor enclosure (of the same name) that appears each summer at the Bronx Zoo, housing thousands of brightly colored, iridescent butterflies. Visitors are surrounded by butterflies when walking through the enclosure, and are allowed a close-range view of many common and rare varieties. Inside the Butterfly Zone I lose track of time. Fifteen minutes go by in what feels like five. The flight of thousands of butterflies creates an atmosphere inside the Butterfly Zone that constantly changes, yet remains the same. Musically, I thought I could represent this by juxtaposing short melodic patterns (butterflies), and slightly offsetting them (flight). Thus the same pattern is heard in both hands at the piano, and then one hand adds a note. After a number of repetitions the pattern will eventually realign, at which point two notes are added and the pattern modulates. This process continues on up through six added notes, and creates the illusion of constant sameness and constant change.

The four-part design of the piece includes: (1) butterflies (repetitive patterns); (2) enclosure (an "invisible" group of notes deep in the bass, suspended by the middle pedal, which creates background resonances); (3) sunlight (loudness and softness); and (4) humidity (pedal and no pedal). Just as any two visits to the Butterfly Zone may differ (due to weather conditions, crowd size, etc.), any two performances of the piece will have great potential for variation. The performer is free to add dynamics and pedalings at will. *Hyperfiction* and *Butterfly Zone* are contrasting observations of life in New York City, played out in the "carefully balanced" yet tension-filled medium of the piano.

* * *

There is great power, and humor, in opposites. This was an unexpected artistic lesson learned from the Berlin Wall. Granted, I hope to never see another Berlin Wall. The Wall was a painful divide masking the shared humanity of a country. So I'm very pleased that it's gone. (Actually, I wish a small part of it were still standing so that people could see what a crazy idea it was.) But I also find that in the realm of art and music, creating boundaries to highlight contrasts can be very powerful, and even very humorous.

Extreme juxtapositions of dark and light, naïveté and evil, loud and soft, and consonance and dissonance are exciting to me. Because setting up these opposing forces in a work of art can be deeply satisfying and deeply humorous, I sometimes juxtapose these kinds of opposites when I'm writing. And I feel like the crows over the Berlin Wall, flying freely back and forth over the artificial boundaries. It's interesting to apply some of those principles of extreme contrast to works of art. Again, I don't want to see the Berlin Wall reappear in reality. That's something that even the arguing blind men could probably agree upon: the Berlin Wall wasn't a very good idea.

So, to return to the opening metaphor, I am one of the blind men. I perceive a part of the sonic puzzle. I write it down. Like the other blind men, I used to argue when I would encounter pieces that seemed to contradict mine. But, over time, this has slowly changed. Though I am far from perfect in this endeavor, I am less content to argue now. I am more likely to listen.

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My *Attitude Problem*

By David Rakowski

In response to the *Current Musicology* solicitation letter, I think I am supposed to write about how I fill my pieces up with notes. This is a hard task for any composer who doesn't write pieces destined for deconstruction in graduate seminars: while I can fairly easily list some tendencies my pieces have, and much more easily list the sorts of things that other composers do that I don't, I can't imagine how interesting either would be to anyone. Plus, I believe that composers tend to be their own worst advocates—separating the composition of a piece from its hearing is rather difficult for us: when we tell you about trees, the listener hears forest, and vice versa. Now that the disclaimer has been made, it's time to press on.

Like most composers I know, I write idiosyncratically, changing my methods, kinds of pitch references, and overall view of form from piece to piece depending on the circumstances, ensemble, and materials. In general, I write contextually and from left to right; how I decide on what to do at any given moment depends on gestalt, voice-leading, and (by definition) context. The music tends to be either quite fast or rather slow, without a lot of gradations in between. I have learned a lot about compositional craft and continuity from listening to and studying the musics of Brahms, Berg, Bartók, and Martino, and I think the influences are easy to hear; there is also a strong presence of jazz harmony and funky, driving rhythms, according to some people who know what those words mean. I consciously follow what I understand to be a tension-and-release model, and strive for clear phrases and formal articulations: things start simple, accumulate, get more complicated, catch fire, and release tension with a big gesture to begin another structural section. Beyond that, it's anyone's guess what the heck I am doing.

One thing I hardly ever do is compose from the outside in or the inside out formulaically. There are rarely predetermined formal schemes posing as vessels in wait for the right materials to fulfill their needs; nor do I use fractal models in which everything in the small is reflected in the same way in larger formal levels. I pretty much move from moment to moment, left to right, shaping the piece and keeping as much in memory as I can, so that in the small and large it makes sense and makes a good story, at least for me. Rather than continuing to ramble on with vague and banal generalities, I'm going to take an informal look at a piece of mine and try to give a sense of how and why I wrote it, and follow how my thinking about the piece evolved as it took shape.

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I'll be writing about a piano trio I wrote in 1996–97 entitled *Attitude Problem,* which is published by C. F. Peters and recorded on CRI. Like most of my other pieces, it is atypical. The oddball title will be explained in the course of the essay.

The genesis of the piece was an e-mail from pianist Lois Shapiro in the summer of 1996 asking me to write a piece for her newly reconstituted trio, the Triple Helix; the performers are all virtuosi in their own right, and excellent chamber music performers. In 1993 I had written a piano trio called *Hyperblue* for the previous incarnation of the trio, with a different violinist; it was a very fast, virtuosic piece full of killer unison-writing that the group played like a million bucks. The performers described the piece to me as dark, sinister, jazzy, and intense, and also fun to play. The Triple Helix had performed it on its inaugural concert in the spring of 1996, a few months before Lois's e-mail, and it made a big splash. For the new trio, Lois made a few requests: she wanted some more "sinister, jazzy" music like in *Hyperblue;* and for her own part, she asked specifically for two things: she wanted to sock a lot of really low notes (she loved doing it in *Hyperblue,* so this was a request for a reprise), and she wanted a "big, smooshy, romantic" solo. Rhonda Rider, the cellist, asked if I could write something very high for her, in the next-to-top octave of the piano.

With those things in mind, I did what most composers do when they start a piece: I simply improvised piano trio music in my head for a while before I started writing anything down. This improvised music was constituted mostly of brief gestures, which were speculative thoughts about ways the instruments might possibly work in combination. These improvisations had both visual and sonic components: I do tend to "see" musical gestures before I write them down, and often the act of writing them down involves picking out the notes on the piano that most faithfully represent the gestures. I think of musical gestures as having a physical quality, and that is probably part of what it is I "see" when I imagine them.

Also before writing anything down I tried to imagine an overall shape for the piece. Rather than thinking hard, I hardly thought, settling on yet another three-movement *attacca* structure: fast–slow–fast. I think I prefer writing attacca movements because I'm simply not good at writing endings; with attacca structures I can end movements as big upbeats to the next movement, which is much easier. I also get fatigued as a listener by pieces—the chamber music of Dvořák being one of the more exasperating culprits—that keep ending. For the sake of practicality, I was shooting for a twelve- to fifteen-minute piece.

I did want the piece at least to begin differently from *Hyperblue,* for contrast in case the two trios were ever performed on the same concert, or consecutively. *Hyperblue* has a light, jazzy opening concentrated in the

middle register, generally at a soft dynamic. So I opted for a scowl-faced opening with heavy bowing, a wide registral span, something self-consciously on the ugly side—stereotypical *mod* music. For this musical impression, I use piano notes in extreme registers (including some socked low notes, as Lois had requested) and I have the strings hacking away at double stops that are interlocked registrally. For the sake of sonority, bowing, and fingering quickness, the strings' double stops involve both open and fingered strings. And because the music is supposed to function as an opening, I probably wanted the gestures to feel short and fragmented (see fig. 1).

Obviously this scowl-faced passage consists of two phraselets separated by silence; the first one ends rhythmically weak, as if still inhaling; the motion of the bass in the piano sounds to me like it is supporting a motion to a half cadence. The second ends tranquilly, but kind of in the wrong way. Given the quick and fragmented nature of the gestures that have happened so far, it's a little out of left field to end a phrase with this kind of repose.

The aggressive and obnoxious initiation of the second phraselet by the piano is a private joke: Years earlier, when the previous trio rehearsed *Hyperblue,* Lois always used a gesture of that shape, rhythm, and register in order to stop a run-through to make comments and ask questions. In this musical context, then, you can imagine that the pianist may be confused about the first ugly phraselet that just happened and tries to stop the rehearsal and talk about it. In response, the strings cut their sawing gestures short as if to see what the pianist has to say.

What the pianist "says" is the long chord that ends the second phraselet. I absolutely fell in love with that chord. It's got a beautiful, rich, sonorous quality, and, as I hadn't realized at the time, acoustic reinforcement of the bass—it's a C-major triad with D and C♯ added. Note too the dutiful, conservative voice-leading approaching the chord: the repeated C♯s in the bass pointing down to the C, and the chromatic line B♭–B leading up to it; and it is C's first appearance in this register; similarly, the top two notes in the chord are approached by step in the strings. I probably rationalized the C in the bass with voice-leading, and the rest of the chord as some sort of prolongation of what was in the strings. I did not know at this point that the chord was going to be important in the piece.

I was thinking of this music in this passage as introductory material, even though I wasn't sure just what it was that I was introducing, and as so often happens in introductions, the harmonic motion is glacially paced. Keeping the glacial harmonic pacing and the sense of introduction, I repeated the same chunk-chord gestures in the strings a few more times, around the same notes, with similar gestures in the piano. For no other reason than that anything worth doing once is worth doing twice, I ended

Figure 1

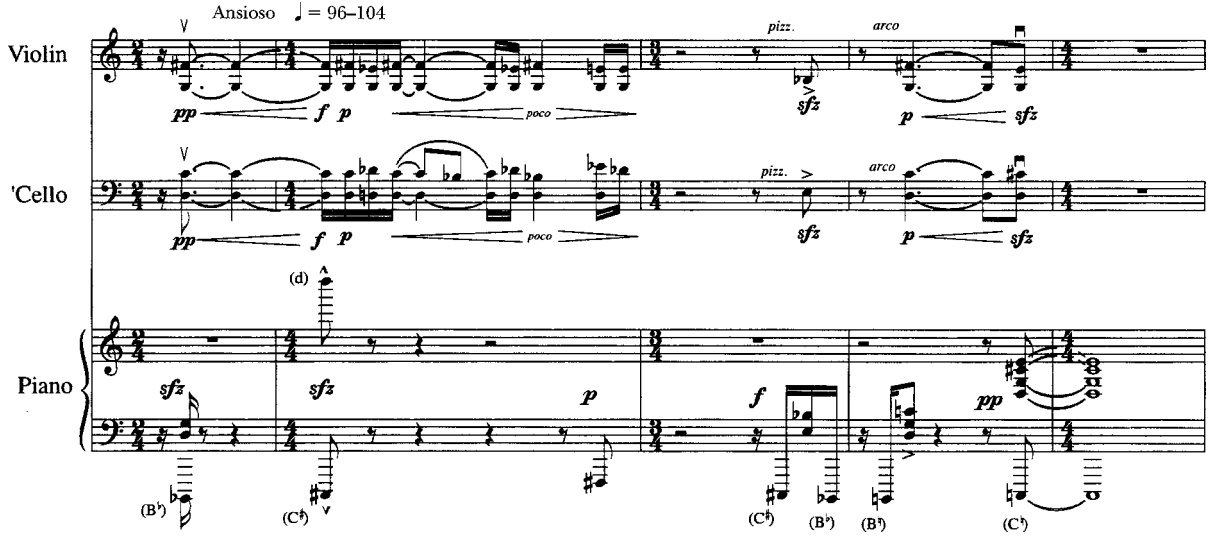

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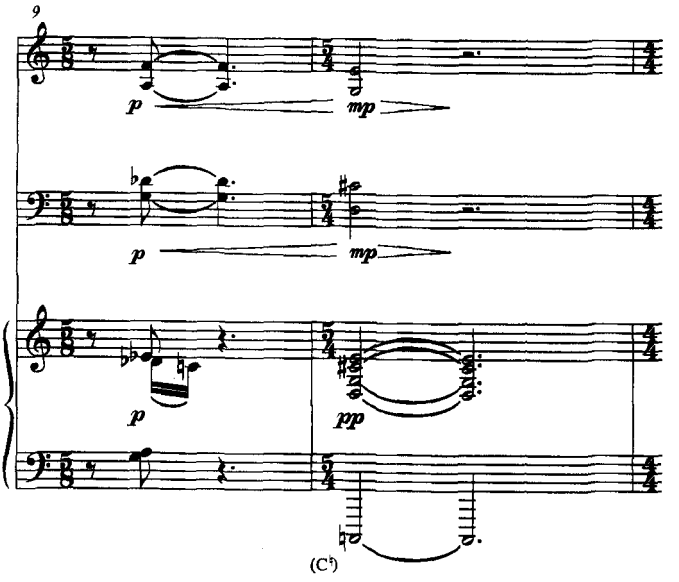
Figure 2



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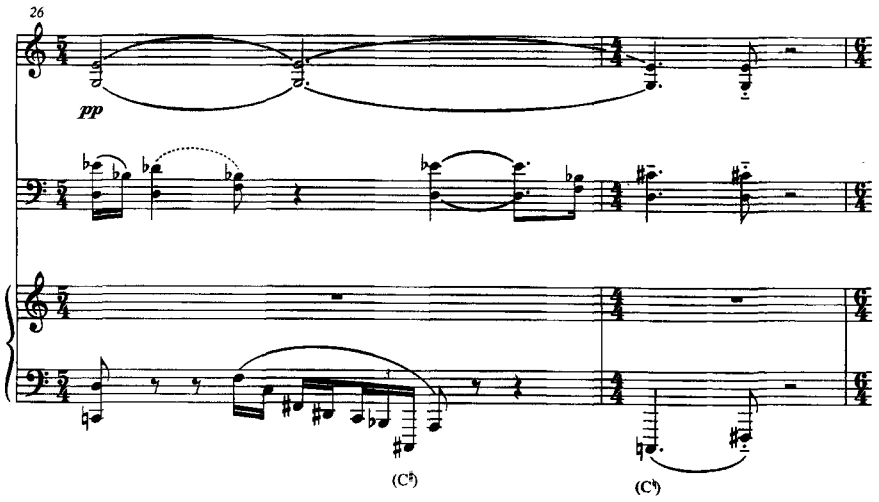
the second group of phraselets with the same gorgeous chord as the first group, this time phrased like a sigh (see fig. 2).

This time, owing to the rhythm and the voice-leading, the gorgeous chord felt more like it facilitated a concluding cadence than a half cadence, so it felt like a real sectional ending, possibly an end to the introduction. Well-trained, thoughtful composer that I am, I knew the next thing I had to do was to break out of this harmony, in order to "begin" the piece properly, and signal an end to the introduction.

But it didn't turn out that way. Dutifully, I did add legato, lyrical lines to the box of things that the strings know how to do; but I couldn't lose either the chunk-chord gesture or that gorgeous chord, and twice again I found myself ending chunks of music with the gorgeous chord—the second time articulated like a stereotypical Stravinsky chordal articulation, together with a tritone substitution stolen from jazz (see fig. 3).

By this point in the piece, I was aware that I had closed major phrase groups twice—perhaps three times—with the same chord, and now I *really* needed to go somewhere else harmonically, because this was getting ridiculous. So I put the piece down for a while to think about it (and about teaching first-year theory, replacing the garage door, etc., etc.). During this time, I encountered Rhonda, the cellist, at Brandeis, and she

Figure 3



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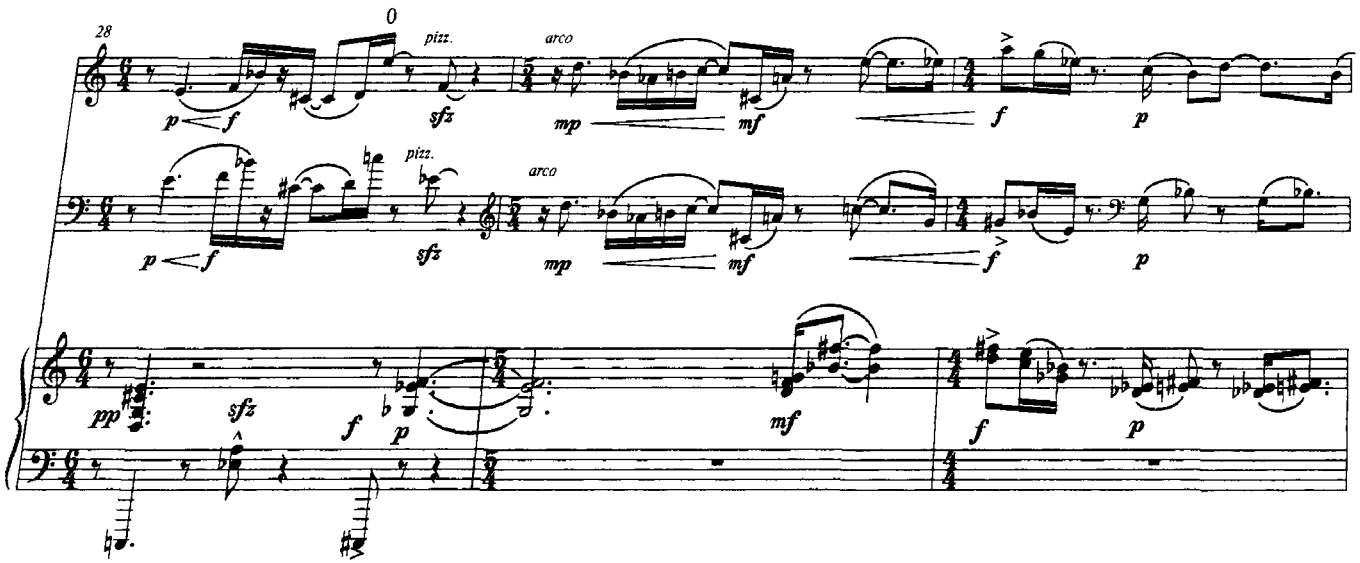
asked how the piece was going. I told her that I'd written a lot of notes, but couldn't get the piece actually to go anywhere yet. She said, "It sounds like your piece has an attitude problem. In fact, I think that's what you should call it." Not one to turn down a performer's suggestion, I said I would, but didn't mean it. But after thinking about it for a while, I decided I could use the title, because that way I could have a sort of hook for the piece—or at least an interesting way for me to think about what I had already, and where to go next. Consequently, I was able to think of this misbehaving passage not as a bug, but as a feature. That's it—the first movement's *attitude problem* is harmony that moves very slowly, or not at all, despite a lot of *sturm* and *drang* on the surface.

This meant I could, or even should, begin what I was now very clearly thinking of as the main body of the movement in exactly the wrong way: with the same chord and another sequence of frantic surface gestures (see fig. 4).

Beginning the main part of the movement with the same harmony and gestures as the introduction probably struck me as a little perverse. Perverse is good, though, in moderation, and is especially good in this piece.

Clearly, though, I eventually had to stop starting and stopping, especially since all of the gestures were turning out to be short and of similar lengths. Eventually the music does become more continuous, but only after Lois's prized socked low notes go away for a while. In the next three

Figure 4



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or so minutes of music, the gorgeous chord is only heard incidentally a few times; the strings eventually start playing a composite lyrical long line, and the movement comes to a climax. I think the climax is strongly reminiscent of Bartók, if he had listened to too much Tower of Power in his youth (see fig. 5). See the baritone sax in the socked low notes in the piano's left hand and the squealing trumpets in the violin?

By this point, I imagined that the listener (and performers) would be fatigued from hearing so many notes and so few different harmonies—I know I was. Indeed, the lack of significant harmonic movement made me think of the music as a little like a hamster on a hamster wheel, forever running but not getting anywhere. So I ended the movement with a return to the opening harmony and gestures, although quite a bit slower, mimicking that fatigue; I think the Triple Helix understood the point of this return because they perform this passage without vibrato or inflection—they really do sound tired.

It made sense to begin the second movement with a new chord of a markedly different quality; if I calculated correctly, the chord would feel like a big exhalation, a big relief, because we're finally in the section of our program where harmony moves. As an overlap, though, I had Lois pick up the repeated E–F♯ figure in the violin part and turn it into an accompaniment figure to start her smooshy, romantic solo (see fig. 6).

Obviously the piano bass note at the opening of the second movement could not be C (as in the gorgeous chord), since that would tend to defeat the impression that the harmony had finally moved.

When I wrote the first bar of the second movement, I hadn't thought yet what the "attitude problem" of the second and third movements might be. The simple metric modulation that I had used to get from the first to the second movement gave me the idea to have the three instruments proceed in different pulses, but to agree harmonically—the pulse disagreement is the attitude problem. In performance this tends to sound like extravagant rubato, which is fine with me. (An additional idea was to have the piano accompaniment be present for the whole movement, gradually slowing down from eighth notes to dotted halves and then speeding up.) Predictably, when the piano slows to its longest pulse, the gorgeous chord is heard for the only time in the movement.

Rhonda gets her extremely high cello solo after the smooshy piano solo, and the piece proceeds as you would expect: the violin enters, all three play a while, the violin gets a solo, and the cello reenters. By then it was time for a transition to a fast movement, and it occurred to me that the way to do it was to have the lines agree in pulse again, and start doing things together. You can see where that happens in fig. 7; the piano doesn't catch on for another two bars.

Figure 5

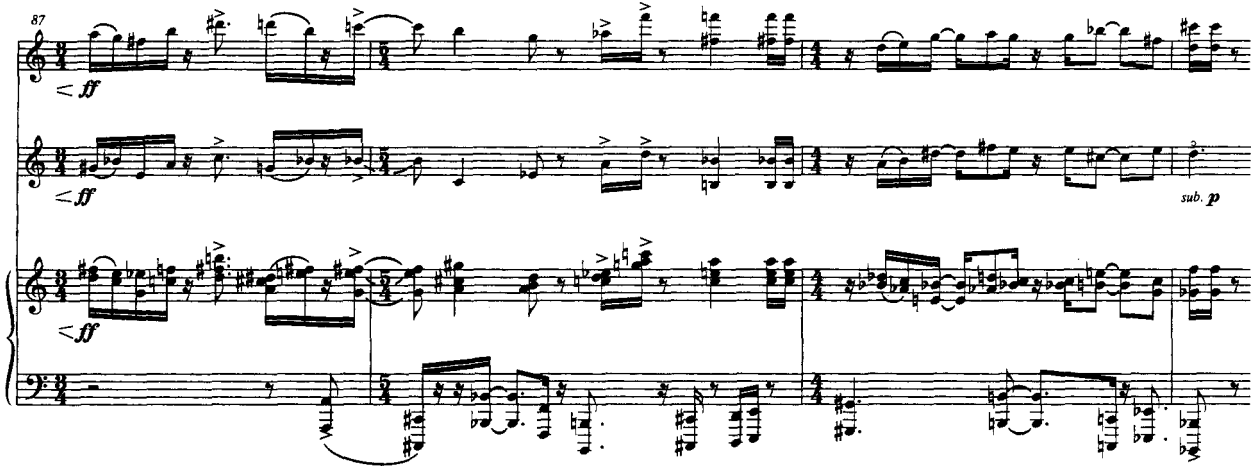

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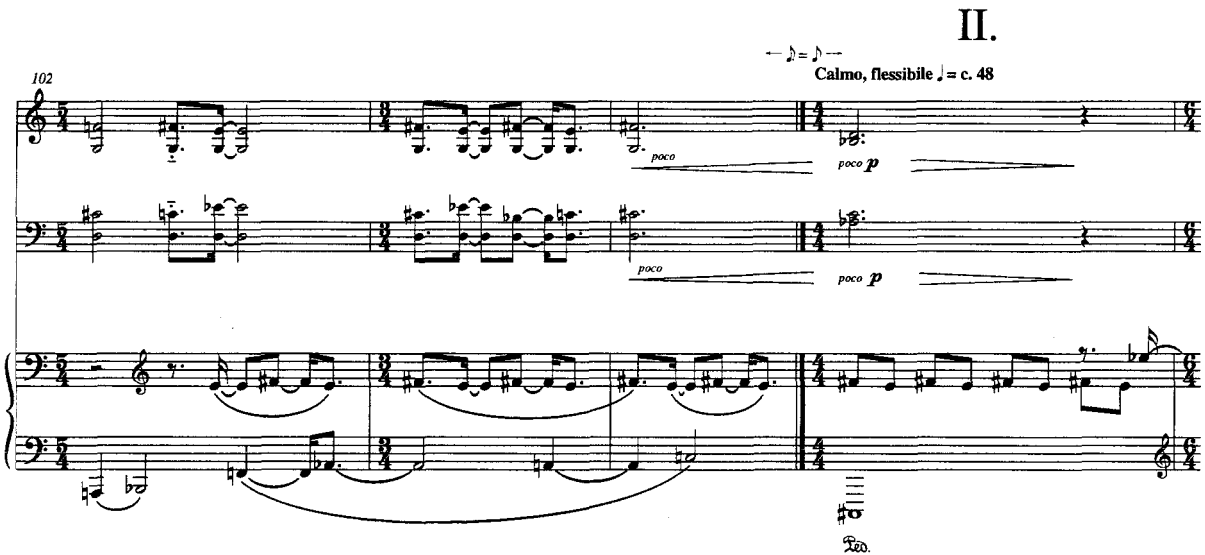
Figure 6



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In this rough-and-ready transition, all the parts speed up to sixteenth-note triplets, and strings gradually slide back into the notes and gestures that opened the piece, except that this time, because of the great speed, they sound frantic and more desperate—as if struggling in quicksand.

In other words, the piece was back in harmonic stasis, sounding even more desperate than before, and gave me a new picture of the gorgeous chord in which the harmony was now stuck: the gorgeous chord became a mysterious black hole, capturing the string players like flies onto flypaper, causing them to flap about frantically. I was reminded of a running gag on an old Bill Irwin special on public TV: when he got close to one corner of the stage it would appear to be sucking him offstage; when the string players get close to the opening chord, it appears to be sucking them in, requiring a heroic gesture from the piano for them to be freed.

I liked the idea of pianist as hero. Plus, a heroic gesture would necessarily be a dramatic one, the upshot of which would be a signal of the beginning of another movement (see fig. 8).

At this point the simple two-note figure in the violin, together with the clearing of the murky quicksand texture, should have the metaphorical feeling of opening a window for the first time in spring after it has been closed for the whole winter—in other words, a feeling of clearing the air. In fact, at this point I thought of the violin as a character in an air freshener commercial, where our blonde protagonist sniffs the air in ecstasy, life is beautiful, and nobody is ever going to hurt us again. But as you would expect, it soon turns out to be a revel without a clue . . .

Which is a good setup for a scherzo movement. I love writing scherzos for several reasons. First, it's fun writing fast music, especially when there are so few composers—especially composers of similar outlook and training—who seem able, or willing, to write truly whizbang-fast music. Second, performers usually like to play fast music as long as it's gratefully written for the instruments and it makes them sound good. Third, with stuff flying by so fast, it's fun and challenging to see what sort of rhythmic games I can get away with. By saying this music is scherzo music, I'm not saying anything about its form, just about a state of mind.

As scherzo music, it might as well live up to its name—hence the ideas for the "attitude problem" of this movement. I decided on two attitude problems happening simultaneously: flowing notes in a triple subdivision conflicting with and interrupted by articulated notes in a duple subdivision; and scrupulously prepared climaxes that go unfulfilled. In fact, it is often these duple interruptions that prevent the climaxes from coming where they are supposed to.

The cello shortly joins the violin in the air-freshener commercial. Now for the sake of the scherzo, I thought of the strings as being so ecstatic

Figure 7

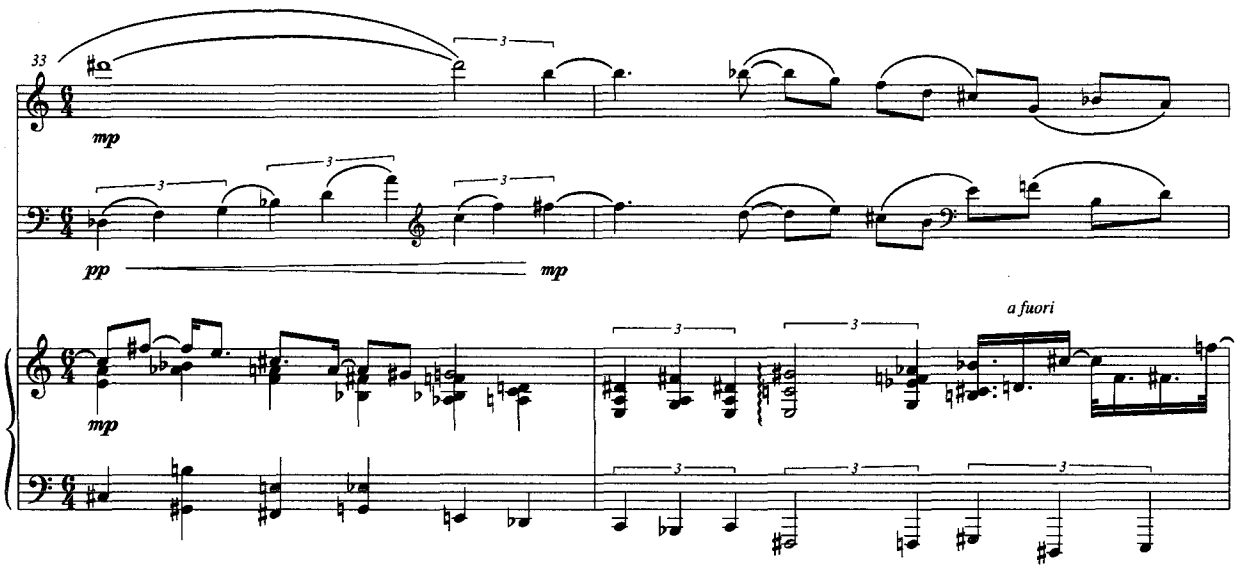

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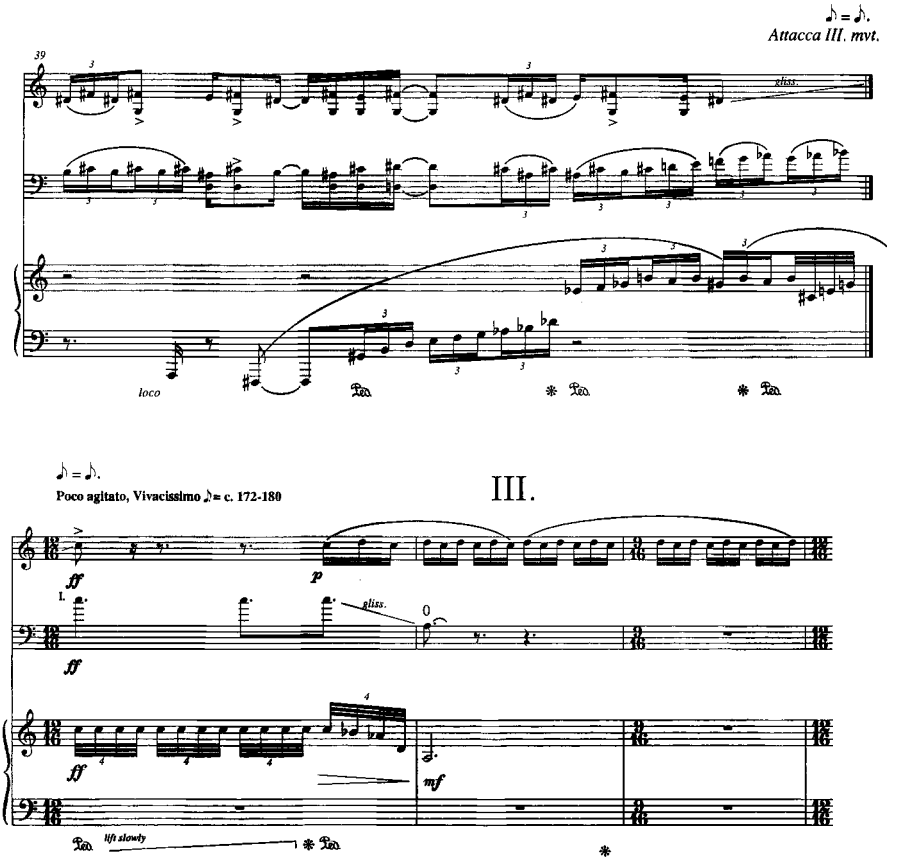
Figure 8



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that they'd eventually lose control and start tripping over themselves, which leads to the first unfulfilled climax. The ecstatic gestures eventually coalesce again into the gorgeous chord, and the strings get stuck, unable to move, as before. So the piano has to come to the rescue with another heroic gesture (see fig. 9).

The immediate response of the strings to the piano is straight out of a cartoon—the harmonic disagreement is supposed to sound as if the strings have stars in their eyes from being slapped so hard. But since the slapping doesn't seem to take, the piano has to repeat the gesture, amplified this time with the "let's stop and talk about this" gesture from the very beginning of the work (see fig. 10).

Figure 9

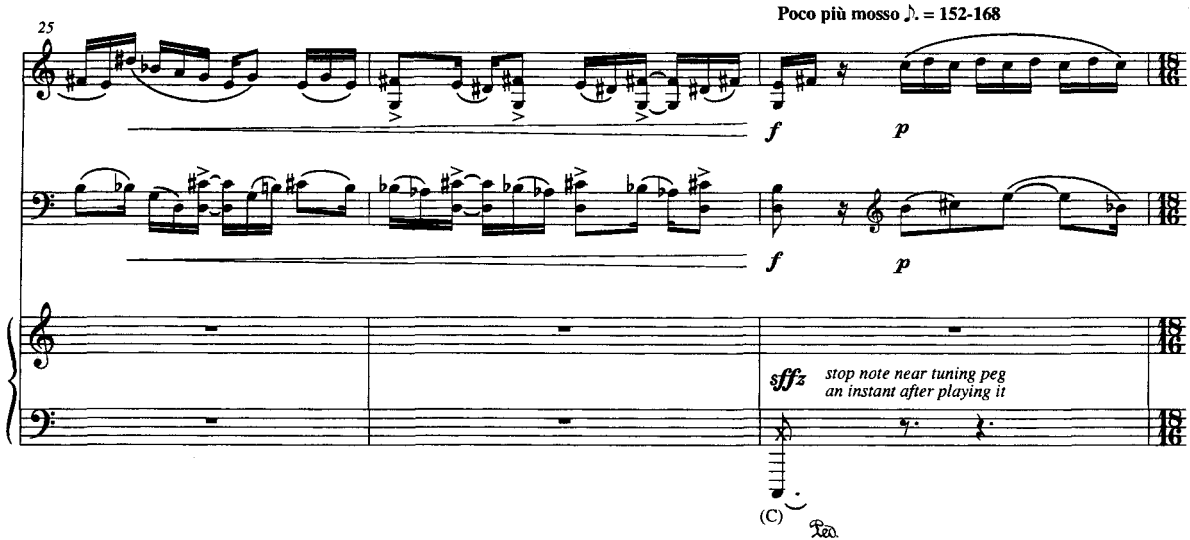

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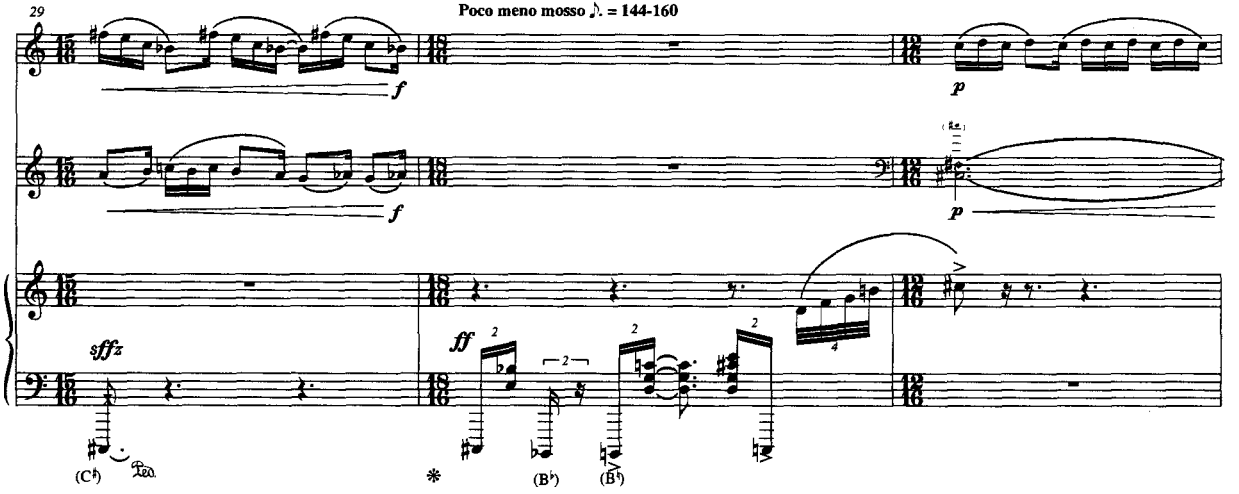
Figure 10



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This is where the duple-vs.-triple subdivision attitude problem is first heard. The interruptions of the triplet stream by the duple notes become more invasive and obnoxious later in the piece. After a few more exchanges between Lois and the strings, Lois is left by herself on the alternating E–F♯ accompaniment figure, as she was at the opening of the second movement. In fact, each re-beginning after this point begins with alternating E–F♯ figures. Right after this, the group seems finally to catch a groove, but it is frustrated by the intrusion of the duple figures, and the music winds down and starts again (see fig. 11).

Several times after this, the same large-scale gesture is repeated: the piano is left by itself on an E–F♯ figure, the music builds, and is thwarted from climaxing by various interruptions. One of the interruptions is a private joke: While writing this movement I met composer Daron Hagen for the first time and was listening to his music. I very much liked the fake swing music at the beginning of his opera *Vera of Las Vegas* and I used the feel of that music as one of the interruptive gestures in the next large segment (see fig. 12). The two gestures in swing eighths that diminuendo in the piano quote the feel of Daron's piece while using notes from another piece of mine.

There is another much longer passage, initiated again by E–F♯ figures, which manages to continue and build, this time seeming to ignore the myriad interferences of the duple idea. In order to "resolve" the conflict once and for all, a real climax finally happens, and it is heard entirely in duple time—after which the duple villain disappears (see fig. 13). Note that Lois gets to sock her low notes here, and gesturally it's like Bartók hepped up on Tower of Power again.

At this point, with both attitude problems "solved," I figured it was time for a coda in which another old problem is dispensed with—that of the gorgeous chord. This coda begins as all the other re-beginnings in this movement do, with an E–F♯ figure, and this time explicitly attached to the gorgeous chord (see fig. 14).

But this time the chord feels defanged. There is no heroic gesture extracting the strings from the chord—just business as usual. And the coda that follows is so happy-go-lucky that it is as if nothing has happened. The strings glissando to harmonics, the piano keeps the sixteenth notes active, and eventually the piece simply ends understatedly, on the gorgeous chord (see fig. 15).

A high D♭ from the piece's opening (a little later in the piece than is shown in fig. 1) "moves" to D in the violin here at the same time that the bass moves locally from C♯ to C. That is there as a joke, as a red herring

Figure 11

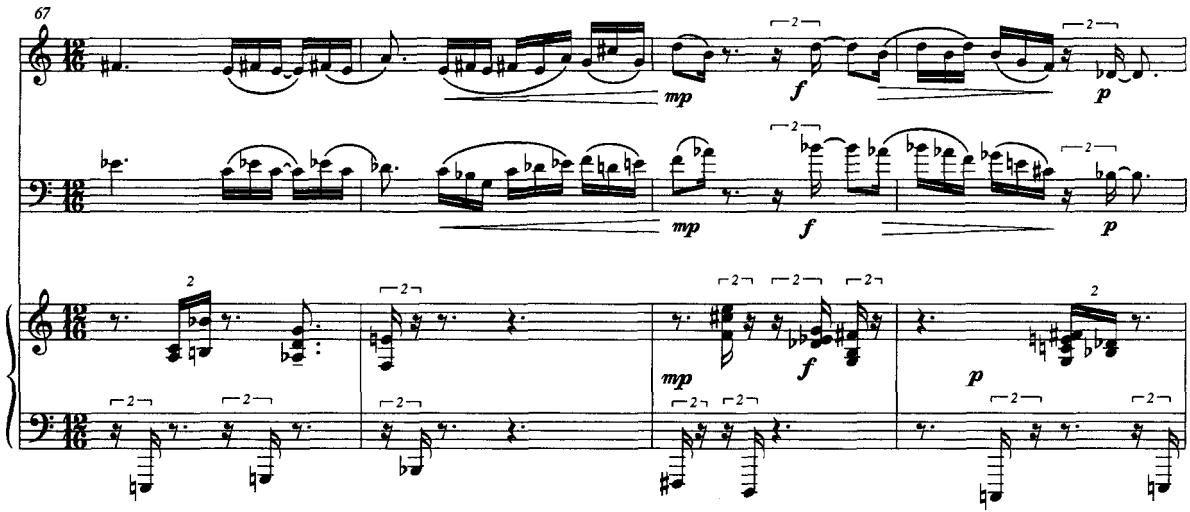

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Figure 12

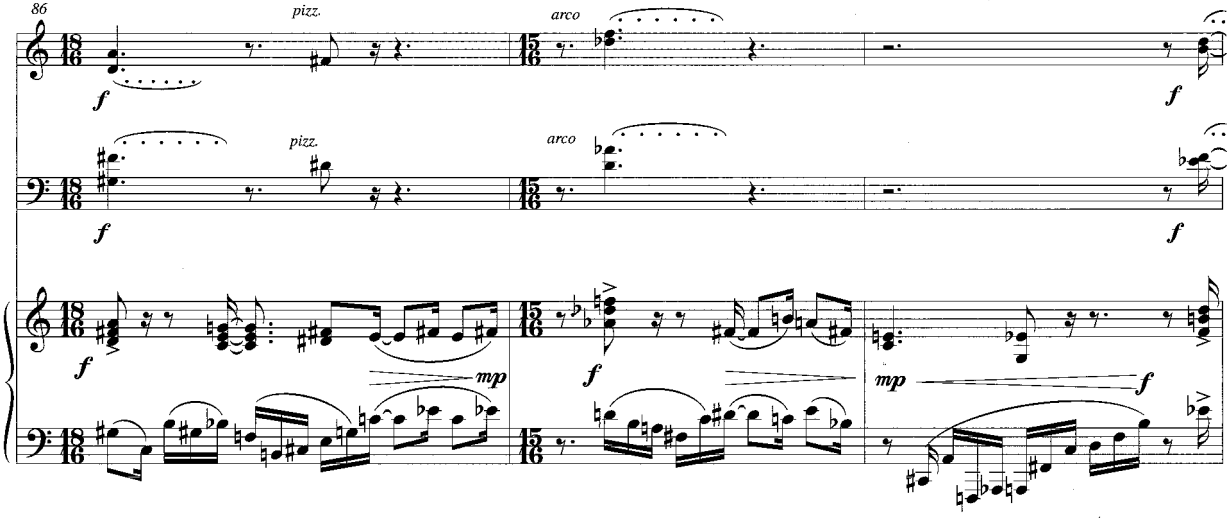

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Figure 13

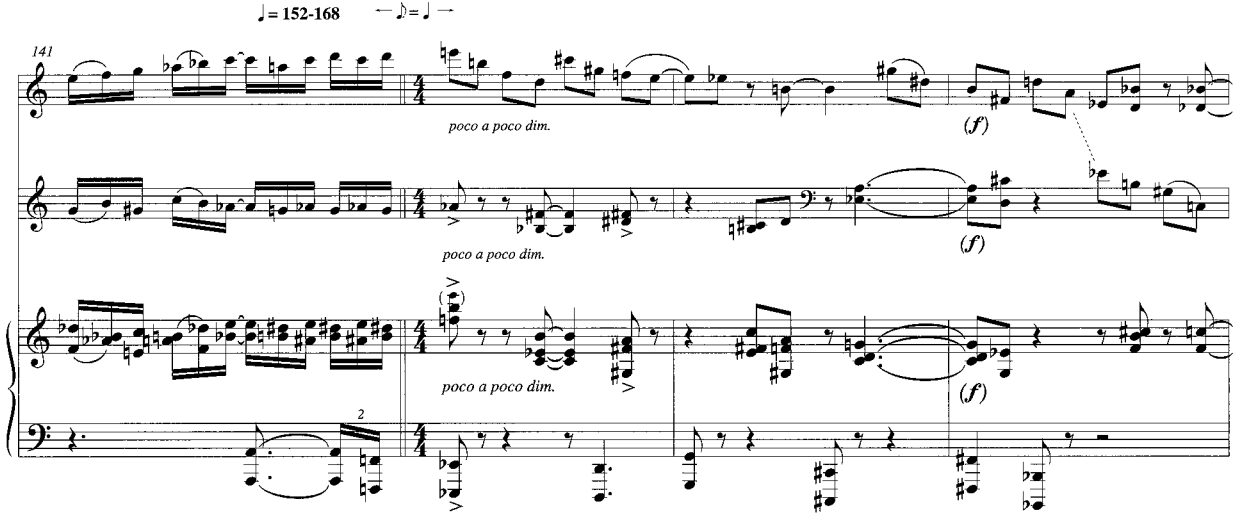

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Figure 14

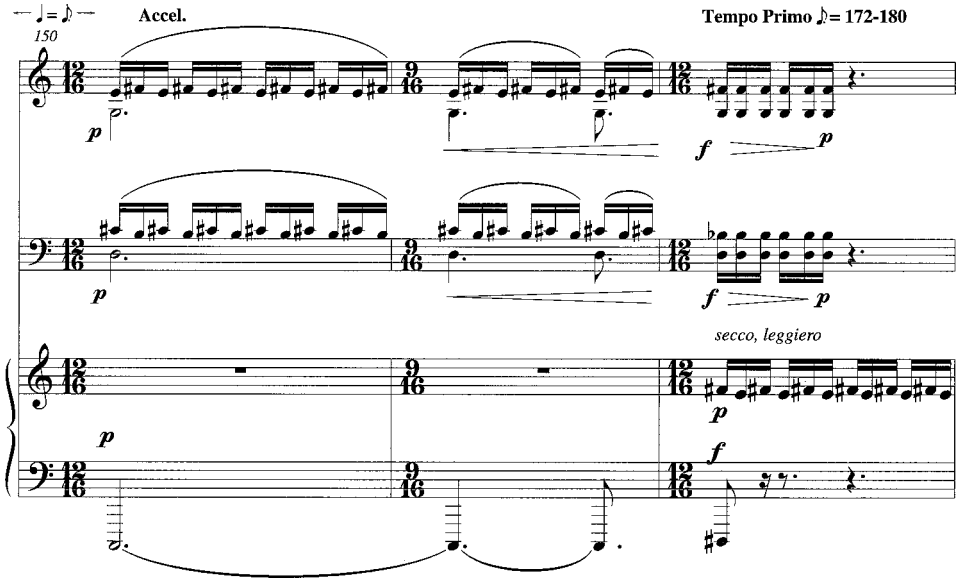

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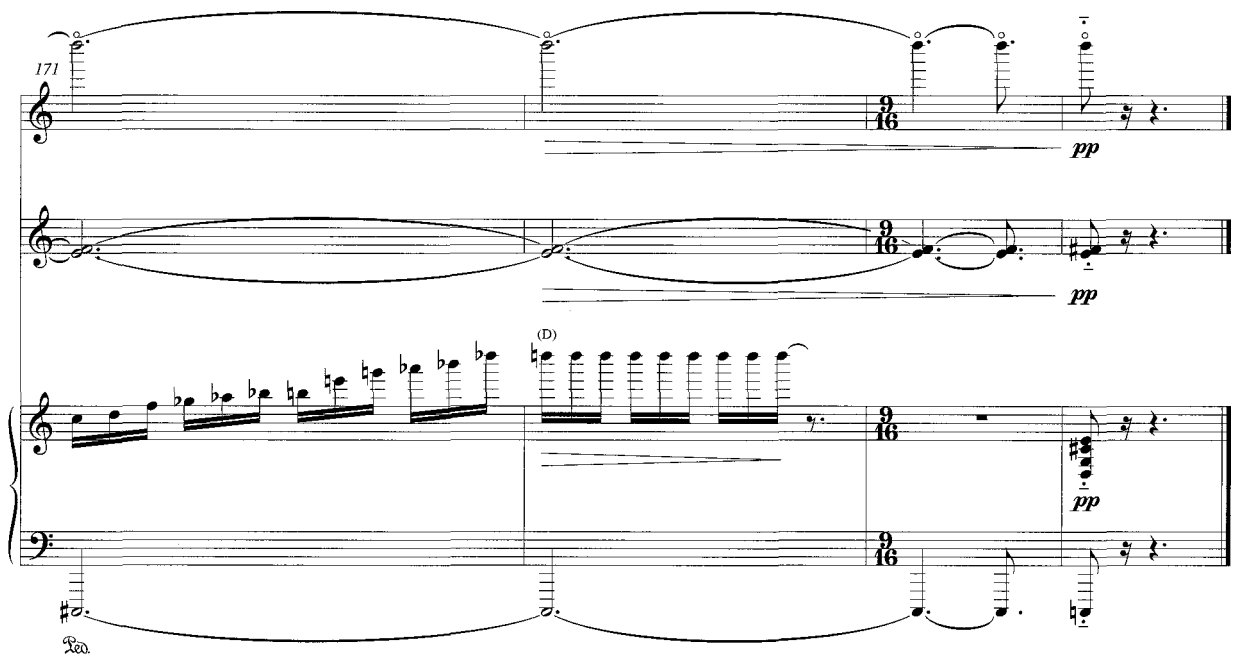
Figure 15



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for future theorists who may read somewhere that there is voice-leading in my music.

I frankly don't know how a listener would receive this piece, whether exposed to the long narrative just presented, or innocent of it. I would hope that the successions of formal articulations are clear, and that the gestalt of the music is something like the gestalt I felt when writing it. And I would hope that on repeated hearings, the function—or at least the repetition—of the "gorgeous chord" would become clear. Beside all of that, I would presume any listener would bring experiences into a listening that I could never dream of (and therefore write for), might have some interesting things to say (or complain about), might find relationships in it of which I was unaware, or might simply get up and start dancing (which I would like). But one thing is clear—I am too close to the piece to tell you what it is. I can only say with any accuracy what it is made of.

. . . whence freedom

By Thomas L. Read

I should like to euphonise that.
It sounds an isochronism.
—Finnegans Wake

In much of the music I have composed over the past thirty years, free expression is harnessed to, though not entirely contingent upon, generative processes that are impersonal and mechanical. Often inaudible as such, these processes fabricate polyrhythms and melodic configurations, sometimes archetypal in nature, whose inevitability is real but not always apparent.

Consistent with the dictum that nothing is in the understanding that was not first in the senses, I can recall, from sometime during 1968–69, a dream-state suggesting vast space, with points of light and sound, in patterns that seemed at once both random and strangely inevitable.[1] Then, too, I must have been sensitive to what was "in the air" among many artists and composers: a reviving interest in allowing growth and change to issue forth from repetition and regularity. In any case, as a composer, I was intrigued with the possibility of enlisting both symmetrical construction and proportional (temporal) dissonance to generate extemporized-sounding forms. Intuitively, I sensed that my musical imagination was most freely and effectively engaged when interacting with, and transcending, existent, mechanically sustained rhythmic phenomena; and, quite suddenly, a simple possibility occurred to me wherein the formulation of pitch succession and duration could be united in a single generative process. Simply stated: Each pitch class chosen for a particular composition would recur at equal, evenly spaced intervals of time, or, possibly, at progressively smaller or larger intervals of time. Either way, once intuitively established, the process would be automatically carried out. In the simplest situation, the conflict of periodicities so established could *be* the melodic/rhythmic/harmonic structure of the piece. Of course, such a feature of conventional music as melody, for instance, could be produced, or subjectively apprehended, as a "by-product" of this activity; it could be the outcome of combining 5, 6, 7, or more different-pitched pulses (see figs. 1 and 2).

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Figure 1: *Light After Light:* "theme," mm. 19–26.

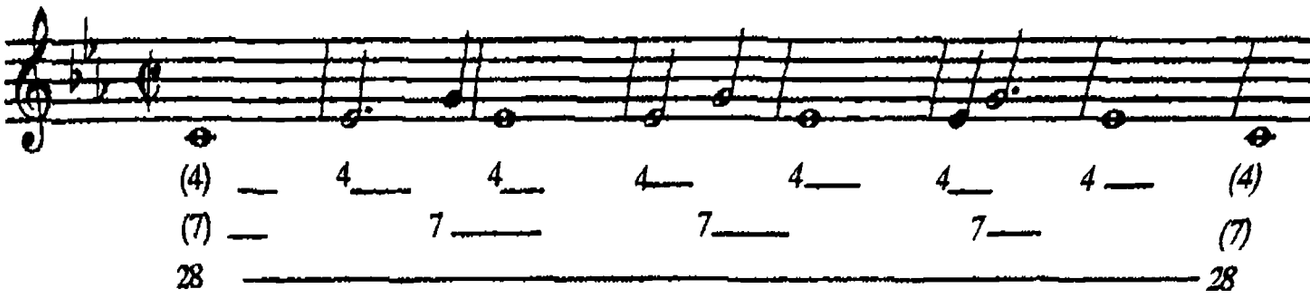
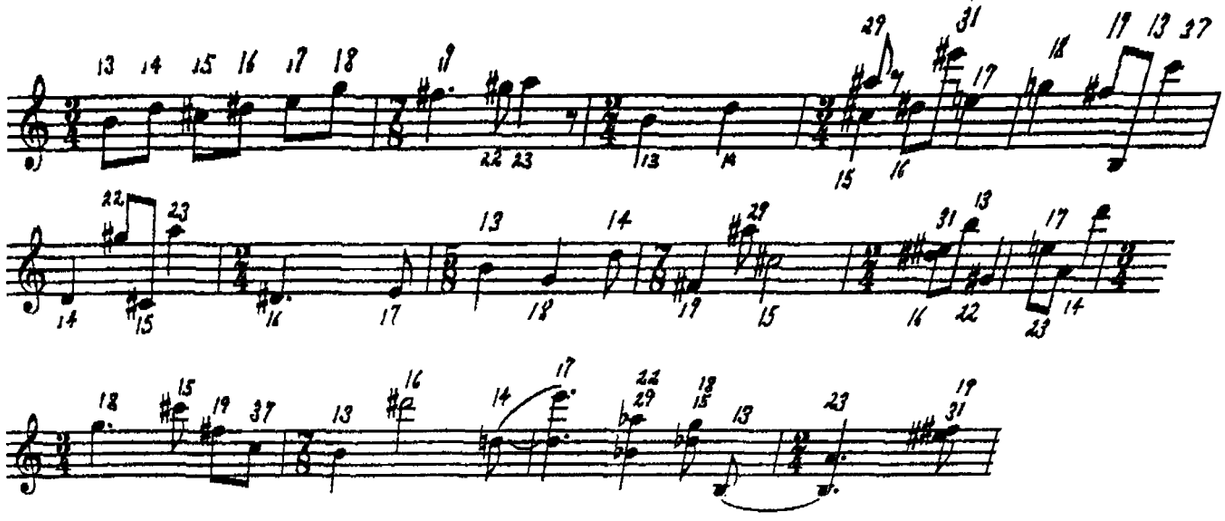


Figure 2: *Suite for Solo Violin:* Caprice di canon, beginning.



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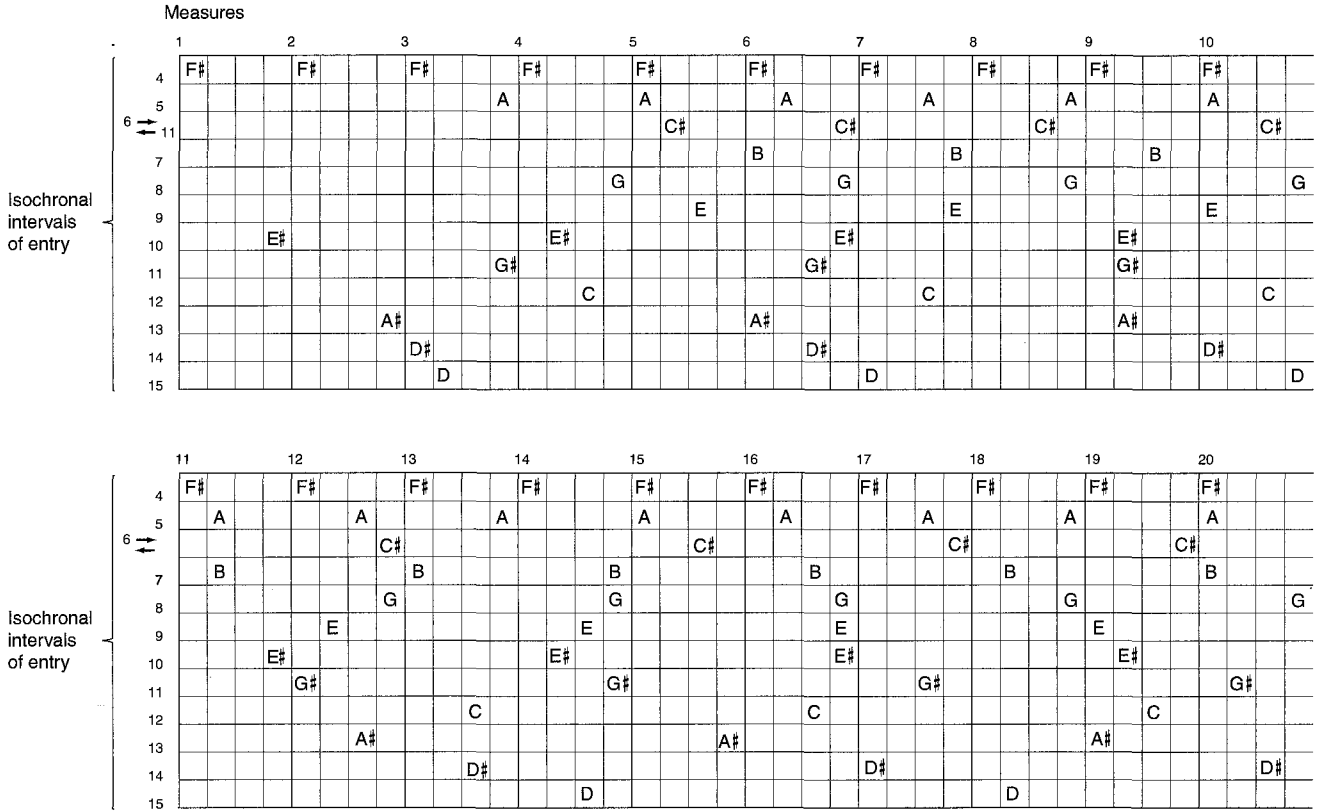
Soon my compositions were being shaped not by serial procedures and aleatory operations, as they had been, but by cyclic repetitions of many different sonic moments, carried out independently in the various layers of the musical fabric. My forms grew through manipulation of those processes of cyclic repetition that would *automatically* produce change and variation. At one stage in the development of this compositional strategy (dare I broach the word "method"?), I began to call such pieces *isochronisms*—appropriating the term given by physicists to the equal time intervals of swinging pendulums. Enlisting various "isochronal procedures," I try to integrate elements of sound in a musical web of relations. Harmonic tonality incorporates properties of the natural harmonic series; I like to think that isochronal textures imitate intersecting time cycles that we experience in everyday life.

A graph of the beginning of a simple "isochronal structure" is shown in figure 3. Only the succession of pitches and their intervals of entry are indicated. The intervals of entry were plotted according to the time units—the "formula of proportions"—given in the far left-hand column. The graph is read as follows: an F♯ is initiated every 4 beats (one square = one beat); an A♮ every 5 beats; a C♯ in a progressing cycle of 6, 7, 8, 9, 10, 9, 8,

Figure 3: Isochronal structure.



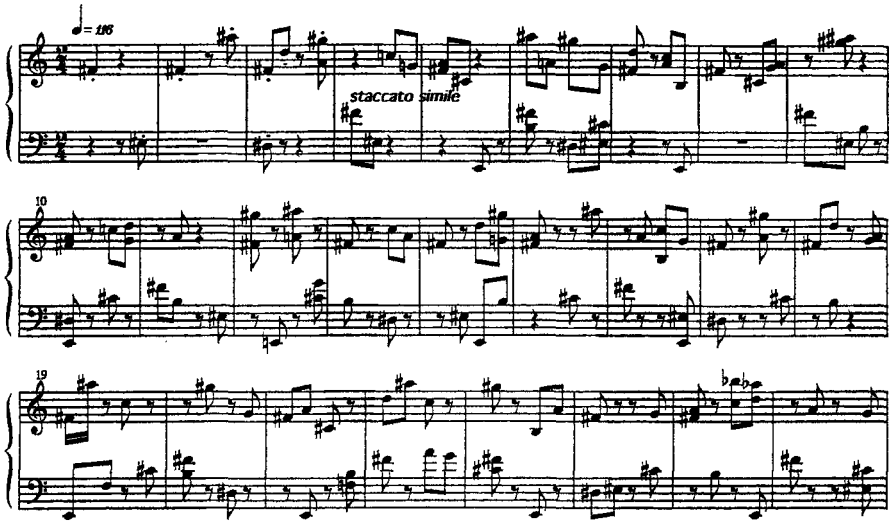
7, and 6 beats (C♯ has the only expanding/contracting cycle in this isochronal structure); a B♮ every 7 beats; and so on.

The *Vivace* from *Piano Music,* vol. 2, is a realization of these isochronisms, and, as verified by the score (shown in fig. 4), it represents a fairly automatic and mechanical rendering of the graph: octave registers are fixed and no metronomic, dynamic, or pedal markings are given. One beat of the graph is equal to one eighth-note of the score. Some "concessions" have been made to accommodate traditional and practical expectations: "difficult-to-play" simultaneities are arpeggiated, and a rhythmically free, cadenza-like interruption is included in m. 64 (not shown in the example). Isochronal repetition resumes in m. 65, with all pitches transposed a whole step higher than in the initial section of the composition.

Although the twelve fixed time units that produce the interactive rhythmic proportions are additive (whole-number multiples of the basic unit), an extraordinary number of beats must elapse before one can encounter a repeat of measure 6 (the first measure in which all twelve units have entered). Clearly we are dealing with a virtually endless process, what Roger Reynolds might call a "vastly distended periodicity," revealed here as a nonrepetitive but harmonically static succession of sounds (some would say a mindless, inhuman one—unfeeling, like the universe). How to allow human feeling a place? How, practically speaking, to make a "coda" and an ending? In the case of the *Vivace,* this was accomplished by grafting traditional devices of articulation onto the basic structure. The cadenza and the transposition just described help to give the form a "middle." A sense of "beginning" in measures 1–5, and a harmonically ambiguous stop at measure 139 (which concludes the *Vivace*) were engineered by gradual, selective subtraction of isochronisms. There are no marks of interpretation in the score. Performers, through habit, convention, or invitation may supply such things in unique and interesting ways.

To invent far-reaching elaborations, to explore the possible interactive gestures and concomitant cyclic interchanges set up by the isochronisms, to highlight the synchrony of emergent lines, indeed, to use the simple structure as a scaffold on which to build free elaborations (much as the ancients used isorhythmic constructions or the cantus firmus and the ground bass) are the proper responsibilities of the composer rather than the performer. I have enthusiastically taken on such responsibilities, not only in the *Vivace* variations included in *Piano Music,* vol. 2, but in all of the isochronal music I have composed. This experience allows me to describe, in a by-no-means exhaustive or systematic way, a list of principles that have been variously useful to me.[2]

Figure 4: *Piano Music,* vol. 2: *Vivace,* mm. 1–26



(1) *Integration.* A collection (arbitrary, to be sure) of isochronal durations may be used to govern change and succession in all parameters, just as it is customary for the content of a single pitch set to exert pervasive control in integral serialism. (*Isochronisms No. 2,* for string quintet, first movement, exemplifies pervasive isochronal procedure. For discussion of this principle, see below, and figs. 8, 9, and 10.)

(2) *Contextual Adjustment.* Limitations may be placed on the amount of influence exerted by isochronal procedures. For instance, dynamics and articulation may be contextually determined rather than isochronally derived (as they might be expected to be in (1), above) so as to complement or highlight specific isochronal elements of the form (see *Contraries,* for handbell choir, where dynamics and register are contextually determined and where both isochronal *and* change-ringing procedures are used to generate pitch succession).

(3) *Division.* Isochronisms may be embellished and elaborated using repeated notes (as in the conventions governing immediate pitch repetition in dodecaphonic music) or by division with scales or arpeggios (see *Light After Light,* for violin, clarinet, cello, and piano, beginning of part 2; *Alcyone,* melodrama for narrator, chorus, and ensemble).

(4) *Layering.* A form may be built up from free or systematic alternation and superposition of independent isochronal aggregates (see *Light After Light,* part 1; *Variations for Eight Instruments*).

(5) *Filtering.* Isochronisms may be "gated" or used selectively. Only those pitches or events are used that will, at a given moment, produce an effective *gestalt,* harmony, or counterpoint (see the *Nocturne* and *Vivace Variations* from *Piano Music,* vol. 2; *Isochronisms No. 2,* first movement, mm. 120–51; *Adventura,* for orchestra, especially the central section with its overlapping chords; see also fig. 11, below, where after m. 99 the expected recurrence of G♮—after every four eighth notes—is sometimes suppressed).

(6) *Articulation.* Phrase and section dimensions may be controlled by filtering freely, or in accordance with a cyclically repeated pattern. To illustrate this, a graph of a rhythmic structure fashioned according to (4) and (5) is shown in fig. 5. Two collections of six isochronisms each are graphed. Filtering is applied to articulate both phrasing and texture: in the first collection (durations 2 3 4 5 6 7), each isochronism is repeated three times in succession, followed by a "pause" lasting up to the last beat of the fourth measure; in the second collection (11 13 17 19 23 26), one "silent" isochronism separates three consecutive sounding ones. (In the graph, the *sounding* isochronisms of each collection are circled.) "Selective gating" is applied to mm. 5–10, wherein only those isochronisms of the first collection are permitted to sound that are congruent in time with the sounding (circled) isochronisms of the second collection. (In the example, congruencies are shown by vertical brackets.) A sonic realization of the verticalities of these measures (5–10) will likely produce a discontinuous, random-sounding succession. It is also possible that the ear will discover "connections" consistent with traditional harmonic progressions. One can't be sure: Is that configuration fortuitous, or was it 'engineered'? I enjoy such paradoxical, sometimes serendipitous moments in music, and in life, where "causal necessity" is hidden to understanding.

(7) *Acceleration/Deceleration.* By expanding and contracting the duration of individual isochronisms, thus modifying the frequency with which specific pitch classes are initiated, one can approximate traditional harmonic modulation, or transform the predominant, perceived metric grouping (see *Variations for Piano Trio,* concluding section; *Nocturne* from *Piano Music,* vol. 2).

(8) *Oscillation.* Pacing can be modified by allowing controlled but regular oscillation between passages that have free octave-register changes, and those in which registers are fixed or are changed in cycle. For example, in quadruple meter, octave-register shifts might be located after 3, 2, 1, 3, 1, 2, and 3 measures, such a cycle being the resultant of 5:3 time units; or, based on the resultant of 8:7 units, a shift could be located after every

Figure 5: Systematic filtering of isochronisms.

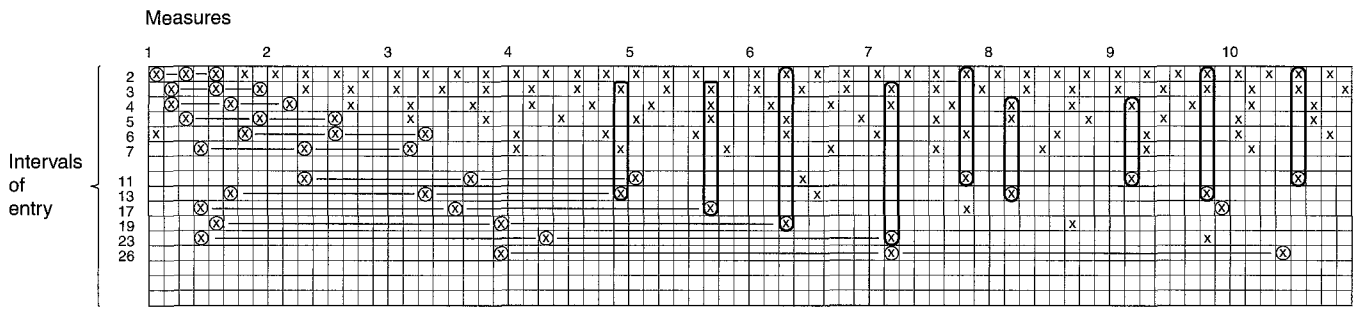
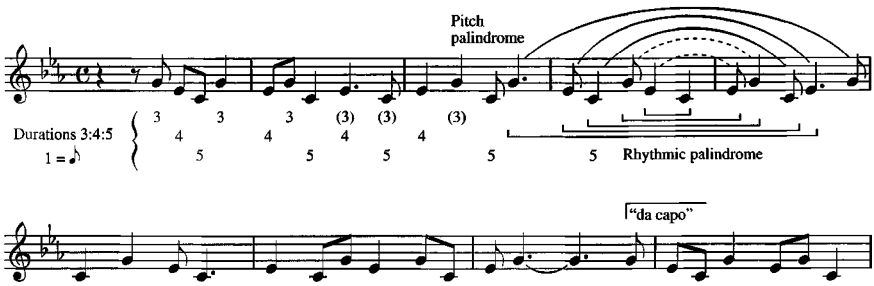


Figure 6: A palindromic structure, from *Light After Light.*



7, 1, 6, 2, 5, 3, 4, 4, 3, 5, 2, 6, 1, and 7 measures (*Symphonic Episodes,* for orchestra, explores this principle). Such palindromic series as these, are, of course, an inevitable by-product of isochronal and polyrhythmic processes. This attribute can be highlighted by condensing a palindromic durational series into single lines, as shown in fig. 6.

Mensuration canon is also a potential by-product of isochronal procedure. A straightforward production of such a canon is graphed in fig. 7. In the sonic realization of the graph, the diagonal lines linking isochronisms are each assigned to a different voice and register. (Another such canon is shown above, as fig. 2.)

The principle of combining isochronal units can be extended to determine many layers of a musical fabric. As a demonstration, the steps necessary to establish the framework of a piece in which succession and length of the structural divisions replicate a portion of the piece's isochronal rhythm may be summarized as follows:

(a) The graph of the isochronisms is compiled, assigning the same number of beats to each graph page.
(b) Each graph page delimits a section of the work's gross form.
(c) Each section (having the same number of beats but not necessarily the same tempo) is associated with one of the isochronisms and is, similarly, repeated and combined with other congruent sections (see fig. 8, below).

We can imagine a piece having a total of five different sections, or continuities, defined in any way we choose—by melodic content, by tempo, by instrumentation or whatever—and we can use the first twelve beats of the graph as a basis for ordering and repeating the five sections to produce, finally, a cyclic interchange of different musical textures.

Figure 7: *Te Deum:* mensuration canon.

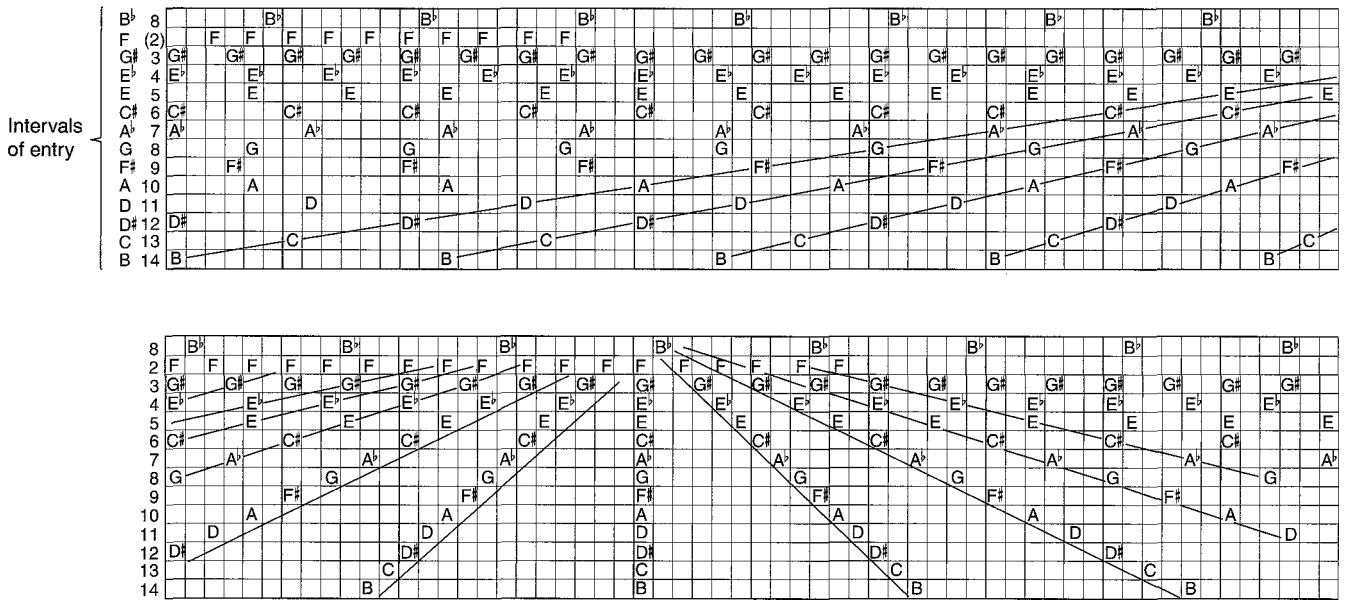
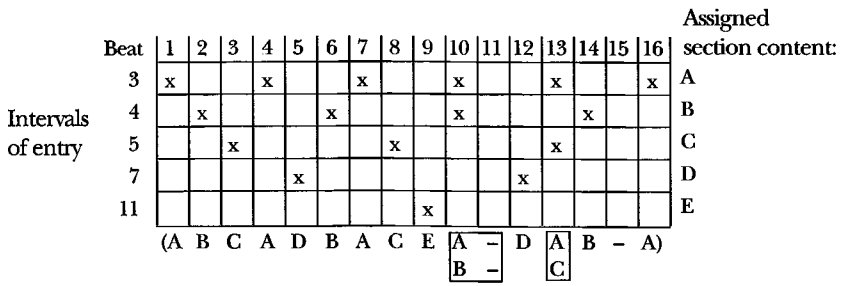


Figure 8: Cyclic interchange of textures.



Using the first twelve beats of the graph, the gross form of our composition (a strange kind of rondo!) can be outlined as follows:

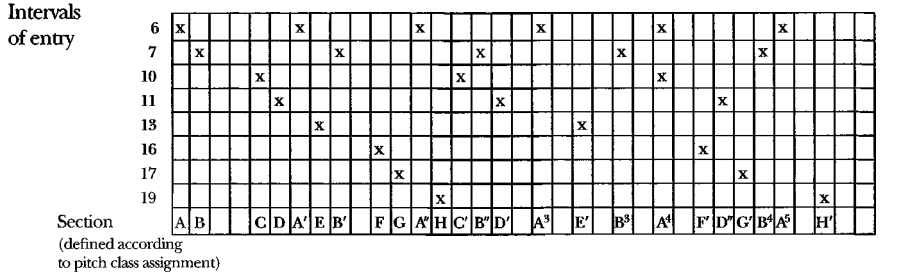
section	1	2	3	4	5	6	7	8	9	10	11	12
graph page	1	1	1	2	1	2	3	2	1	4		2
										3		
content	A	B	C	A′	D	B′	A″	C′	E	A		D′
										B		

NB: A = 3 duration units; B = 4; C = 5; D = 7.

If such divisions, shown above as A, B, C, . . . are expressed as discrete harmonic entities, one can, as in traditional chaconne procedure, compose a melodically and rhythmically "free" variation form. I used such an approach in composing *On October Ground,* a concert piece for chamber orchestra. In the *Nocturne* from *Piano Music,* vol. 2, pitches for the isochronisms were reassigned for each phrase, in a sequence consistent with the first 33 units of the work's isochronal matrix. The succession and hierarchy of the *Nocturne*'s harmonic regions that were produced in this way are indicated in fig. 9, below. A more complicated layering procedure was used in composing *Corrente,* for oboe, clarinet, and bassoon. Aspects of the design of this single-movement work are diagrammed in fig. 10.

What I am describing as isochronal procedure may seem an unnecessarily mechanical and artificial approach to music composition, and I must admit that my addiction to working this way has given me ample doses of relevant doubt and anxiety. I was encouraged to discover what appeared to be similarly plotted cyclic changes in speed and timbre in an exhibit of Elliott Carter's graphs and sketches. Additional encouragement was provided through study of Conlon Nancarrow's player piano music. I also found sympathetic resonances in areas outside of music, such as Balinese calendric systems, the world of the Gyres argued in Yeats's *A Vision* (1937), the criticism of Rollo May, and, of course, the *Wake.*[3]

Figure 9: *Nocturne:* cycled harmonic regions.

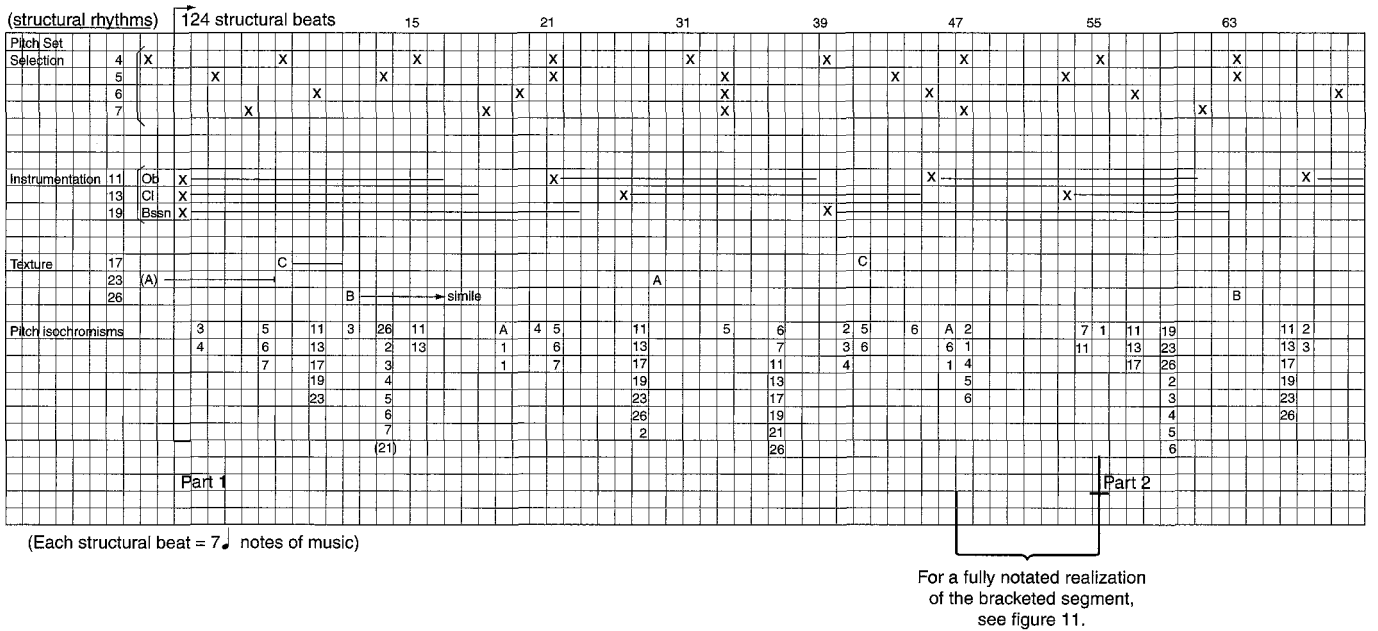


In the *Studies for Player Piano,* Nancarrow's manner of composing with multiple tempos in fixed proportions appears directly related to my use of isochronal structuring.[4] His reliance on additive compilations and on reciprocal tempo relationships (the tempo proportions 2:3:5:8:14 are found in the first study), his exploitation of interactive gestures, of synchrony between lines, of rhythmic resultants, and so on, are also referable. On the other hand, his polyphony and textures are dense, and are concentrated to a much greater degree than mine, and in the later studies it is not at all unusual to encounter non-additive tempo ratios (what Nancarrow calls "irrational proportions") such as quarter note = MM 280 (2×140) and quarter note = MM $\sqrt{2 \times 140}$. Non-additive isochronal compilations such as those existing in my *Quintet 1977* are exceptional in my music.[5] Another distinction, and an obvious one, is that composite pitch succession in the *Studies for Player Piano* is produced, as far as I can hear, by the combination of independent lines, of autonomous sounding melodies and, sometimes, ostinatos in different speeds (tempos). In composing with isochronisms, at least in the initial stage and prior to allowing foreground elaboration, composite pitch succession is strictly the result of evenly spaced pitch-class repetition.

In certain situations, a "sensation" of what I hear as isochronal texture *can* result from combined, independent ostinatos. Such is the case in the first of Stravinsky's *Three Pieces,* for string quartet. I have always been fascinated by this wonderful piece, and also mystified as to why there don't seem to be other pieces by Stravinsky comprising such a systematic use of isorhythmic procedure.[6] *Les Noces* and *Persephone* are likely candidates but, apparently, after the completion of the first quartet movement IS ceased to rely on simultaneous or rigidly maintained cycles of different lengths to generate musical form (see Kramer 1988: 291–92).

None of the foregoing figs. exemplifies passages of fully notated foreground elaborations and "guided choice" in my music. Two typical instances are the contrasted passages included below—as fig. 11, taken from

Figure 10: Isochronal layering in *Corrente.*



the conclusion of the first part of *Corrente,* and as fig. 13, taken from the conclusion of *Celebration,* for chorus and orchestra.

In fig. 11, a graph reduction of the isochronal pitch entries accompanies a reproduction of the full score, mm. 94–97. The same isochronal units

Figure 11: Contrapuntal elaboration in *Corrente,* mm. 94–104.

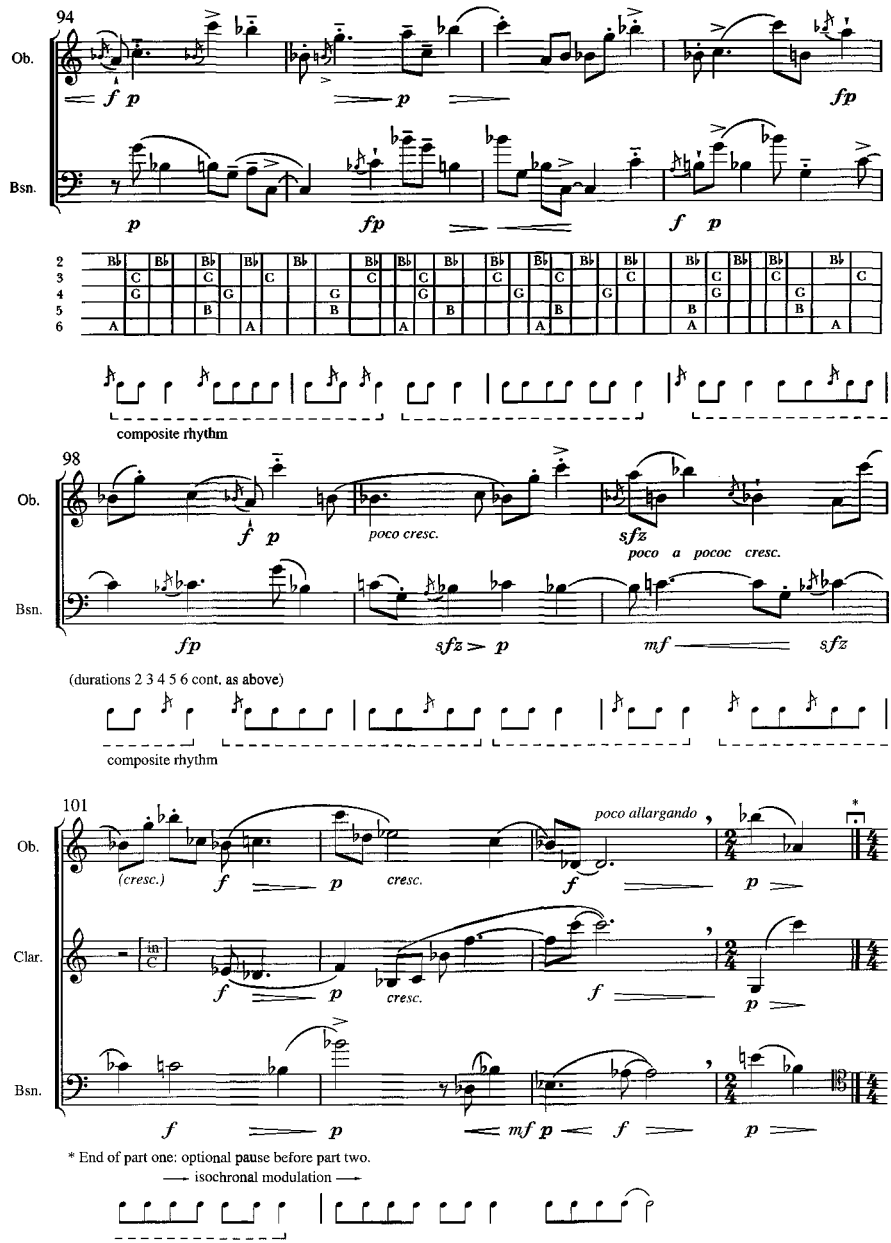
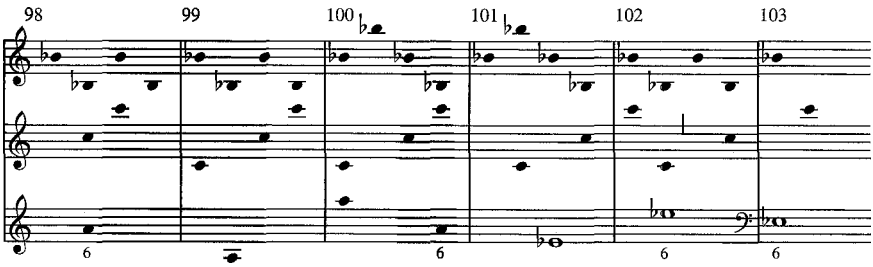


Figure 12: Register oscillation of isochronal pitch classes, *Corrente,* mm. 98–103.



(2:3:4:5:6) also govern pitch entries in the example's remaining measures. The succession of pitch entries in all the instruments together (composite rhythm) is also shown in the reduction as a demonstration of varied pattern repetition in an isochronal structure. In this instance, the pitch isoschronisms produce two varied repetitions (cf. number and location of grace notes) and two transformations of the initial six-beat pattern (♫ ♩ ♬♬ ♫ ♩).

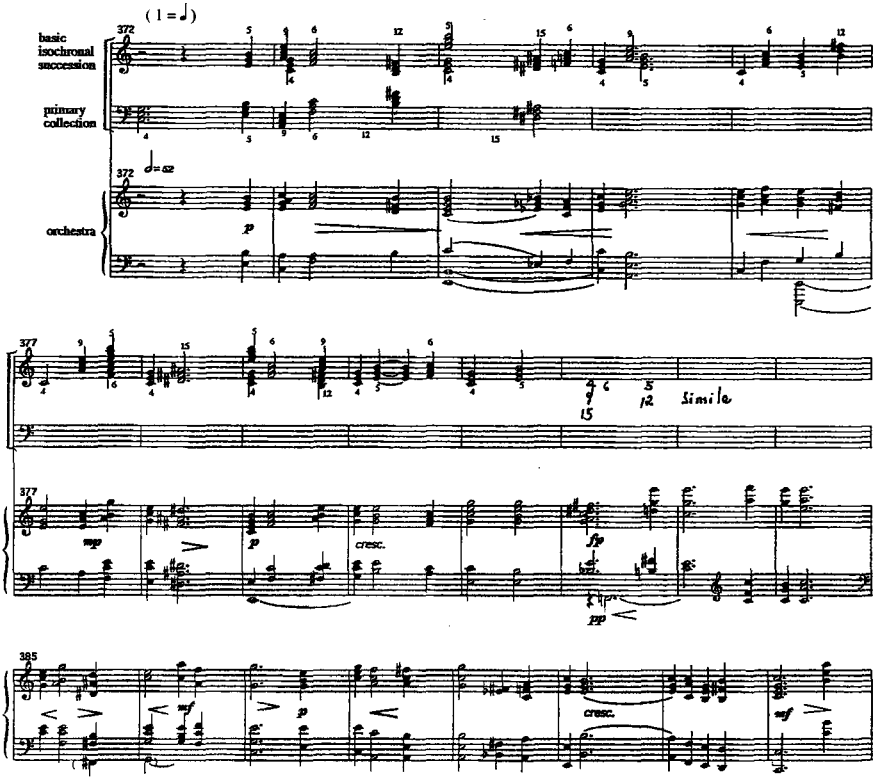
Further comparison of the score with a portion of the isochronal layering graph, fig. 10, structural beats 49–55, illustrates three ways for guided choice and subjective manipulation to play a role in foreground realization of an automated form:

(1) Measure 94 is derived from an isochronal texture graph that requires the oboe to play two pitches simultaneously on the first eighth note of the measure. This mechanical impossibility is circumvented by scoring one of the pitches, in this case a B♭, as a grace note "embellishment" to the other, an A♮. Similar contextual decisions account for all of the grace note figures in this graph and throughout *Corrente.*

(2) A gradual change in the rhythmic flow and harmonic content of mm. 94–104 is effected by suppressing some isochronisms, such as the expected entry of G♮, second eighth note, mm. 100 and 102; the expected B♭ and C on beats 3 and 4, m. 103; and by the substitution of B in favor of F after the second beat, m. 101, and of A in favor of E♭ after the fourth beat, m. 100.

(3) Register placement of pitch classes in mm. 94–104 is specific to the passage and, though systematic, not "required" by the gross isochronal form. Figure 12 is designed to illustrate the systematic register oscillations of the B♭, the C, and the A in mm. 98–103, as well as the above-mentioned A/E♭ substitution in mm. 100–103. Examination of the full score will reveal, as well, systematic register oscillations of the B and the G.

Figure 13: Homophonic elaboration in *Celebration,* mm. 372–92.



A three-stage elaboration of five isochronally repeated trichords is shown in fig. 13. In the first stage, four different 037 trichords and two different 047 trichords are associated with six different duration units: 4, 5, 6, 9, 12, and 15. In this stage, condensed in fig. 13 as "primary collection," a C-major triad recurs at the beginning of every four quarter-note beats, an E-minor triad at the beginning of every five beats, and so forth. In the second stage, labeled in the fig. as "basic isochronal succession," simultaneous recurrences are revoiced as polychords (e.g., m. 373, beat 1). In the final stage, labeled "orchestra," the chords are revoiced with considerable freedom, and with doubling of selected chord members. As a result of such free elaboration of regularly and independently recurring triads, a linear polyphony of from four to six voices with a purposeful and, sometimes, surprising succession of harmonies is produced.

In these two passages, and many others readily found in my music, singularity is created from a plurality of self-imposed automata. Freedom of expression is gained not by abolishing necessity, but by alternately embracing and transcending it and, sometimes, by "rolling with the punches"—finding effective alternatives to a preconceived notion of how a passage will go.

Notes

1. Borges says somewhere: There is no chance; what we call chance is our ignorance of the complex machinery of causality.

2. I cite as examples works of mine, which are published by C. F. Peters, Trillenium Music, American Composers Edition (ACE), and the American Society of Composers Journal of Scores (see References, below), to suggest the adaptability of the principles to various genres and instrumental idioms.

3. As others have suggested, and apposite to Joyce's "years dreams return": Many sentences in *Finnegans Wake* embody cyclic recurrence of words and themes (e.g., "Teems of times and happy returns. The seim anew" [1939: 18]; "We drams our dreams tell Bappy returns. And Seim annews [277]; and "Themes have thimes and habit reburns. To flame in you [614]). Other instances are cited in Kain 1959.

4. Eight of the studies are included in Garland 1977.

5. Not surprisingly, the *Quintet* is very difficult to perform as "chamber music," and at its premiere it had to be conducted. Nancarrow's *Studies* are written for a single instrument—the player piano, over which he had almost total control.

6. Passages such as rehearsal 74 through 80, and 131 through 133 in *Persephone,* while invoking a sense of "controlled indeterminacy," consist of polyrhythmic ostinatos. The effect approaches that of *Three Pieces.*

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From New York to Vermont: Conversation with Steve Reich

By Rebecca Y. Kim

While at work on his current project, Three Tales, *Steve Reich discusses the techniques, influences, and decisions of some of his compositions, starting with* Music for 18 Musicians. *The interviews took place at his New York City apartment on October 12, 2000, and by telephone to his Vermont home on October 25, 2000.*

Music for 18 Musicians (1974–76)

What musical issues were you thinking about when composing Music for 18 Musicians?

Well, harmony and orchestration were very high on the list. Rather than starting with a melodic cell, which had been the starting point for *Piano Phase, Violin Phase, Drumming,* and basically all the pieces preceding *Music for 18* except for *Four Organs,* the way I composed *Music for 18* was by starting with a series of chords. The idea was to extend the middle register, *not* the bass—see Debussy, see flute melody in *The Afternoon of a Faun,* see same melody being repeated with different bass notes—so that bass becomes color and middle register becomes structure. In other words, key signature is structure and bass is color.

Works like *Six Pianos, Four Organs, Violin Phase,* and *Piano Phase* had been dealing primarily with multiples of instruments of the same timbre, and this was done not as an aesthetic choice but as an acoustical choice. It was necessary to have instruments of the same timbre playing against one another so that all the sub-patterns would emerge clearly. When you have six pianos, after a while you don't know who's playing what; all you know is that all this is happening, and you begin hearing all kinds of sub-patterns because everything blends together. If you were to play *Piano Phase* on harpsichord and piano, then this wouldn't happen. You could do it on two harpsichords and on two synthesizers of the same timbre, but you would just have to mate them.

With *Music for 18,* I began to think, "Well, there's an awful lot of music for dissimilar instruments; why don't I check it out." Therefore, *Music for 18 Musicians* was, in a sense, a riot of color compared to what came before it. *Music for Mallet Instruments, Voices and Organ* is the parent and is certainly lurking there in the background; that's where beautiful sound became a consideration, as well as where mixing timbres, and mixing very

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long-held tones with very short eighth notes started. But *Music for 18* takes the harmonic aspect of that piece and completely expands it.

You also added more color toward the end of your earlier work, Drumming, *however.*

There is a kind of continuity between *Drumming* Part IV, *Music for Mallet Instruments,* and *Music for 18,* but *Music for 18,* as a lot of people have noticed, is sort of at the cusp. While there is intense interest in harmonic variation, changing key, changing mode particularly, and in changing orchestration, there is also the xylophone being built up against the other xylophone and the high pianos paired with each. Hence, that old pairing is there, and of course it's still there today, but the idea of pairing instruments against one another to produce canonic sub-patterns is now part of rather than all of the piece; *Nagoya Marimbas* is an exception because it is basically doing an old piece more recently. *Music for 18 Musicians* was a step, if you like, backwards; backwards *into* the Western tradition, *into* harmonic variation, *into* orchestral color, and [*laughing*] in a sense I never stopped moving backwards *after* that. [*laughs*]

This step "backwards" into Western tradition seems to have been a big step forward for you stylistically.

It essentially was. There are artists in the visual arts who more or less do the same things their whole lives. A certain minimal artist, whom I won't name, made boxes—steel boxes, blue boxes, wood boxes—and that was his life. Then there are artists like Frank Stella; he made black and white grid paintings, dayglo color grids, then the grids became chicken wire, which got bent out of shape off the wall, and pretty soon he was doing sculptures. Therefore, when you ask, "What's the next Frank Stella show going to be?" you say, "Well, let's see what he does."

I turn out to be that kind of artist, not necessarily because that's a good thing, but because that's who I am. I got bored writing phase music. I couldn't write any phase music after 1971. I couldn't write *Music for 18 Musicians* or anything like that now. I just move on to the next thing that seems to need doing.

So, with Music for 18 *you moved on from what's been identified as your early "minimalist" style?*

Well, yes. There is an interview that was done with Michael Nyman shortly after the piece was completed. In it, he asked whether I was interested in doing minimal music, and I said, "*No,* I'm *not.*" I'm interested in doing what I think needs to be done. I was recently at Dartmouth as a Montgomery Fellow earlier in the spring, and an undergraduate in one of the classes had apparently just read my 1968 essay, "Music as a Gradual

Process." After I played a piece from last year, *Triple Quartet,* the student said to me, "Well, how is that a gradual process?" I said, "It's *not*! It's *not* a gradual process!"

I think people suffer from a misconception, not only about me, but also about music theory and its role to music practice. Walter Piston, for one, was quite clear about this. Whatever music theory you encounter, *certainly* including the rules of four-part harmony, is written *after* a style has gelled by ear, and by a good musical ear. Of course it is good for a student to learn the rules of four-part harmony, but with the understanding that they're *just* student exercises. Any music theory is *automatically* referring to something that has already happened in music, and if it is taken as a prescription, or—worse—as a manifesto, heaven help you. It's interesting that the music we treasure most preceded the theory. It's no accident that Schoenberg's Op. 11, his "Farben" from Op. 16 (one of my favorite pieces), or Webern's Op. 5 string quartet pieces, or the Op. 6 orchestral pieces all keep getting played. They're "difficult" and they're dark, but they're more successful, I believe, than those pieces that came, by and large, with the adoption of the system.

Yet you are constantly asked to explain minimalism because it's legitimately part of your early style, and others have since assumed this style.

The point is, if you went to Paris and dug up Debussy and said, "Excusez-moi, Monsieur . . . are you an impressionist?" he'd probably say, "Merde!" and go back to sleep. That is a legitimate concern of musicologists, music historians, and journalists, and it's a convenient way of referring to me, Riley, Glass, La Monte Young, maybe even John Adams, and now Arvo Pärt, Giya Kancheli, and Louis Andriessen; it's become the dominant style. But anybody who's interested in French Impressionism is interested in how *different* are Debussy and Ravel, and ditto for what's called minimalism, so it's hard to get excited about that kind of thing. Basically, those words are taken from painting and sculpture, and applied to musicians who lived at the same period as that painting and sculpture. There is some validity to the description; certainly if you look at *Piano Phase* or *Violin Phase* and you look at Sol LeWitt, you're going to see some similarities. That just means people who are alive at a certain period in time and have their antennas up and functioning are going to get similar messages, and they're going to react to those messages. Beyond that, it's all individual, and that's what's interesting.

There is a wonderful visual side to Music for 18 *in the way one performer transfers his or her music to another performer. Is this an important aspect of performing* Music for 18?

Well, a lot of that is just keeping the key players in the ensemble doing what it is they are doing. The title says it's music for eighteen musicians, and we [Steve Reich and Musicians] play it with eighteen, but no other ensemble plays it this way. Eighteen is the minimum number of musicians that can do the piece. We are a traveling ensemble, which means that one extra person is that much more money and so on and so forth. When Ensemble Modern does it, I think they do it with twenty-one. When we do it, I play marimba in three sections; Jim Preiss, who plays the vibraphone and does all the cueing, also comes over and plays high piano; and Jay Clayton, who sings, plays my piano part when I'm playing marimba. Other ensembles wouldn't even bother with that. We just get every drop of usefulness out of each musician. You can use up to twenty-two people, but the number of musicians will vary from ensemble to ensemble. When you see us doing it, we're just the original instruments. [*laughs*]

There's no conductor, you see, and that was a very conscious decision. The models I had in mind were West African drumming and Balinese gamelan. The conductorial responsibilities of eighteen people playing together and making changes together devolves onto members of the ensemble. Basically, what you have is chamber music, where everybody has to listen to each other, be aware of each other, and have eye contact with each other because there's a lot of internal cueing, most obviously by the vibraphone and the bass clarinet. This creates an atmosphere where you have to be in touch with each other or you can't play the piece. There is also a kind of communal aspect to that, which is something musicians genuinely enjoy.

My ensemble has been together for a long time. We know each other rather well and that just comes out. But I think that that mentality, which is in the ensemble, is communicated perhaps best in *Music for 18 Musicians.* People in the ensemble have to feel at ease humanly with each other in order to maintain that length of years of commitment. There is this kind of shared attitude in terms of what it's all about when we're playing; we don't talk about it, but we seem to share the same attitude.

Tehillim (1981)

How did you choose the four psalm verses that form Tehillim?

I had a rekindled interest in my own religious background in Judaism starting around 1974. By 1981, I really had a desire to bring it into my music in some way. I thought that the most obvious way was to set a text in the original Hebrew, and the most obvious text to set was the Psalms.

The Psalms are the most musical texts that we know we have in Judaism. They were written by King David, who was a well-known musician

of his time. We know they were sung by Levites. I am a Levite—some of us in Judaism know whether we are descendants of that Levitical family—and so I would have been a musician way back when. Therefore, setting the Psalms was a very natural thing to do, and the added bonus was this: as opposed to the Torah and the Book of Prophets, which have traditional melodies, the traditional melodies for singing the Psalms have been lost in all the Ashkenazic—that is, all the European-Jewish—traditions. They have been maintained among the Yemenite Jews, but I'm not a Yemenite and am not that familiar with their tradition of singing. I know *of* their tradition of singing and I've used some of it in *The Cave,* but I didn't grow up with it. Therefore, it was kind of a green light for me to compose with a capital *C,* without having to ignore or incorporate some kind of preexisting melody.

That was the basic idea for setting the Psalms. Now, which ones to set? There are 150 of them; very good question. I took the book of Psalms in Hebrew and English, put them on the piano, and started going through the whole book. My idea was to pick a text that I could say to anyone, Jew or non-Jew. In other words, it had to be a very universal text, and the ones I came up with were ones I felt like saying to anybody.

When going through the book of Psalms, were you at all drawn to particular textual features such as repetition of words like "yóm-le-yóm" or striking imagery?

No, the only requirement I had was that I could look someone in the eye, whoever they would be, and say this. That was my only criterion. Of course the text had to be something that just sort of got to me as well. I knew two of the selections from the Sabbath's prayers. The first, *The heavens declare the glory of God,* is part of what you say every Sabbath; and *Who's the man who desires life* is part of that same prayer—as a matter of fact, it follows the first prayer immediately. I was familiar with those, so I had an itch to set them anyway.

Is there an underlying structure to the whole work?

Not really. What is underlying the whole piece and what really makes it work is basically the use of groups of twos and threes in a totally free arrangement. This was done entirely by ear, depending on how my ear heard the syllables of the Hebrew. *Ha-sha-my-im meh-sa-peh-rím ka-vóhd Káil* became 1-2, 1-2-3, 1-2, 1-2-3, 1-2, 1-2-3, 1-2. I had never heard music like that in my head before. *Tehillim* was the discovery of that. I had certainly heard Stravinsky and particularly the Bulgarian rhythms that Bartók used, which are full of 5/8s and 7/8s, but my solution to the use of changing meters, in a kind of absolute non-stop form, began in *Tehillim.*

Tehillim groups very large measures, and some conductors [*laughs*] are not too happy about that. There was some discussion, and there is still

some thought in my mind, that it might be easier if there was no bar larger than 7/8. The arm movements of the conductor have to get very elaborate. I think they can reach up to six or seven arm movements, which is all that any human being can really fit into a subdivided measure. One *could* re-bar it, there's no question about that, but the reason it's barred the way that it is, is because that's the way the melodies go.

Groups of twos and threes, which are changing in all kinds of groupings throughout a piece, became a staple in many works I've done since. Once I did it in *Tehillim,* it became part of my vocabulary, and I began to use this in different ways too. In *Tehillim,* everybody is moving more or less homophonically, except in the canonic sections. It's used in a totally different context in the second and fourth movements of *The Desert Music,* where you have groups in the brass playing conflicting parts of twos and threes and interlocking together, a kind of gamelan in changing meters. This creates something in between a repeating pattern that is always varying and an accompanimental texture. Groups of twos and threes are also used in *Sextet* and *Triple Quartet.* I'm just using it now in *Bikini* and will undoubtedly use it in *Dolly* too.

Is there a thematic arrangement to Tehillim? *You start with Psalm 19, then move to Psalm 34, to Psalm 18, and finish with Psalm 150.*

The first part, *The heavens declare the glory of God,* is basically Abraham looking up at the sky and intuiting that there's got to be someone, some intelligence, some force behind all of this—it all works too perfectly. It's not just the sun, it's not just the moon, it's the whole universe. There seemed no other way to start.

The second part switches to human character: *Neh-tzór le-shon cháh mayráh, Keep your tongue from evil, va-ah-say-tóv, and do good, ba-káysh sha-lóm, seek peace, va-rad-fáy-hu, and pursue it.* It's very, very difficult not to speak what's called in Hebrew *le-shon chah-ráh,* the evil tongue. We're all guilty of it. It's not a good human character trait but it's widespread. Its instances have been detailed very carefully in Judaism because avoiding it as much as you humanly can is considered a very high principle. The second verse is about that and everything associated with it.

What happened with the third part is [*laughs*], I was in a situation where the first two movements were being done separately in Germany, at the South German Radio station in Stuttgart. Peter Eötvos, the conductor, and I were driving together, and he was basically asking me, "Are you going to continue in the same tempo?" I knew from the way he put it that he was saying, "Can't you give us a break?" [*laughs*] Respecting Eötvos, I decided to insert a break and actually stop the music after Parts I and II, and then go on in a slower tempo.

Now, as you know, I don't generally observe movements. I don't believe in movements. I believe that when the music stops, it stops. In any event, I came back and decided to set this other Psalm, the 18th Psalm, with that extremely interesting text [*reciting bits of the Hebrew and English*]: *Im-chah-síd, tit-chah-sáhd, If righteous, God treats them righteously, im-ga-vár ta-mím, ti-ta-máhm, if almost perfect, God treats them almost perfectly, im-na-vár, tit-bah-rár, if upright, God treats them uprightly, va-im-ee-káysh, but with the perverse, tit-pah-tál, God is subtle.* Musically, it's set in parallel. [*sings* im-chah-síd, tit-chah-sáhd *and* im-na-vár, tit-bah-rár *with parallel melodies*]

Actually, the model for that third part is a soprano and alto duet from the Fourth Cantata of Johann Sebastian Bach, *Christ lag in Todesbanden.* There's a back-and-forth exchange between the two voices, as there are in so many of the cantatas, and then a kind of resolution between them. That was the model for *Im-chah-síd, tit-chah-sáhd.* The four singers in *Tehillim* are divided into pairs and respond to each other. As a matter of fact, the doubling of the four voices with first the clarinets, then later with oboe and English horn, was also a steal from that same cantata. Bach, like many great composers before and after him, doubled the voices for support. It's an old trick, and it's one of the best in the book; it makes the singers confident because they know the pitch is there. If you treat those voices that way, and I do, and also amplify everything, boosting the oboe and English horn, then you get what my producer Judy Sherman calls the "voicestrument." So, when you hear the singers doubled by clarinets at the end of the first movement of *Tehillim,* then that immediately changes to being doubled by the oboe and the English horn at the beginning of the second movement, it's like another kind of singing. This is also learned from JSB.

The last part, of course, is the 150th Psalm. There's a coda right on *Hallelujah,* which is the text that's been set more than any other in the history of Western music, so that was kind of a challenge. I really did want to set it. It's a deliriously overjoyed statement and it refers to *tóf u-ma-chól,* drums and winds, which is precisely what I was using in the piece. It was too good to miss. As a matter of fact, now I'm remembering I finished that Hallelujah in the room I'm sitting in now, here in Vermont. I wrote a lot of the piece here, but particularly the ending. I knew I had it. [*laughs*]

An important technique you use in Tehillim *is canon, an outgrowth of your earlier phasing technique.*

Phasing is a word that I coined, which I'd just as soon trash because all it is, is a variation of canonic technique. It's *all* canons, they're nothing but canons, from the thirteenth century to now. What I use that word "phasing" for is simply to refer to a canon between a very short melodic

pattern, as opposed to an extended melody, and done very tight unto itself rhythmically, as you find in strettos. That's what it is and then I gave it a technical name. But forget about that technical name. It's *always* been canonic. *Piano Phase* is a variable canon at the unison. It's a unison canon with the rhythmic distance between the first voice and the second voice flexible. In *Tehillim,* instead of there being a melodic pattern, there are real full-blown melodies. *Then* everyone said, "Oh, those are canons." But, you know, canons are canons are canons. Sometimes the material is very, very short and that's what people hadn't done before; that's why it seemed to be different. The principle is exactly the same as *Sumer is icumen in* and *Row, Row, Row Your Boat,* but it's just that instead of having a melody you have a short pattern.

There are some long stretches of canon in the first and fourth parts of Tehillim, *and you punctuate the long stretches with harmonic changes. Would you say you were particularly more sensitive to the vertical aspect in this work than in previous works?*

Well, I mean I had to deal with a piece that was going to be harmonically unified over a relatively long period of time, so of course I was, but I don't think I mapped it out the way I did for *Music for 18,* from beginning to end like a cycle. I just worked with the melodic material and then tried to figure out ways to harmonize it. *Ain-óh-mer va-áin de-vah-rím, Without speech and without words, beh-lí nish-máh ko-láhm, nevertheless their voice is heard,* from the first movement, is a particularly good example of that. I felt that here I wanted to be able to *mirror* the text in the music. What happens is that the whole melody is reduced to just four notes: G, A, D, and E. Those four notes by themselves are very harmonically ambiguous, and consequently you find that there are changes of key. So, *Without speech and without words, nevertheless their voice is heard* was something that was open to interpretation, looking at the world around you, and this is mirrored in this particular section by simply creating a very ambiguous scale that is capable of harmonic reinterpretation.

Then there is the Hallelujah in D major. What's interesting about the ending of *Tehillim* is that it ends on the dominant, and it's a dominant eleventh chord. Like *Four Organs,* the tonic is on top and the dominant on bottom, which gives you that sense of the music still going on even when it ends.

What makes a good ending, in your view? Tehillim *sustains a remarkably tireless energy so that it's hard to anticipate its end.*

Oh, it's a complete setup. I don't think there's a better ending that any human being could ever write in that piece. A good ending, for me, tries

to avoid a V–I ending at all costs. I was guilty of it in the fourth section of the *Four Sections,* but alas, I couldn't think of anything better to do. Outside of that, there's no formula for anything. My early pieces are processes in that when they're done, they're done. But again, those are satisfactory endings because the whole piece is about a process. Therefore, when the canonic process returns to unison, as in *Piano Phase,* it's a perfect way to end. *Tehillim* is very traditional Western music, key-wise, and in most other respects. Hallelujah in D major certainly seems like a good place to end.

You say that setting Psalm 150 was a challenge, not because you had to deal with Judaic tradition but with Western musical tradition. Did you encounter other difficulties while writing Tehillim?

I think I encountered most of the difficulties even before I started writing *Tehillim*—figuring out what I was going to do and why. When I had first put the Psalm texts in front of me, after I figured out which ones they were going to be, it was as if they were talking to me: "Well, Handel gave me this, Bach gave me that, Britten gave me this, Stravinsky gave me that —what have you got in mind?" It was like I was being picked up by the scruff of the neck and being asked, "Where's my melody?" Once it got going, though, it was a complete revelation.

Tehillim is one of those pieces where I did something entirely different in a big way. When I was first working on it my wife said to me, "You're actually singing! [*laughs*] You're actually singing melodies!" It was the first time I wrote melodies. *Tehillim* is about melody. It was exciting to do something absolutely basic after having worked for about fifteen years on melodic patterns. I had been writing melodies in a very short form: very good melodic module in *Piano Phase,* not quite as good in *Violin Phase,* and very good rhythmic module that lent itself to very good melodic configurations in *Drumming.* All those little modules—they have to be gold or else you're dead. It isn't just any old thing that is put through a process and then comes out. Any four-part harmony exercise is going to equal the Bach chorales? Forget it. Melody is always, in some sense, the first element. There are a lot of melodic patterns going on in *Music for 18 Musicians.* They're short, but they become extended and work melodically. *Tehillim* is melody in a *recognizable* way in Western traditional terms, and that was the break. That really drove the piece and it ended up being a very inspired piece. It probably came out of the longer flute melodies in *Octet* in 1979.

Tehillim took a while to write because it was long, and writing a slow movement was also new for me. In addition, I hadn't set a text to music since I was a student, and had never done it successfully as a student. So, finally I was setting a text that I was excited about, and it was really working.

What the singers were doing in works like *Drumming* and *Music for 18* was doubling an instrument and using vocalise to become part of the musical ensemble; they weren't singing words. *Tehillim* is the first piece where I said, "Okay, singers are going to sing words and the instruments are going to accompany them." Singers love singing the piece and that's extremely gratifying. It's certainly one of the best pieces I have ever done.

Why had you avoided using melody?

Basically, I had been interested in getting rid of melody and accompaniment, the whole homophonic model, and saying, "I am dealing entirely in a contrapuntal situation of short, repeating patterns." Everything comes out of that *web* of melodic motives—not really melodies but melodic patterns. That worked very, very well. *Tehillim* was saying, "Let's see what happens if you just apply that kind of thing to extended melodies," and of course the canons in *Tehillim* are a drawn-out form of what I had been doing earlier, but now they were really recognizable as canons because the subject matter was extended melodic material.

Different Trains (1988)

How did Different Trains *originate?*

Different Trains started out in a very funny way. It started out with Beryl Korot (the video artist and my wife), saying to me after I had been commissioned by Betty Freeman to do a piece for Kronos Quartet, "Well, you're so interested in the sampler, why don't you use one? You'll love it and they'll love it." I was given a number of sampling keyboards from the Casio company—this was back in the '80s—and I was very excited about the possibility of using samples in my music. You see, after I finished with the tape pieces, I basically had no interest in technology: I was *not* interested in synthesis; I was *not* interested in something sounding *like* a violin. The only time I ever use synthesizers now is for convenience. In *The Desert Music,* because the brass notes are so long and the performers need to breathe, I have the synthesizers doubling them so that you don't hear the holes; in *Sextet,* it's because I would have had to tour with four woodwinds to get the same effect. But, back then, samplers presented the possibility of bringing nonmusical material into musical contexts by playing or programming it. *Different Trains* was the first very inspired result of that.

So, I knew I would do a piece for sampled voices and Kronos Quartet, but I didn't know whose voices they were going to be. At first, I thought it was going to be the voice of Béla Bartók, and I went and got a recording that he made at WNYC years ago during the time he was at Columbia University. He was also at Boosey & Hawkes, but there turned out to be a

problem with rights, at which point I just said to myself, "Do I want Béla Bartók looking up over my shoulder while I try to write a piece for string quartet? Ugh, it's hard enough as it is!" Then I thought about using the voice of Ludwig Wittgenstein because I had studied his philosophy and imagined that he must have had a very interesting voice. But after corresponding with people in the United States and England, nobody knew whether Wittgenstein recorded anything. He would have had to do it with a wire recorder and it turned out that he didn't.

Then I began thinking there must be something that's closer to home. Somehow, these train trips that I had taken as a child from New York to Los Angeles just popped into my head. I began asking myself, "When did I do this?" and "What was going on at that time?" Well, that was 1939, 1940, 1941, and what was going on at the time, was, little Jewish boys like me were being put on a train from Rotterdam or Brussels or Budapest to Poland, and they never came back.

That was the genesis of the idea, and once I had that, I moved pretty quickly. I spoke to the woman who had taken care of me as a child, who at the time was living in Queens. I located a black Pullman porter in Washington, D.C., who had been on the very same lines that I had ridden on as a child. Then I went up to Yale, where they have an archive of Holocaust survivors on tape. I spent a couple of days up there just riveted. I copied what I felt were not only riveting stories but stories told in a musical tone of voice. Then I came back and went through all this material, stopping every time I got to something that seemed emblematic—"Nineteen forty-one"—emblematic in what it said, and emblematic in the music of how it was said. I put these on a floppy disk and wrote them down as best I could in musical notation. After all this, I formulated some basic rules of thumb: every time a woman speaks the viola doubles her; every time a man speaks the cello doubles him; the train whistles are always doubled by the fiddles. The whole thing just took off after that.

This is one of the first works in which you invite the listener into your personal story. As a listener, it is intensely moving to think that of the many things evoked in this work, one of them is you remembering yourself as a three- or four-year-old. Were you apprehensive about putting something so personal in your music?

You have to put something personal in every piece you ever do. You mean in terms of the verbal material? Well, it isn't really there. All that's really there is what I tell you in the program notes, if you have the program notes. One of the nicest reactions to *Different Trains* was by Pat Metheny, during the time that I was working with him on *Electric Counterpoint.* He didn't have any program notes, so he didn't know what the piece was about. After he heard *Different Trains* he said to me [*speaking quietly*],

"Man, that was an unbelievable piece." I said, "Could you hear the words?" He said, "I heard enough to get the sense of it." He didn't understand everything that was said, and he had no idea of my background, but he got it. I gave him a big hug and said that was the best thing I had heard because it meant that the piece works without program notes. If you want to go further with it, then you do, even if you don't get all the words. Sometimes you really don't get all the words, especially in the second movement where the recordings were made on horrible cassette recorders in the '70s—we doctored them as best we could.

Nobody receives awards for technical expertise in music. We know that Bach was perhaps the best technician that ever lived, but he himself said *das Affekt,* and if Bach said *das Affekt,* I can only say, *It don't mean a thing if it ain't got that swing* or that *je ne sais quoi.* That's what matters, and *Different Trains,* thank G-d, has that. There are some things going on technically but that's not why we're talking.

Did you have reservations about setting your personal experiences against the historical backdrop of the Holocaust?

To consider using the Holocaust as subject material in any way, shape, or form is so inherently . . . not just difficult, but probably a mistake. What makes this piece work, or even imaginable, is that it contains the voices of these people recounting what happened *to them,* and I am *simply* transcribing their speech melody and going from that musical starting point. The documentary nature of the piece is *essential* to what it is.

Proverb (1995)

How did you end up uniting Pérotin and Wittgenstein in Proverb?

What happened is that Paul Hillier and I were in correspondence for a number of years, and to make a long story short, he ended up conducting *The Cave.* Sometimes the singers would rehearse parts of the work by themselves, and Paul just loved the little canons. He told me that I should do a vocal piece, and because he knew that I was interested in biblical material, he suggested I set Song of Songs. After considering it, I decided it was just too much, a mammoth undertaking. I wanted something really short and aphoristic. I started looking through the book of Proverbs, but I couldn't find *exactly* what I wanted. Then I got a book of world proverbs, but found so many different things that I didn't know what to do with them. At the time, I happened to be rereading *Culture and Value,* a collection of Wittgenstein's writings, and when I came upon one sentence—"How small a thought it takes to fill a whole life!"—I thought to myself [*slapping his hands together*], "That's it!" Now, it's not really a proverb, but

it's proverbial in nature. The ideal way to convey the meaning of that short text was to make it an augmentation canon so that it would grow longer and longer and fill up all the available space. *Proverb* is an homage to Pérotin and it's the first time where I really do a piece about another composer. I dealt with Pérotin openly because I knew I was writing for Paul Hillier and his group, Theatre of Voices. It was later premiered at the Early Music Festival in Utrecht in 1995. *Proverb* calls for the same kind of voices I had worked with in my previous music.

Pérotin, as you know, has been a great source of inspiration and instruction to me over the years. This time I actually had *Viderunt omnes* at the piano, and wrote everything out on one staff—there is a very nice Kalmus edition that Ethel Thurston did several years ago. What was exciting, of course, was first looking at the Pérotin very closely and seeing exactly what I would steal and what I wouldn't steal. What I did steal were the tenors going melismatically on a given syllable; what I didn't steal was the crossing of the voices. Also, instead of having the drones sung by other tenors, they are sung by women's voices while the men sing the melismatic parts—of course Pérotin only worked with men's voices because women's voices weren't used until much later in history.

Interestingly, the male and female parts don't interact until towards the end.

Right. Basically, you have the women and then you have the men, and then you have women and men. In the last section, which is the long, hugely augmented canon, you then have—you're quite right—the women and the men singing more-or-less simultaneously. At least the women are holding their long tones and the men are decorating them as they're all going on at the same time. It's again one of those pieces that use groups of twos and threes. In that sense *Proverb* is similar to *Tehillim,* in that you have two vibraphones creating the interlocking twos and threes in the way the drummers were, in *Tehillim.*

Augmentation is kind of a subtext in *a lot* of my music. The first use of it was in *Four Organs,* which was also done under the influence of Pérotin. In Pérotin, and in Léonin too for that matter, you basically have notes of the chant that are stretched out to enormous proportions. *Four Organs* began as a sentence on paper: "Short chord gets long." What *Proverb* is really about is augmentation canon, which is something that Pérotin did not do as such. In *Proverb,* you start with melodic material and canon, and when the canons augment to enormous proportions, you get almost shifting clouds of harmony because each tone is held out so long that it just feels like suspensions and chords that don't resolve. Augmentation was something I've had in mind for a long time. It's present in *Music for Mallet Instruments, Voices and Organ* (as you can hear quite clearly), and to a lesser

extent in *Music for 18 Musicians.* After I finally wrote an augmentation canon in *Proverb,* I immediately used that technique again in *Hindenburg* and *Bikini,* and I'll probably use it in *Dolly* as well.

So, in terms of where I come from in the Western music tradition, certainly from Bartók and Stravinsky in this century, but there's a *heavy* dose of medieval techniques. The uses of canon and augmentation are at the top of that list.

Triple Quartet (1999)

Bartók is, as you say, someone you feel close to. In Triple Quartet, *I hear a lot of his influence, particularly Bartók's dance finales from works like* Contrasts *and the Fourth Quartet.*

The Fourth Quartet! The third movement of my quartet begins as a result of the fifth movement of the Fourth Quartet! You know, the cellos doing all that offbeat stuff. Now, Bartók can get more going in one string quartet than I can with three, but nevertheless, I was saying to myself when I wrote this, "Wouldn't it be great to keep that energy going?" The fifth movement of the Fourth Quartet is definitely the starting point for *Triple Quartet.*

Was Bartók the only composer who influenced Triple Quartet?

Well, I probably had a little influence from Michael Gordon, too, his *Yo Shakespeare,* which has conflicting rhythms going against each other. In *Triple Quartet,* the second and third quartets are often playing in dotted quarters and the first quartet in half notes so that you get conflicting rhythms in the accompaniment, sort of forming their own polyrhythmic music. Also, while I was writing the piece, my friend Betty Freeman sent me a new two-CD album of the Kronos Quartet playing the complete Schnittke quartets. I hadn't heard a note of his music, and while listening to his quartets I certainly didn't feel close to most of what he was doing—with the exception of the incredibly beautiful *Mesto* in his Second Quartet. The effect of listening to his quartets while I was beginning work on *Triple Quartet* was quite interesting. It was as if he was pushing me to thicken the plot and particularly the harmonic language. In fact, this was exactly what happened—so I have to thank Betty and Schnittke for that. Sadly, Schnittke died about a month after I began listening to his quartets.

There is a very specific harmonic progression that you use throughout Triple Quartet. *Is it significant that E minor, G minor, B♭ minor, and C♯ minor is an interval cycle that forms a symmetrical chord?*

Well, yes, but I had no great desire to stress the diminished seventh chord. I wanted to arrange my key centers in a way whereby I could modu-

late in an interesting way. Harmonically, I wanted minor dominants because of the ambiguities of raised seventh, lowered seventh, the augmented second between the lowered seventh and the tonic, and so on. The idea was to keep *each* section of the piece in that same world—yet differently, and *not* to outline the diminished seventh as such. What I'm doing is keeping to minor keys and staying with dominants throughout, so that the whole piece is like shifting dominant pedals. When you go up that way in minor thirds to outline this diminished chord, you don't really have a sense of harmonic movement. You do, however, get a feeling of freshening up the harmonic atmosphere because you are changing key. So, it's a way of getting variety yet keeping the overall sound remarkably homogeneous. What's also very nice about the harmonic progression is that it's very easy to modulate from C♯ minor to E minor, from E minor to G minor, and so on. Those are, for me anyway, very intuitive modulations.

What happens in *Triple Quartet* is that first we go through each of the four different keys in four different meters: 4/4, 12/8, 3/2, 3/4. Then we go through the same cycle of keys again, but in changing meters *within* each harmonic section, in 7/8, 5/8, 6/8, 2/4—that kind of metric shift. When that's finished, there's a slow movement, which is back in E minor, and then the last movement starts in G minor, and finally ends up again in E minor.

Is it correct that Triple Quartet *is a long-planned extension of your* Counterpoint *series?*

Not really. It does exist in a version for two prerecorded quartets, plus one live one. On the other hand, it's going to be done by a live orchestral string section in March 2001 and it's already been done with 12 players at Juilliard. I suspect that in the long run it will probably be done more live than electronically.

Before I did *Different Trains,* I had thought that I would write a piece for multiple quartets for Kronos Quartet. I knew I wasn't going to write for one string quartet because I'm not interested in one string quartet. For me, it doesn't have enough multiples of the same instrument. Where's the second viola and second cello? I was going to write this piece for three quartets, but then the sampling idea came along. The multiple quartets are in *Different Trains,* but they're not the main dish; the main dish is the sampled voices, and all the material is derived from them. By the time I was going to go back and write another piece for Kronos, this earlier idea came back to me, and I thought, "Why not do this?" Also, it was very important for me at that time—since it was basically written as a break between *Hindenburg* and *Bikini*—to get away from sampling, to get away from electronics, and just deal with instruments. *Triple Quartet* is a completely *musical* piece, and

perhaps that was partly why the energy is so strong and so good. It was a much-needed pit stop. I think it's a great piece. I'm very, *very* pleased with it. It's been recorded and will be released in the fall of 2001.

Three Tales (1997–)

Describe your recent collaboration with video artist Beryl Korot, Three Tales.

This afternoon I was just working out the coda for *Bikini,* and beginning the interviews for *Dolly.* Well, *Three Tales* is "Hindenburg," "Bikini," and "Dolly"—early-, middle-, and late-twentieth-century events in technology, respectively. There are three tenors, two sopranos, and only ten players: string quartet, four percussionists, and two pianos.

Hindenburg is in four discrete scenes. It opens with the crash, goes back to the construction, then to a sort of imaginary final flight over the Atlantic, which is witnessed by an old lady, Freye von Moltke. She is the widow of James von Moltke, who was hanged for his part in the plot to assassinate Hitler. She lives right outside of Dartmouth, near me in Vermont. People had said that I ought to interview her, and when we met she said [*in a hushed voice*], "A very impressive thing to see! Have you seen pictures?" [*laughs*] She was great. Then the crash happens again at the end and is shot on the ground. The vocal music here is mainly the three tenors, technology being primarily a male enterprise until recently.

Bikini takes a totally different approach, with the 1946 atom bomb tests in the Marshall Islands in the South Pacific. Basically, the formal arrangement is the B-29 in the air; on the island; the people of Bikini, all 126 of them; and on the American boats—the Able Test was a navy exercise and all of the command and the control room instruments are there. We do each shot for a couple of minutes, then through each for a second time, and then again for a third time. It's more like a meditation on the whole event, rather than just going through scene 1, scene 2, scene 3, etc., so that as you're moving chronologically and historically, you're also changing the formal approach to how you're going to present the material. Then there's a coda at the end, where the countdown finally gets to zero. You don't hear the bomb, you don't see the bomb; what you hear is this very sad material and the guy who's doing the countdown saying what finally becomes, "Zzzz-eeeeee-rrrrrrr-oooooooo." There's a lot of stretching. Have you read that early book of mine, *Writings about Music?*

Yes, of course.

I wrote something in there called "Slow Motion Sound."[1] Well, now you can do slow motion sound on your desktop. Slow motion sound

occurs throughout *Bikini* with the word "zero" so that the word gets elongated considerably. I also use the technique in *Hindenburg* with the voice of the famous announcer, Herb Morrison, describing the crash. Slow motion sound can be done several ways, and I'm working on stretching things in a better way. That was what that phone call earlier was about, and . . . well, I can't give away all the trade secrets. [*laughs*]

Dolly of course hasn't happened yet, but the plan for *Dolly* is to go back to interviews. Everything will be in state-of-the-art digital color, whereas everything that preceded it in the previous two tales was archival footage from the 1930s, the late 1940s to the early 1950s, and some from the present. Beryl and I will go out and interview biologists, people in artificial intelligence, robotics, nanotechnology, and religious scientists—of course most scientists *not* being religious. The individual tales get longer and longer, and *Dolly* will be the longest tale.

The Cave dealt with interview material that was presented very straightforwardly, in keeping with the religious matter that was given there. *Dolly* will use a lot of slowing down what people say, in sync with the video. Along with slow motion sound there will also be stop-action to go with the image; as somebody is talking, one vowel becomes a held tone in mid-sentence: *Soooooouuuuuuuuunnd.* Then somebody else picks up the talking and both speakers go to a certain point. I start building up chords from people who are interviewed, and freeze the actual vowel at that particular time so that now their vowels can be extended by "secret process." [*laughs*] Most importantly, this will be very effective and very appropriate for the material being discussed.

What is the vocal style that you choose for Three Tales?

The vocal style that I choose, as one of my singers puts it, is basically a style anywhere from Joni Mitchell to Joan Baez to Ella Fitzgerald to Alfred Deller. It's basically the kind of nonvibrato, small voice that you find in early music, like Anonymous 4 or Alfred Deller. Therefore, these singers are not opera singers, but singers involved in the pop world or in the early music world, who share a kind of light voice, who are generally aware of how to use microphones, who are very good part singers, and who are very good rhythmically, so they're perfect for what I'm doing. To me, they feel like the voices of our time more than the operatic *bel canto* voice, which is a period style and could be used effectively *because* it is a period style. But to use bel canto without taking that into account leads to something where I'm trying to stifle a laugh because it seems so ridiculous. If you're going to write an opera about, let's say, President Eisenhower, and you have his character come out and sing like he just stepped out of *The Marriage of Figaro,* people might think that's really a kind of joke.

Have you referred back to The Desert Music *at all while working on* Bikini, *since in the former work you chose a text by William Carlos Williams that captured his sentiments regarding the dropping of nuclear bombs?*

Nuclear war has been something that's been over our heads since the Cold War. Anybody could walk in with a satchel full of biological, chemical, or radioactive material, and, given the news today, who knows? *It's Gonna Rain* was done two years after the Cuban Missile Crisis when it was *really* a possibility that we were all going to go up in radioactive smoke. Kennedy and Khrushchev were facing off and the Russians were going to put missiles in Cuba. Every composer is also a human being and subject to the realities that are going on around him or her. I was interested in Williams, a doctor and a poet who wrote: "Man has survived hitherto because he was too ignorant to know how to realize his wishes. Now that he can realize them, he must either change them or perish." He really hits on something that goes back to Faust regarding knowledge. Sometimes very impressive scientific people say there are things that we shouldn't do. We've never said that before, but now we have to think about that because they are so dangerous and we also have to account for the possibility of human error, which is *always* with us. *Dolly,* where the stakes are so high that we just shouldn't get involved, will be dealing with that. This is something that has never seriously been on the table before. So yes, sure, they are connected thoughts.

Is the documentary material in Three Tales *treated differently than in* Different Trains *or* The Cave?

Oh yes, totally. *Different Trains* is an homage to the living and the dead. As they spoke, so I wrote. I didn't feel it was morally right and therefore aesthetically right to change it. It was the same with *The Cave.* The people documented in *The Cave* are discussing religious matters that I and others take quite seriously, and I just felt again that I was the faithful scribe. I could always reject something and try to find another saying, which I did very often, but I had to figure out how to deal with the changing tempos and so on.

The basic assumption with *Three Tales* is to make the samples now fit the music—*prima la musica.* Let's get the musicians to build up a head of steam and have some momentum, as I have in all my other music, and let the samples kind of rain down on them. The material of *Three Tales* was perfect for this because it was not biblical and it was not religious. It was just interesting documentary material from a certain period of time, and I could do whatever I wanted with it. That basic assumption has been very good, I believe, because it's a more musically driven work. Also, I got tired

of doing the other thing. I don't like constantly changing key and constantly changing tempo. I had done that up to now.

Does this approach leave you more room to make some musical commentary on the speech material?

Well, you're always presenting commentary on the speech material. There's not much speech material in *Hindenburg,* but, for example, I stretch out Herb Morrison's words: "It flaaaaaashhed [*dropping in pitch*] and it's crashing!" What this does as you're watching this dirigible come down in slow motion is sort of give you a feeling in the pit of your stomach. What he's saying is intensified because you hear all this irrational stuff going on against the tenors, who are singing three-part canon on the words of the German ambassador to *The New York Times* when asked about the crash, "It could not have been a technical matter," which of course it was. The tenors are singing this first as a short melody and then as an elongated melody. As they're singing these long tones, which are rather similar to those in *Proverb,* Herb Morrison's line comes out with these sort of sliding smudges on top of it. I think it's quite appropriate for what's going on. I'm allowing myself great liberties to use the voices to suit what I perceive to be the subject matter at hand.

What motivated you to broach these three ambitious topics?

Beryl and I were asked to do a piece about the twentieth century. I went to subject matter that really got my juices flowing, where I knew I could stay involved for 3 or 4 . . . or 5 years! I started *Three Tales* in 1997 after it was commissioned by the Bonn State Opera, and in the middle of it I did *Triple Quartet* and a piece for Anonymous 4 called *Know What Is Above You,* and I also had a lot of other activity in my life. It's about four years of work and projected for completion in 2002.

It seems that current events really get your juices flowing.

When we did *The Cave,* which is about Abraham and his family, we started it in 1989. Shortly thereafter came the Gulf War and everybody said, "Oh my gosh!" I remember that on the front page of *The New York Times* there was a shot of a missile base near Basra and it said, "Missiles Near the Site of Abraham's Birthplace." This was captured in *The New York Times* because Abraham was born in Ur, which is basically in Iraq, near Basra. It was tempting to get involved, but we didn't. The story of Abraham and his family is still very much with us today because what's going on in the Middle East is *primarily* a religious war, and it's taken on various political forms over the years. But the answer to your question is, no, we didn't get involved in the Gulf War, and no, we didn't get involved with

the peace process, because we had a classical story to maintain and basically *everything* was in that story and to diverge from it was just a foolish temptation. Everything was implied within this classical, religious story in world civilization, because it is common to Jews, Christians, and Muslims, and a lot of other people have become aware of that because of it. When we showed it in Japan, people seemed to be interested in that. The stories we're dealing with here in *Three Tales* are not at all stories like that.

Why "tales"? Any reason behind that?

Well, the word "tale," as opposed to "story," gives you a feeling of a little apprehension, and they are in a sense cautionary tales. Flaubert used "tales" as did Gertrude Stein. The title, "Three Tales," is sort of abstract, too. It's a nice signpost that makes you wonder, "Well, what are they? What are the events?"

"Tale" suggests some kind of moral lesson. Are there lessons in your work?

Any good art that is about something has many, many lessons embedded within it, many of which are unknown to the artist making the piece. I don't think that the thing here will be, "Well, you better not do this, and you better do that." Well, forget that. We didn't do that in *The Cave* and we're not going to do that here. We will certainly bring up some very real things that are going on around us, mostly by the revelations of characters that happen through watching people on the screen.

What are some modifications that you've made to Three Tales *since your initial conception and since* Hindenburg *toured by itself as a work-in-progress from 1997–99?*

When *Hindenburg* went out by itself, it was really kind of a mistake, but on the other hand, it was useful to us. We have now eliminated scene 2, "Mythic Stature," a long scene that was a sort of history of the man Paul von Hindenburg, from World War I up through the rise of Hitler. That was just a little too heavy-handed, I felt. Also, the second scene, what used to be the third scene, is now called "Nibelung Zeppelin," and it uses the leitmotif from *Das Rheingold* as its motive. I take a literal reworking of the Wagner. What you see are all the actual workmen, but cut out by Beryl in this incredible way so that they're climbing over an erector set, which is the building of the Hindenburg in Friedrichshafen in 1935. At the end, you see masses of slaves pulling out this *gigantic* thing, with *huge* swastikas on the fins. I think it's an interesting comment. It's only about three minutes long.

Also, in the early planning stages we were thinking of doing the Challenger disaster. We soon thought, however, "This is ridiculous, there's

too much disaster." Then Dolly happened, and that was undoubtedly *it* because it opened up the whole medical enterprise, some of which is very, very positive. It would be absurd for those of us who use computers and what-not to take a completely negative attitude toward technology. *Dolly* will open up opportunities to show the ambiguities, the blessings, and the difficulties that come with technology.

One of the underpinnings of this entire project, which I haven't mentioned yet, but which appears in *Bikini,* and may in fact become a prologue to the entire piece, is the two creation of man stories in the Torah and Genesis. The first is the well-known story of man given dominion and power over the fish of the sea, the birds of the air, and everything that moves on the face of the earth, which is very obviously related to making atom bombs. The second story is quite different: God took a lump of dirt and [*gathering his hands together*] breathed life into it and then put the man into a garden with the woman. It says in the Hebrew, *le-shom-ro:* to serve it, to keep it, and to maintain it, which are of course a very different set of marching orders.

Those are two different *stories?*

Oh yes, it begins in Genesis 1 and continues in Genesis 2. Some Bible scholars say that Genesis 2 presents another strand of authorship but forget about that. Just read it as if you're reading James Joyce—and someone who's a very good writer and divinely inspired is giving you another aspect of who you are.

Do you have other projects currently planned for the future, after Three Tales?

There are a number of things, and I don't know exactly what the order will be. Kronos wants me to write a big piece for them, like a half-hour or 45-minute piece. I'm thinking about writing a cello counterpoint with multiple cellos, since multiple cellos basically offer an orchestral texture and at least an orchestral string texture because of the range of the instrument. The cellist will probably be my advisor from Bang on a Can All-Stars. Anne Teresa De Keersmaker, the dancer in Belgium, wants a short piece, which unfortunately she wants more-or-less now. I don't know if I'm going to be able to do it, but we'll see. Also, it seems to me that there are going to be ensembles *like* the Ensemble Modern but happening here in America, such as this Ossia Ensemble, which is of course poetic justice because it's my ensemble and ensembles like it that were the original models for these groups. That is, ensembles of 20 or 30 musicians who are professional, who are aware of popular, non-Western music, and are highly trained, first-rate players. I think there is going to be a very important group like that coming out of some context that I'm involved in

now—and I might write the first piece for that ensemble—which would also specialize in pieces working with media and live musicians. Also, I imagine that after a good period of time Beryl and I will do a third collaboration.

Do you prefer to have several pieces that you're working on at the same time?

No, I've never worked on more than one piece at a time; I'm *incapable* of working on more than one at a time. But I'm also beginning to understand that there are two basic kinds of work that I'm interested in, which are what you could call music theatre pieces using video and sampling, and purely musical pieces like *Triple Quartet* that are not using that. So, I suspect it'll be a balance between the two.

How do you get through times when it's difficult to compose, if you have times like that?

Oh, I have *plenty* of periods when it's difficult for me to compose. Well, I can go downstairs and have a cup of tea, or I can go out for a walk. When I was younger I used to think, "I've been lucky up to now, but now the truth is out [*laughs*], I'm never going to write another note, this is it!" I went through enough paranoiac episodes. What keeps me going is that there's nothing else on earth that I can think of doing that could be of any interest to me.

I think it's very important for artists in general to be self-critical. There's of course a point where if you're too self-critical, you're in trouble. But I've known a couple of artists, who shall remain nameless, who are very talented and brilliant and potentially great artists but because they thought that anything they did was just fine, they ended up producing a lot of garbage; they had no self-criticism. I think that a *judicious* sprinkling of self-criticism is essential, as I see it, to do really good work in any field.[2]

Notes

1. In September 1967, the instructions for this unrealized work read: "Very gradually slow down a recorded sound to many times its original length without changing its pitch or timbre at all." See Reich 1974: 14–16.

2. The author is grateful to Dan Thompson, Jonathan Kramer, Jeremy Caplan, Melanie Schoenberg, and Dwight Yoo for their advice and support, and to Andrew Lee at Boosey & Hawkes for his generous assistance.

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Screeds

By Ned Rorem

Composition Today

This year marks my 79th birthday. It also marks the 59th birthday of my first radio broadcast, which took place at WNYC.

In February 1944, the pianist David Stimer, librarian for WNYC, launched the American Music Festival, a series of broadcasts by living composers that would occur annually ever after, between Lincoln's and Washington's birthdays. I still have the little flyer that my friend Morris Golde printed up, announcing my own half-hour program, to be performed by myself as pianist with three women friends—a soprano, a flutist, and a violinist. Today they have vanished forever, but the festival remains.

So, what has changed at the beginning of the new century?

Well, nothing and everything. Nothing, at least insofar as WNYC is concerned. Our city station has had its ups and downs, but the promotion of live American music still obtains, through the yearly celebration and through interviews.

Yet, the substance of radio music everywhere now seems to be 99 percent pop versus one percent classical, and the classical is 99 percent nineteenth-century music versus one percent twentieth-century. The audience for this is not only ignorant adolescents but cultured adults—which leaves me and my composing brethren out in the cold. There is scarcely any outlet for contemporary classical music—certainly not television, which has largely replaced radio.

Let's define terms. "Classical" really refers to a period in history. It emerged after more than a millennium of mainly church music, thrived in the court during the eighteenth century, was nudged into concert halls by the Romantic movement in the nineteenth century, and by so-called modernism in the twentieth. The current comprehensive title still remains "classical," and is distinguished from pop music by being invariable, designed for trained artists, and notated in complex forms. Popular music is generally for untrained performers, variable in all senses, not written down, in tight forms, and almost exclusively vocal. The generic term "pop" includes rock, scat, bebop, and dozens of other terms deriving mostly from singing styles and texts. Some of it—jazz, for example—has become almost classical. Some classical music, in turn, has become almost popular.

Pop music, essentially a music of "the people," for centuries ran parallel to the musics of church and state without the three expressions ever

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merging. "Music of the people" might be identified as always having the mindless insistence of a steady beat (it keeps workers working), as distinct from the meandering melisma of the cathedral or from the "sophisticated" rhythms of the court.

Today, for the first time ever, pop dominates the globe, culturally and financially. In the past five or six years the situation has worsened. There are fewer than a hundred paid classical music critics in the United States; most respectable periodicals have dispensed with them, while retaining pop critics. As for *contemporary* classical music, it's beyond the ken of every class. Intellectuals, who know all about the other arts, from Giotto to Jackson Pollock, Dante to Philip Roth—when it comes to music they stop at Verdi with no concept of living music except pop. Yet, ironically, there are more young serious composers around than ever before, thousands really, as opposed to the dozen or so when I was a kid. What's to become of them?

My advice: Since big orchestras and big publishers and big record distributors don't want you, stay in school as long as you can and stay chummy with those performers who will otherwise forget you when you're out in the real world; start your own small publishing and recording companies; and organize your own small touring ensembles, as Britten did in England.

What, then, is the future? people always ask us older composers, as though we'd know better than they. The future does not exist; if it existed, it would not, by definition, be the future. Still, there's an anxiety in the question—a question inconceivable 150 years ago, when music of the day was the order of the day. Anyone who makes predictions is bound to be wrong. Our main concern lies in the present. The present quality of contemporary classical music, at least in America, is actually pretty good. One might wish there was a larger public—although perhaps the richest experiences are, by their very nature, unavailable to most people.

My Music and Politics

Like all so-called creative artists—indeed, like all humans with brains—I am a net of contradictions. Born and raised a Quaker, I still adhere to the philosophical tenets of that group, yet I am an atheist. I do not believe in God, yet some of my most inspired music has been settings of scripture from both the Old and New Testaments. For I do believe in Belief, and in the beauty of works that have, in the name of God, come to be. It is, in fact, with a certain poignance and a vague envy that I observe true believers at work and play, for I know I shall die without faith.

I believe in the value of all life. I am a pacifist, a term I find beautiful (as did my mother and father), yet a term derided by some conservatives. Those same conservatives have nonetheless embraced me in their press,

perhaps thinking that because my music is conservative (in the sense that it retains the values of yesterday), that I am in all ways on their side.

I do not believe that music can be political (not, at least, in the sense that it can change us), can make us believe something we have not heretofore believed. Music has nothing to do with nobility or goodness, nor with evil or vanity. Music does not alter us; it confirms.

Music reflects; political speeches alter. Military marches supposedly help us march into war, but in fact that's not music but hypnotism—the regularity of the beat. If, however, I could pen a piece that would make us march *away* from war, I would do it in a trice, at the expense of my whole career.

Insofar as music does change us, it's not very good music.[1]

Women and Minorities in Contemporary American Classical Music

Asked to cite the 21 most interesting living American-born composers, I quickly name seven women, two black men, and twelve white men—half of them Jewish. They range in age from 37 to 87, and six of them are gay.[2]

Women as performers have existed only for 250 years, mostly as vocalists. The noun "music" is feminine in all European languages, and though the art is sometimes termed "effeminate," it has always been strictly a male domain. A soprano might demand and receive equal pay because she's not replaceable by a man, but female flutists or drummers must fight it out.

Women as composers are of quite recent vintage. Unlike writing and drawing—crafts available to any child—musical composition supposes a lot of technical know-how, middlemen between maker and listener, plus rehearsals and the hobnobbing with managers, conductors, and sometimes dozens of orchestra men all at once. This is not the usual accompaniment to housewifery. Our first women composers wrote salon repertory with titles like *Scarf Dance,* gently accessible small forms dismissed as "ladies' music." Then, as more and more women turned professional, their music at first sounded so "masculine" that only a woman could have penned it. But if masculine meant loud and insistent, how to account for the comparatively passive output of our presumably virile Faurés and Chopins, or of Griffes and Theodore Chanler? Today, of course, an un-alerted listener would never guess the sex, or even the nationality, of a composer. Feminist composers can no longer be identified as such in their nonvocal works, since music, unlike prose or pictures, has no concrete meaning.

Like women, our black population had no outlet for self-expression in creative music, except in the group participation of unnotated spirituals. Individuals like William Grant Still (but who else was there?) used programmatic titles like *Afro-American Symphony* and *Pages from Negro*

History back in the teens and twenties. (I'm personally proud that my first piano teacher was Margaret Bonds, who left a legacy of arrangements of spirituals, for both solo voice and orchestra.) Today, black composers write music, not black music.

So do white male composers. As for the Jewish ones, they began to materialize about the same time as blacks and women. But today, unlike, say, Bloch or Milhaud or even Leonard Bernstein, they do not compose what could in any way be called Jewish music.

Two women, Ellen Zwilich and Melinda Wagner, have finally won Pulitzer prizes, as has the African-American George Walker.

Who are the male WASPs that I elect? Well, I'd include two trentenarians, Michael Torke and Daron Hagen, and two octogenarians, David Diamond and Lou Harrison. As for the six gay ones, outing is not my business. Let's say only that what was until recently named Gay Sensibility is just a slogan masquerading as an idea. When people ask me if there is a gay sensibility, I answer: Define it; then I'll tell you if there is one. I, however, am gay, and I also got a Pulitzer, back in 1976 when such wicked ways were looked on askance.

Now, with all this evolution, where do we composers stand? Since there are no longer stigmas against blacks and Jews and gays and women, we're one big happy family. So the only stigma might be said to be against composers as a whole. In fact, to the managerial establishment as well as to the overall public, a black gay woman is no more discriminated against than a straight white man. Composers today are not so much tolerated as just invisible.

The Intelligence Quotient

We learn from television that Mozart can raise your child's I.Q. Then we see shots of kids jumping rope, accompanied by the G-minor symphony.

The concept is insulting both to Mozart and to the children. The children are not listening to the music; they are merely hearing it as a steady beat to keep the game going. Since music, good and bad, has long been used as wallpaper—for parties, in elevators, at the A&P—it has become simply background. In the case of Mozart, it's not the form and texture but the regular rhythm that makes the point. The rhythm could as well be that of Ravel or the Rolling Stones.

Music has nothing to do with intelligence, or even with culture—or how do you account for so many educated intellectuals, including major creative writers and painters like Kafka and Picasso, being tone-deaf? Nor does music improve us so much as make us more of what we already are—or how do you account for Nero fiddling while Rome burns, or Nazis playing Beethoven quartets to drown the prisoners' screams? Music is not morality,

and many a miraculous musician, starting with Wagner, is no better than he should be. To use music as therapy is to belittle the composer.

Certain sociologists making this study allow that, yes, Mozart does raise a child's I.Q., but only for ten minutes. Can they tell us what lucid revelations arose and vanished during this wondrous period? Does it mean that their own adult I.Q. was also briefly raised?

I'm a bit weary of Mozart forever being invoked as the one genius about whom we all agree; and that if we could concoct a computer for churning out masterpieces, the computer would be based on Mozart's brain. Now, if I proclaim that Mozart is not an Absolute—that, indeed, he is not a genius —can you prove me wrong? Greatness is a matter of opinion, and until we all have one opinion we will never be able to concoct that computer to indoctrinate our children. But then, in that perfect world, our children wouldn't need indoctrination.

What Does Music Mean?

I've been living with music all my life and still don't know the answer to this question. Surely music's the most immediately persuasive of the seven arts—can any of the others make us weep, or fall in love, or recall the past? Yet *how* does music do this? Is the ear more sensitive than the eye? Or is it that our whole body is affected, as when we are moved to dance? Mendelssohn said: It's not that music is too vague for words; it's too precise for words.

But if music can be proved to have concrete meaning, it's only music with *words,* not the notes, which is the proof. For words are symbols of specifics like "tree" or "rain" or "Tuesday," or even "and" or "but." Chords and phrases are possibly symbols too, but of what? Music cannot depict "yellow" or "spoon" or "Jennifer," much less "perhaps" or "if." If a composer writes a nonvocal tone poem with a programmatic title, we envision the action, but only after having read the program. The music means only what the composer tells us, *in words,* it means. Play *The Pines of Rome* for an unalerted listener, and tell him it's *The Fountains of Rome,* and he'll be none the wiser. Play *La Mer* for the same listener, and say it depicts three times of day, not at sea, but in Paris: Les Halles in the morning, a slaughterhouse at noon, and a dance hall in the evening. Again, he'll be none the wiser.

True, certain vast generalities seem recognizable through music: Love, for example, or Death, or Weather. Yet, the concept of Love as expressed through swooning strings stems from Wagner; before him the convention was more sedate, as with Monteverdi, then Schubert; after Wagner the convention turned coarser, as with Shostakovich's naughty trumpets in *Lady Macbeth of the Mtsensk District,* or Ravel's scorching *Boléro.* As for Death, the minor mode did not signify sadness even two centuries ago

(witness "God Rest Ye Merry, Gentlemen"), while the major mode in ancient Sparta was banished for its lasciviousness. Only Weather seems inarguably representable in music, and that's through onomatopoeia: a gong stroke *is* thunder, high piano tinkles *are* raindrops.

In music's so-called abstraction lies its power, especially when combined with theater. A slow score can bog down a scene at the racetrack. Fast music might make a courthouse scene seem silly. Music can weaken a strong script, strengthen a weak script. . . . Years ago, a piece of mine called *Eleven Studies for Eleven Players* was choreographed by several companies. It was fun for me, if not especially revealing, to watch lithe bodies doing the obvious—leaping to the lively sections, writhing to the mournful sections. Only when Martha Graham put her hand to the same music did I realize the potential, indeed the need, for the juxtaposition of mediums. In one movement, where the music goes mad with breakneck brasses blasting, she had a male dancer simply stand silent, moving his head ever so slightly. In another movement, where the slow tempo scarcely budges, she had a female dancer gyrate hysterically. Martha's imagination lent a whole new sense to my score, and by extension to her choreography, simply by going against the music.

To state that all music is abstract, all painting representative, and all literature concrete, is to state the obvious. Sure, they can be joined, as in song and dance, and thus shift their sense, to some extent. But they are not mutually inclusive. After all, if the arts could express each other, we wouldn't need more than one.

American Song at the Millennium

Not one American singer today can begin a career exclusively as even a recitalist, much less a recitalist in his native tongue. If he manages to fill the hall, he does so on his own reputation as an opera star, and the program is always studded with arias, watered down with piano accompaniment.

Forty years ago, Rostropovich commissioned a number of large-scale vehicles from composers all over the world. That he was also a great interpreter seems slight when you realize that, emerging from a creatively archaic country, he single-handedly caused to exist most of the important cello literature of that half-century. Imagine an American cellist, or *any* of our virtuosos, emerging from this creatively advanced country, pursuing such a notion. None of them, not even for his immortality, has voluntarily paid for new works.

Europeans are general practitioners and Americans are specialists in everything except recital song repertory. Young German or Italian or French singers master the problems of their native tongue first and fore-

most, and often spend distinguished careers singing solely in their own language. Young Americans learn every language *except* their own. Graduation recitals feature songs in German, Italian, and French—none of which the students "think" in; if they do offer an English encore it is tossed off with a fake foreign accent.

Due partly to the high majority of European teachers who deem English unsingable, and partly to the opera-oriented bias of students themselves, the voice recital has atrophied in the United States. The students (those not aiming for musical comedy) sniff neither glory nor money in English-language repertory. They feel no pride in—and have scarcely an awareness of—the long tradition of song in English. To declare as they do that English is ungrateful is to see clearly the thrilling pitfalls that in foreign languages are invisible. The only thing bad about English as a vocal medium is bad English. And the only thing bad about modern vocal settings is bad music.

If song in the world of Elvis is a trillion-dollar business, song in the world of serious classical music is the least remunerative of expressions. Song in English, particularly by Americans, is more rarefied still, partly because historically the form's intimacy never meshed with the massive concepts of our pioneer composers, and partly because we have no recital legacy for singers. If you can count on one hand the number of vocalists who subsist as recitalists, even they prosper more than composers. Today, re-creation takes priority over creation. The Three Tenors, intoning arias by dead Italians, earn more in one evening than what a live American composer earns in a lifetime.

This is why so few American composers anymore specialize in songs. Singers won't sing them because there's no outlet; there's no outlet because there's no real money; there's no real money because managers are aiming higher, and the higher aim exemplifies the increasing philistinism of the concert world vying with international pop culture.

Aaron's Songs

Aaron Copland was the father of American music. American music, for the moment, will be defined as music penned by Americans after 1925—eschewing the up-to-then German traditions admired by, say, Griffes and MacDowell—stemming from the economical leanness promoted by Nadia Boulanger, and then coming to a close around 1955, when the serial killers took hold with a featureless canvas that could in no way be identified as national. If Virgil Thomson was the first to borrow native Kentucky tunes and treat them symphonically until, finally, like Poulenc in France, he composed his own folk music (so to speak—or so to sing), Copland improved upon the practice, embellished it, taught it, and made it his own.

Appalachian Spring, with its stress on spare harmony and homemade folksong, its dearth of counterpoint, its scoring without much doubling, and its fairly simple hand-clapping rhythms, defined American music for two generations.

Isn't it interesting that this composer, raised as a well-off urban Jew, wrote exclusively about poorish rural gentiles? Every artist is half child, half grownup. When the grownup wins out, the artist dies. Like all artists, Aaron was a child, but where some play at being grownup, Aaron's childishness had a frank visibility that I've never seen elsewhere, except perhaps in Ravel, of all people. Someday I must expand a theory about their resemblance—in their target if not in their arrows. For although Ravel was lush where Copland was plain, both stressed the craft of *dépouillement,* of stripping bare. And has it ever occurred to you that in their "representational" music they seldom portrayed the adult world? Ravel, with his toys, his Daphnis, his affinity for animals, was *L'Enfant et les sortilèges* incarnate. Copland's Common Man was an abstracted man, like his ballet personages, who were eternal adolescents in the wide, open spaces. He was forever drawn to the pubescent realm of *The Tender Land* and *The Second Hurricane.* Both men were urbane (they knew "everybody") but dwelt far from the madding crowd: Copland in sophisticated innocence, Ravel in naïve sophistication.

But it is interesting, too—since children's music is inevitably sung music—how few vocal works there are by Copland. Beyond the two brief operas just mentioned, what is there? Well, the first extant manuscript is a one-page fragment named "Lola," composed at age fourteen. And there were a couple of songs from the late twenties, and some little choral pieces from the films of the late thirties. Then in 1950, with the premiere of *Twelve Poems of Emily Dickinson,* which we had heard about for years but had never heard, a curtain was raised. Bliss was it then to be alive, at least for us young composers—all twelve of us!—when every new work by Copland (or Stravinsky or Shostakovich or Britten) was greeted with ecstasy, and the land was still rich with the enthusiasm of first-times.

Except for his arrangements of Old American Songs the following year, this cycle was the first and last foray into the genre by Copland. If today Dickinson is the poet of choice for American song composers (you'd think there was no one else!), the choice was relatively unhackneyed in 1950. The settings of the poems, each dedicated to a fellow composer and each expertly self-contained, form a unified whole befitting cycles by Schumann or Fauré.

My favorite begins: "The world feels dusty when we stop to die, / We want the dew then, honors seem dry." I loved Aaron too much to want to "honor" him. Instead, I offer to his memory the preceding sentences like a dew-drenched valentine.

For Sahan Arzruni's Armenian Recording (1986)

A unique contradiction seems embedded in the typical American music lover of our century: He likes only what is far in time but close in space. Shunning the music of today, he nonetheless favors old music from his immediate culture. Contemporary American music is as foreign to him as the classics of China, while the classics of Western Europe soothe him more than any nineteenth-century composer from the East.

True, music is not a universal language but rather an attitude, of one consciousness and of one environment, which does not easily slip past the customs inspector. We are not all the same; it is difference—not increasing similarity—that lends Earth's dwellers their beauty, wisdom, mystery and, indeed, their identity. But if this identity is never fully grasped by a dweller from another environment, sometimes it can be sensed, appreciated, and even loved, especially if the identity lies in works of art. (In any case, art has little to do with understanding, but much to do with feeling.)

The present disc contradicts the contradiction. This garland of Armenian song—although from far in space and near in time—could satisfy the needs of any fancier of Schubert *Lied.* The arch and ebb of the tunes, although conceived mostly by recent composers, reflect a folkish prosody that borrows, as does Lied, from surrounding cultures—Greek, Turkish, Arab, Russian—while retaining its signature as Armenian. That local signature lies in the ictuses of the native tongue, just as American music—even nonvocal music—can be distinguished from British by dint of mirroring the emphases of its composer's spoken language. My meaning will be clear the moment you hear the virile velvet of Berberian's bass-baritone as it rises and falls (with what passionate intelligence!) to the inspiration of his countrymen, and the caringly expert pianism of Sahan Arzruni as it limns the sad, odd, gay and, above all, flowing melodies to which he was born. I myself was born a Midwestern WASP and weaned on Ives and Griffes. But when I heard these Armenian songs, I felt that they too were mine.

Notes

1. Most of "My Music and Politics" was written more than fifteen years ago, as a prologue to my "political" song cycle, *War Scenes* (recorded by Donald Gramm).

2. The 21: John Corigliano, Richard Danielpour, David Del Tredici, David Diamond, Lucia Dlugowsevski, Deborah Dratell, Lukas Foss, Daron Hagen, Lou Harrison, Jenifer Higdon, Barbara Kolb, Ezra Laderman, George Perle, N.R., Christopher Rouse, Alvin Singleton, Michael Torke, Joan Tower, Melinda Wagner, George Walker, and Ellen Zwilich.

Little Bangs: A Nihilist Theory of Improvisation

By Frederic Rzewski

Anything can happen once.

In the 1960s, a movement appeared in Europe and the United States, more or less linked with the revolutionary and anarchist ideas current at the time, known as "free music," "free jazz," or "free improvisation." This kind of music was called "free" because it was made spontaneously, without any kind of preconceived structure, without scores, themes, or any other kind of agreed-upon plan. This absence of structure and preparation was held to be somehow identical with "freedom."

But it could equally well be said that this kind of music was no more "free" than, say, the act of making a pot of coffee in the morning.

In his book *War Pilot,* Saint-Exupéry, looking back on his flying experience in World War II, considers the question of "adventure." His most intense adventure, he finds, was not when he was flying low at night in the middle of enemy flak, with his wings covered with ice. It was rather when, lying in bed on a winter morning, he calculated how long it would take to run across the room and light a fire in the stove before jumping back under the covers.

Similarly, a "free" improvisation might be no more than a mechanical repetition of maneuvers that have been executed so often, over a long period of time, that the performer can go through an entire concert without thinking, like someone driving a car along a route so well known that he can follow the curves in the road with his eyes closed.

A classical musician performing a memorized composition for the hundredth time, on the other hand, might be able to create an effect of spontaneity and freedom such that the audience holds its breath, wondering what comes next, even though the music is known to everybody.

One could say that recording is a case where the two poles of determination and spontaneity are definitively separated. But there are recordings that one can listen to hundreds of times, each time discovering something new. The recording one listens to on Wednesday is not the same as the one heard on Tuesday.

The question of freedom and necessity, in music as in any other area of human experience, is trivial. Whether a musician acts in accordance with some predetermined plan, changes the plan at every moment, or acts without any conscious plan whatsoever, has no effect at all on the degree of freedom or determination of the resultant music.

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An analogy would be the equally trivial question of the existence of God: God may or may not exist, but the answer to this question, if it could be known, would make no difference at all. (This God would not necessarily be favorably or unfavorably disposed toward me, or even be aware of my existence; or, if aware, then possibly indifferent to my existence except as an occasion for amusement. I could be nothing more than a tiny part of a cosmic game, in which good and evil contend with one another, and in which each side is given equal chances of winning. Eventually, one side having won, the game would be over, and a new game would begin.) Whatever the reality might be, the activity or non-activity of this God would not make the slightest difference in the way I live my life.

So it is with the question of freedom or determination in music. Whether Bach's *A Musical Offering* is the result of a carefully constructed design or simply the transcription of a spontaneous improvisation is of no importance whatsoever.

So what is improvisation, and how does it differ from composition?

* * *

In the fall of 1968, I was living in Rome and working with a group of musicians, Musica Elettronica Viva. We were all composers, but were also very intensely interested in exploring the relatively new field of free improvisation.

I had just bought a Philips microcassette recorder, which had just appeared on the market, and was having a lot of fun with it. (I used it, for example, in improvised performances to make very quick loops by alternating the toggle switch between "play" and "rewind" positions.)

I was walking down the street in Trastevere one morning when I saw Steve Lacy, one of our group's members at the time, coming out of a bar. Without thinking, I went up to him, took out my little recorder, and said: "Steve, in fifteen seconds, tell me the difference between composition and improvisation."

Without hesitation, Steve replied: "In fifteen seconds, the difference between composition and improvisation is that in composition you have all the time you want to think about what to say in fifteen seconds, while in improvisation you have only fifteen seconds." (Later I timed his recorded answer with a stopwatch and found that it took exactly fifteen seconds.) Elegant as this formulation is, it clearly does not tell the whole story, nor could this story be told in fifteen seconds except perhaps as an endless succession of fifteen-second variations on this theme.

One could say that composition is a process of selectively storing and organizing information accumulated from the past, so that it becomes

possible to move ahead without having constantly to reinvent the wheel. Improvisation, on the other hand, is more like garbage removal: constantly clearing away the accumulated perceptions of the past, so that it becomes possible to move ahead at all.

The most basic technique of composition is that of transferring information from short-term memory to long-term: remembering an idea long enough so that one can write it down. This process of transference is also one of translation: re-forming an impulse or feeling so that it can be expressed in some kind of symbolic language. The most basic technique of improvisation is that of short-circuiting this process of conservation: forgetting—momentarily at least—everything that is not relevant to the objective of expressing an idea immediately in sound. This process has more to do with spontaneous reflexes than with language.

Composition is the result of an editing process in which one's impulses are passed through the critical filter of the conscious mind: only the "good" ideas are allowed to pass through. Improvisation is more like free association, in which ideas are allowed to express themselves without having to pass this test, somehow avoiding the barriers erected by consciousness.

Improvisation is a game that the mind plays with itself, in which an idea is allowed to enter the playing field, in order to be kicked around in pleasing patterns for a moment before being substituted by another idea. The first idea is unintentional, an error, a wrong note, a fumble in which the ball is momentarily lost, a momentary surfacing of an unconscious impulse normally kept under cover. The play to which it is subjected is the graceful recovery of the fumbled ball, a second "wrong" note that makes the first one seem right, the justification for allowing the idea to be expressed in the first place.

The activity of the improviser resembles that of the magician, who draws the attention of the observer to one hand while he performs the magic with the other. What the magician does in space, the improviser does in time.

In Lacy's view (as expressed in the anecdote I quoted a moment ago), there would seem to be no difference between composition and improvisation, except for one of duration in the preparation of the act. In that case, improvisation would fall into the category of "real-time composition," an idea widely accepted in the 1960s, which had legal as well as aesthetic consequences. By this was meant: music that is composed at the same time that it is performed, rather than previous to the performance, as normally happens.

If there were a machine that could write the music down as fast as it was played, or even as soon as ideas appeared in the player's mind, then there

would, in fact, be no difference between these two things. But such machines, though crude, do already exist, and clearly they change nothing.

Writing is not merely a mechanical process like sound recording, but something that goes on in the brain, before any mechanical activity. Even in the experimental *écriture automatique* of the surrealists, there is a time interval, however small, before the hand executes the necessary maneuvers that record the symbols generated by the brain's nervous impulses.

Composition and improvisation, however related, however inseparable in fact, remain two quite different, even contrary, mental processes. If composition has to do with remembering, and improvisation with forgetting, it is hard to imagine one without the other, since both of these things are fundamental to the brain's activity. Furthermore, both of these things must be very common, potentially understandable by everybody, in much the same way that everybody who dreams is potentially a poet. (Pablo Neruda in his autobiography relates an encounter with a young worker on a train who, recognizing the famous poet, tells him that he too wished to be a poet, rather than a simple worker. Neruda replies that he is in fact a poet, since he, like everybody, dreams—the only difference being that poets simply remember their dreams long enough to write them down.)

Music, like dreams, translates poorly into ordinary language. Although it may be possible to describe in words a dream or a piece of music, it is certainly not possible to reproduce the original experience, and very often the description of the dream or music cannot be done at all without some degree of falsification.

The rules that govern meaningful speech simply do not apply to dreams or to music. If it were possible to imagine a machine that would translate music into speech, it would most likely come out as nonsense. And yet, when we hear a Beethoven symphony or an improvisation by Charlie Parker, the music seems to communicate something meaningful. Is it possible to make some general observation about what is communicated specifically by music, which goes beyond language? And is it possible to say something about that which is communicated by improvised music in particular?

An improvised piece of music is held to be "free." A written piece is assumed to be "structured." Depending on one's point of view, freedom or structure might be considered to be desirable or undesirable qualities, "good" or "bad" according to the circumstances surrounding the performance, and according to one's beliefs about what makes music good or bad.

In the 1960s, in radical circles of the "free music" movement, *freedom* was an ethical and political, as well as an aesthetic, concept. Free music was not merely a fashion of the times, and not merely a form of entertain-

ment. It was also felt to be connected with the many political movements that at that time set out to change the world—in this case, to free the world from the tyranny of outdated traditional forms.

Free improvisation was viewed as the possible basis for a new form of universal communication, through the spontaneous and wordless interaction of improvising musicians of different traditions. (There are intriguing echoes of Wagner in this notion.)

Although many interesting results in this collective experiment were achieved, this movement had neither the time nor the resources to carry this research very far, precisely because its success depended upon changing the world, something that did not happen, and could not have happened at the time. There were some lasting effects nonetheless, and in a small way, at least, the world *was* changed.

The most basic propositions of free improvisation, if they could be expressed in words, might be:

(1) Anything can, and does, happen at any time.
(2) At the same time, things happen in predictable chains, according to predetermined conditions and agreed-upon conventions.
(3) These chains are constantly being broken, according to changes in conditions. Our expectations of what must or will happen also change.
(4) At any moment, my activity or inactivity may influence, actively or passively, the state of the whole.
(5) At the same time, my perception of this state may influence my activity.
(6) A circular causality may exist between present and future, so that not only does the present influence the future, but the future influences the present.
(7) Likewise, the past determines the present, but the present also constantly changes the past (something which, according to Augustine, even God cannot do).

In music, it is possible to express experiences convincingly, which, if expressed in words, appear meaningless. An example would be time flowing backwards. An event, the end of a melody, is perceived before the event that preceded it. We know what is coming, and time is reversed. In this respect again, music resembles dream. (We have all had ecstatic dreams, in which we seem to be out of time or out of space.)

A friend of mine was having frequent dreams in which she experienced profound mystical revelations, which she could not remember clearly when she woke up. She decided to keep a notebook by her bed so that she could write them down the moment they occurred. One night she had a

particularly intense dream of this kind. She awoke, and wrote in her notebook the words in her head. The next morning she woke up and read what was written:

Eternity is that which has no beginning and no end.

Ecstasy, a state of perception in which one seems to be outside of oneself, or to be in more than one place at the same time, is a fundamental element of free improvisation. (In live electronics especially, when the sound that I produce reaches me from a loudspeaker on the other side of the room, I may have the experience of hearing myself in two different places.)

Time is not just a linear sequence, in which the past conditions the future. It is also a continuous present, in which each moment is a new beginning . . . Each moment is a reenactment of creation . . . The universe of improvisation is constantly being created; or rather, in each moment a new universe is created . . . Although events may seem to succeed each other in an orderly way, each one somehow growing out of the one that preceded it, there is no reason why this must necessarily be so . . . At any moment, an event may occur for no reason at all, with no relation at all to the preceding event . . . In this universe each moment is an entelechy, with both its cause and its end contained in itself.

In free improvisation this autonomy of the moment, in which things happen for no reason at all and lead nowhere, is fundamental. Nor is there any reason why my thoughts should follow a logical order. They may be constantly interrupted, forgotten as soon as they occur, and lead to nothing.

This universe—unlike the physical universe, which is presumably the effect of one primal cause, or Big Bang—is an endless series of "little bangs," in which new universes are constantly being created. The new universe may appear to follow smoothly from the old one, or it may have nothing to do with it. In this way, improvisation resembles real life in the real world, unlike most written music, in which the interruptions of real life have been edited out.

In improvised music, we can't edit out the unwanted things that happen, so we just have to accept them. We have to find a way to make use of them and, if possible, to make it seem as if we actually wanted them in the first place. And in a way, we actually *did* want them, because if we didn't want these unwanted things to happen, we wouldn't improvise in the first place. That is what improvisation is about. (The relation of the improviser to the unpredictable things that happen in the improvisation is a little like that of early Christian theologians to the crucifixion. This was an event that should not have happened; yet it did happen, so it had some-

how to be explained. An absurd event had to be turned into a logical event. A historical accident had to be redeemed, transformed into something that was part of a preconceived divine plan. In a similar way, an improviser, having played a wrong note, follows it with another wrong note, and still another, until finally a wrong note is played that makes the whole sequence seem right again.)

Written music often follows the form of the syllogism: A, then B, and A again. Everyday real life, although it may have an orderly sequence, seldom has this symmetrical character. One of the things that makes written music pleasing is the violation of such symmetry. A situation is set up in which a symmetrical repetition or balancing phrase is expected. This expectation is then partly satisfied, but also partly frustrated (see, for example, the scherzo from Beethoven's *Hammerklavier* sonata). Sometimes written music succeeds in reproducing the tentative, groping quality of certain moments of a typical improvisation (see, for example, the largo movement from the *Hammerklavier*).

On the other hand, a basic device of improvised music is to introduce a precomposed pattern unexpectedly, at a moment when anything at all might happen. Such epiphanies of order in the midst of chaos also seem to relate a seemingly formless groping to a larger world in which things make sense.

But the basic subject matter of improvisation is the precariousness of existence, in which anything, death or disease, for example, could interrupt the continuity of life at any time. The attitude of the improviser could, in this respect, be said to be tragic. The tragic situation is precisely that in which a sudden change in power relationships may intervene at any time, causing pain or death for some, and pleasure for others (especially for the impartial observer).

* * *

In an improvisation an event happens, for no reason. It just happens. It seems therefore unrelated to what happened before. The irrelevant event is like a question—"What?"—that triggers a response from the improviser. The reply—"This!"—is a second event, perhaps equally irrelevant, or perhaps, on the contrary, flowing logically from the first.

The question–answer form has the function of removing the first event from its disturbing arbitrary isolation, and replacing it in the reassuring chain of causality with which we are pleased to govern our perceptions.

The present changes the perception of the past. As soon as it is perceived, as it is recalled, it is transformed. As a result, one can never be completely sure of what really happened.

Improvisation describes a world in which things happen without cause, and without direction. They simply happen. The cause follows the event.

Because the offending intrusion is followed by a response rather than by stunned silence, it is justified, becomes plausible. It was what it was, and could not have been anything else; but the perception of what it was has been subtly changed. By such means, music is sometimes able to create the illusion of time reversal, in which cause follows effect. In these extraordinary epiphanies, rare in ordinary life but relatively common in music, the moment becomes a "little bang," a distant echo of the Big Bang of creation.

Typically, improvised music is full of such little bangs. Even if the improvisation is based on, and follows rigorously, a predetermined structure (and perhaps because of this), it is nonetheless still unpredictable: an improvisation, in which, by definition, unpredicted and unpredictable things must happen.

An improvisation must include the unedited raw material of ordinary life, in which chains of causality may appear for a time, but inevitably disappear. These moments in which causality disappears are things that can be simulated in written music, but never exactly duplicated. We can describe them in symbols, and we can translate these symbols into sound, but we cannot penetrate to the heart of this experience if there is no improvisation. Something must happen that is truly unpredictable.

Because improvisation resembles ordinary real life in its precariousness and unpredictability, it contains a necessary element of realism, with which many people can immediately identify, even if the musical language is strange to them. (For this reason, the radical, free music of the '60s and '70s, even though its harmonic language was often as difficult and obscure as the most cerebral written compositions of the same period, was able to attract a much larger audience than did its classical counterpart.)

Because improvisation resembles real life, it can illuminate this real life. It can make us aware that the surface of rationality that covers this reality may be only an illusion. This reality that seems to flow smoothly along familiar lines, behaving predictably in accordance with familiar causal patterns, may be only a small part—that part that I choose to perceive—of a greater reality in which most things happen without cause.

Why, indeed, must events have causes? Why assume that there is an "unknown" cause rather than *no* cause? Why must the universe be comprehensible to my limited human mind? Is it not simpler to admit that, among the vast quantities of data that confront my consciousness at every moment, only a tiny part may be said to be rational?

Most of my experience does not happen for a reason. It just happens. Only a few things happen in an orderly, rational sequence. But these are

the things that occupy most of my attention, because they are the things I can control.

Music can expand our awareness of the irrational, dark side of reality. It can make us aware, if only vaguely, of the possibility of other universes right under our noses, in which our human systems of rational organization do not apply. Such little universes may appear and disappear at any moment, and presumably at any point in space. The improvising musician simply gives them a voice.

Anything can, and does, happen once. Furthermore, it must be so. Somewhere in the universe there must be a place where things fall up, people get younger, balloons inflate by themselves, and dead dogs get up and walk.

* * *

Paradise is now, and can be only now. The question that tormented Pascal—why humans perpetually exile themselves from this Paradise—has never been answered. People continue to choose to live in the Hell of the past, or the Purgatory of the future. For some reason they prefer renunciation or postponement to immediate gratification.

For some reason they also appear to prefer an existing unequal society, in which there is a possibility of greater domination, to a more equal one in which domination is diminished.

I believe these two things are somehow connected. The difficulty of living in the present moment is somehow related to the difficulty of creating an egalitarian society. Both of these things are perceived as ideals, only partially attainable, if at all, in reality. Improvised music has something to do with both of them. Certainly it has to do with being present. It also has to do with democratic forms and equality, at least in a group situation. It can function as a kind of abstract laboratory in which experimental forms of communication can be tried without risk of damage to persons. The great improvised music of the twentieth century may be remembered by future generations as an early abstract model in which new social forms were first dimly conceived.

Improvisation tells us: *Anything is possible—anything can be changed—now.*

The world can be changed without having to change human nature. Humans are perfectly all right the way they are. They mostly get along fine, without anyone telling them how to do it. They tend not to bump into one another walking on the street. They feed, nurse, and help each other. Most of their transactions happen easily, quickly, unconsciously, efficiently, and without money. Families and villages across the world can be examples of a society in which complexity is achieved without despotism, equality without violence.

Change of some kind is inevitable. We have to be ready for anything. The potential for new forms of intolerance on a mass scale is as great as it ever was. But the beautiful nonviolent revolution is also more needed than ever. (Where there is danger, says Hölderlin, the Saving also grows: *Wo Gefahr ist, Waechst das Rettende auch.*)

* * *

Great social movements do not have clearly definable causes. Although not totally free of causality, they nevertheless happen spontaneously. No individual can foresee them completely (which is precisely what improvisation is all about). And if there *is* ultimately some kind of peaceful transition to more generous forms of social organization, music—and improvised music in particular—will play an important role in this process, as it has done in the past.

Material Matters

By Oliver Schneller

'True to nature, all the truth: that's art.'
This hallowed notion is a threadbare fable.
Infinite is nature's smallest part.
They paint what happens to delight their heart.
And what delights them? What to paint they're able!
—Nietzsche

I. I was born in 1966 in Cologne. My mother was a practicing music teacher until my arrival. As a result of my father's occupation in the diplomatic service, I spent my early childhood in Ireland, the Sudan, and Belgium. When I was twelve I started studying the classical guitar and switched to saxophone as a teenager. My interest in jazz improvisation grew during a five-year stay in Manila, Philippines, where I played saxophone and double bass in the International High School big band and school orchestra. I wrote my first musical score for the school's theater director, who needed incidental music for a staging of Brecht's *Caucasian Chalk Circle.*

During my studies of musicology, history, and political science at the University of Bonn, I began taking private lessons with the Bonn composer Friedhelm Aufenanger, a student of Jürg Bauer and Boguslav Schaeffer. I attended the Summer Courses for New Music in Darmstadt. In Kathmandu, Nepal, I worked for the Goethe Institute on a preservation project to save local musical traditions and took flute lessons with a Nepali Buddhist. After completing my Master's thesis (*Schönberg's and Debussy's 'Pelléas et Mélisande': A Comparative Study*) in Bonn, I attended New England Conservatory, in Boston, where I received my Master's degree in composition, studying with Lee Hyla and Pozzi Escot, and classical saxophone with Kenneth Radnofsky. Together with pianist Heather O'Donnell, I gave lecture recitals on Charles Ives and on the music of Jewish composers who had become victims of the Third Reich. In New York I initially pursued doctoral studies in composition with Thea Musgrave and John Corigliano at the CUNY Graduate Center before transferring to Columbia University to study with Tristan Murail. At summer festivals in Europe and the U.S., I studied with various composers, of whom I consider Iannis Xenakis, Helmut Lachenmann, George Benjamin, and Vinko Globokar to have had the most influence on my work.

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II. *They paint what happens to delight their heart.*
And what delights them? What to paint they're able!

Since 1994 the choices of the material in my compositions have been increasingly led by timbral considerations, and coming to the Columbia Computer Music Center in 1997 stimulated my interest in computer-assisted sound analysis. I made the mistake of turning my attention immediately to a rather complex area of spectral behavior: the human voice. The ambitious project I sought to realize in my composition for amplified string quartet and tape, *Joyce Paraphrases* (1997), was to break down speech sounds and rhythms into their most prominent building blocks and then "resynthesize" these components as musical material for the string quartet.

Joyce Paraphrases is the third in a series of compositions inspired by my readings of Joyce's *Finnegans Wake* (the first is *Finnagain Speaking,* for chamber ensemble; the second is *Variations on a Word,* for computer-generated tape). The material basis of the piece is the first 100-letter word from the *Wake,* as read by the Irish writer Patrick Healy:

BABABADALGHARAGHTAKAMMINARRONNKONNBRONNTONNERRONNTUONNTHUNNTROVARRHOUNAWNSKAWNTOOHOOHOORDENENTHURNUK

This word, a sonorous composite of word particles from different languages, is primarily the onomatopoetic representation of a thunderous fall, the fall of man after the original sin, the fall of Lucifer, and of the mythical giant Finn McCoul, but, most important, of the colossal thunderfall that—according to the Viconian concept of time, which profoundly influenced Joyce—opens every new cycle of history and that holds the origins of language. The multilayered narrative of *Finnegans Wake* unfolds as a consequence of this fall-word. In Joyce's treatment of language, words—often neologisms in the form of respellings, or combinations of words from different languages—are carriers of more than one meaning. They form a layered network of connotative meanings, associations, and suggestions, somewhat like a palimpsest, in which previous layers still magically show through. It seems that the action never happens in one place only, but rather moves forward on several levels at once. The resultant synchronous (as opposed to diachronous) conception of narrative produces manifold constellations in which even contradicting situations can coexist—as if in a dream.

These literary characteristics opened up to me a world of musical implications, which came into consideration when I composed *Joyce Paraphrases.* The manipulation of the perception and recognition of musical objects, altered according to the experience of time; the tangential episodes in

between two points of recurrence; "satellite" motives accumulating *around* themes instead of originating from or leading to them; the dialectic of fragment and totality—all are musical reflections of the language of *Finnegans Wake.*

My idea of using a "sounding" of the 100-letter word as the basis of my piece led me to a reconsideration of the relationship between word and music. Sound analysis software enabled me to trace the spectra in each syllable of Healy's voice reading the word, and to establish these "spectral chords" as the fundamental pitch material of the piece. Since the oral cavities in vowel production create largely harmonic spectra with a high rate of fluctuation in their evolution over time, I restricted myself to transcribing merely the average "static" spectrum that is found at the onset (attack) of each syllable: in the case of a vowel-onset, I selected the partials according to their perceptive weight, using the Terhardt algorithm; in the case of a consonant-onset, I used the resonant formant of the vowel immediately preceding this consonant as a filter to shape the dense frequency-field of the percussive plosives and fricatives (see fig. 1).

The four sections of the piece take the word from an initial unprocessed and complete statement to a gradual disintegration, which sinks deeper and deeper into the phonic levels of Healy's voice. While the strings initially double and enhance the partials of the voice, soon a point is reached where their music bursts open the contained spectral shell of each (recorded) syllable, and the partials take on a contrapuntal life of their own (see fig. 2). Contours of an Irish ballad entitled "Finnegan's Wake" lead to the final pulverization of all word particles. Out of these particles emerges a sequence of "spectral chords," in which the sounds of the word are musically recomposed after their electronic decomposition.

Looking at the piece from a distance, I realize that I did not achieve what I had perhaps too ambitiously set out to do: create a music that was, in character but also in *Gestalt,* as agile and fluid as human speech. I had chosen to write for a string quartet, an ensemble renowned for its potential to fuse into one musical body, moving and breathing as a unified entity. While from a rhythmic point of view this project "came across" in a few spots, the main problem was in the mixture of instrumental sounds and speech sounds: the instruments would always be heard as a violin, a viola, or a cello, and no matter how much I had filtered the vocal sounds to try to make them fuse with the instrumental timbres, the mere presence of a recorded voice created two distinct—if not unrelated—levels of auditory information. In subsequent pieces, I turned to the analysis of less complex sound sources, although I plan to return to human speech. It seems that music and speech are so closely related that music arises out of speech (or speech out of music, if we want to follow the hypothesis of Julian Jaynes).

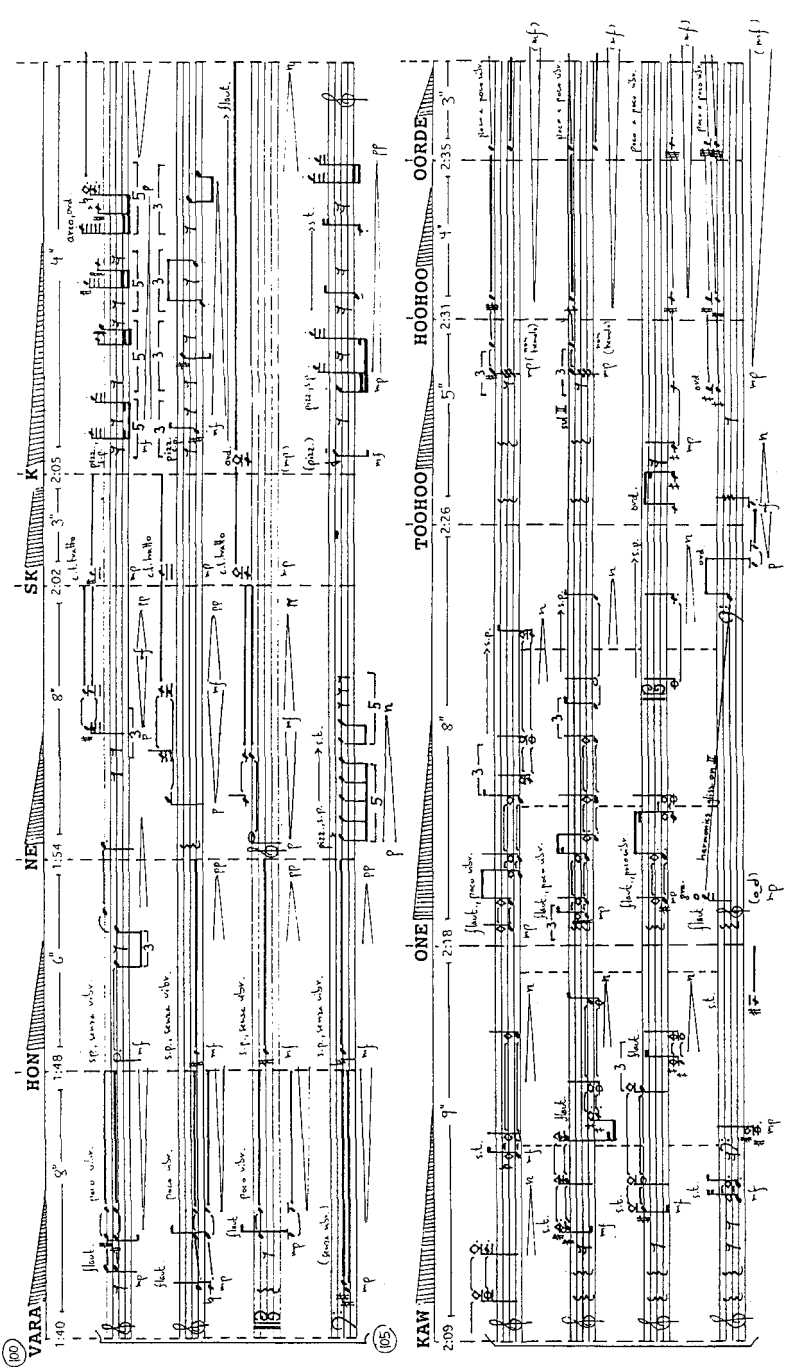
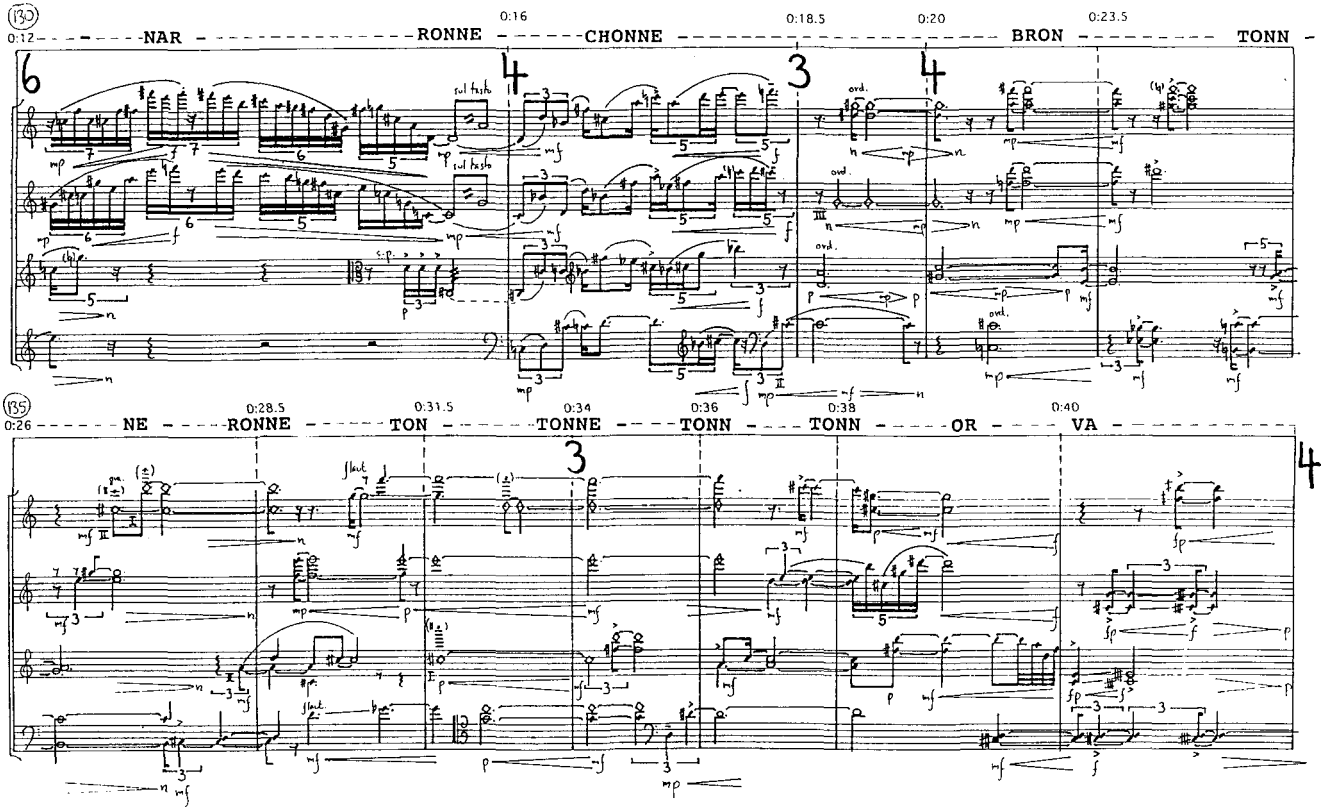


Figure 1: *Joyce Paraphrases*, p. 11.

Figure 2: *Joyce Paraphrases,* p. 14.



It is again a question of reflection upon the material, and finding the parameters for its suitable disposition.

* * *

We might not be able to step outside of time but we can alter our perception of it. I encountered an example of this at a certain moment at the Computer Music Center when after a twenty-minute calculation time the SGI machine produced a slowed-down, high-resolution version of a particle from my 100-letter word, the tripthong

. . . HOUNAW . . .

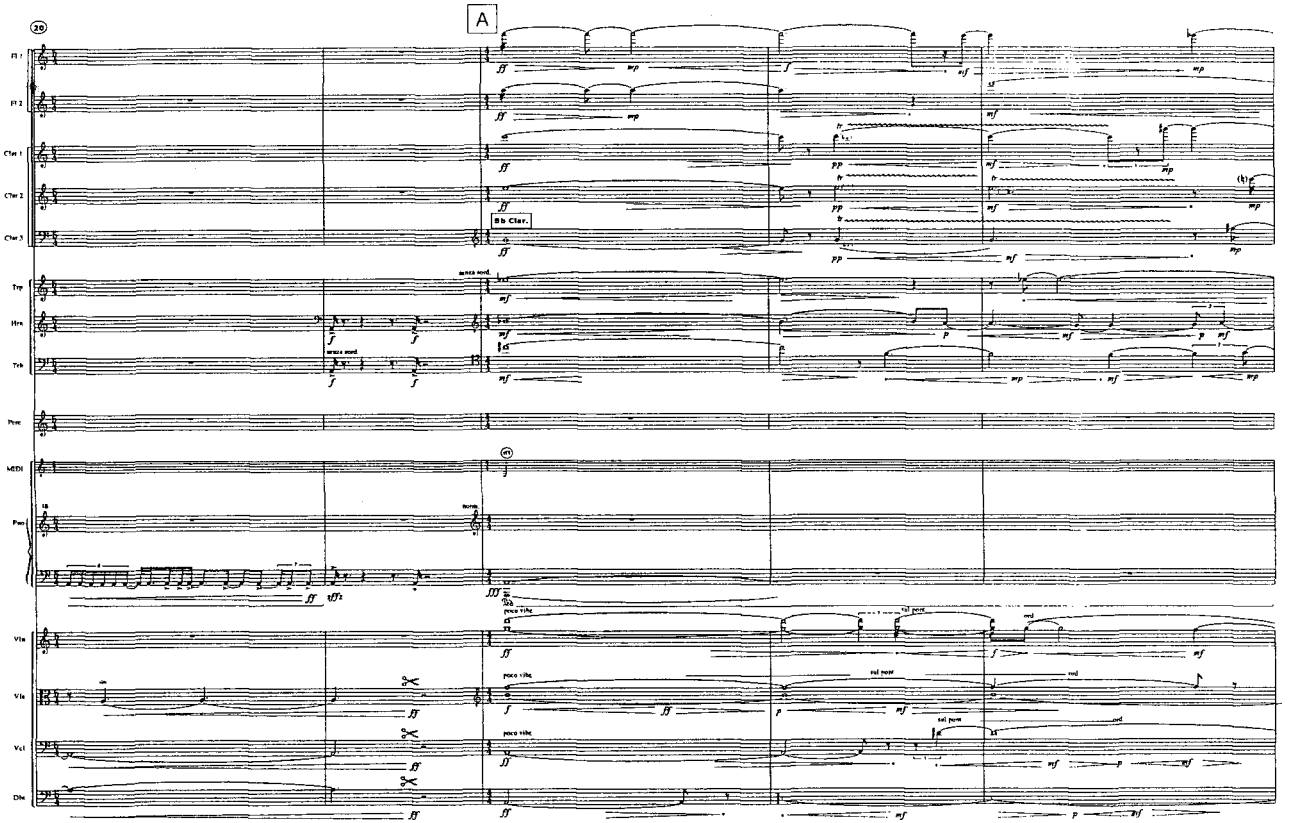
The plain succession of syllables had turned into a dramatically transforming soundscape, with rich and sonorous color changes in the vowel slides.

I made use of a similar, if simpler, process in my recent piece *Phantom Islands,* for fourteen instruments and electronics. In one particular passage the instrumental lines trace the evolution and expiration of partials heard in a slowed-down decay of a Bösendorfer piano's A (three octaves below middle C) struck *fortissimo.* It is like looking at a spectrum with a special microscope that not only magnifies space but also time. During the performance of this piece, the computer plays back a resynthesis of the piano's slowed-down A while the instruments trace particular fields of partials, "highlighting" them as if a spotlight were moving through the strata of the spectrum (see fig. 3).

Phantom Islands is a kind of double concerto for an ensemble of instruments and electronics in which the real instruments concertize with their virtual electronic counterparts. Each instrument in the ensemble successively confronts its electronic mirror image, reflected, however, with a degree of distortion that is analogous to the effect of a concave or convex mirror. Hence, a phantom sound might be an electronically magnified or highly compressed acoustic reflection of its source instrument. The encounters take place in various forms that are determined primarily by timbral considerations and enhanced by sections of tempered tuning that contrast with others that use quarter- and microtones. Each encounter gradually coagulates to form some type of firm, tangible clustering of musical events and figurations—a static "island"—that subsequently vanishes as quickly as it had appeared, within the "sea" of continuous transition that defines the overall structure of the piece.

Events that are initially perceived as separate from each other, but then gradually accumulate to become a unified, static entity—this process appears in varied forms in many of my pieces and might go back to an experience that I had in the Cathedral of Cologne. As had happened to me before in this vast space, my perception of time was transformed. After a

Figure 3: *Phantom Islands,* mm. 20–32.



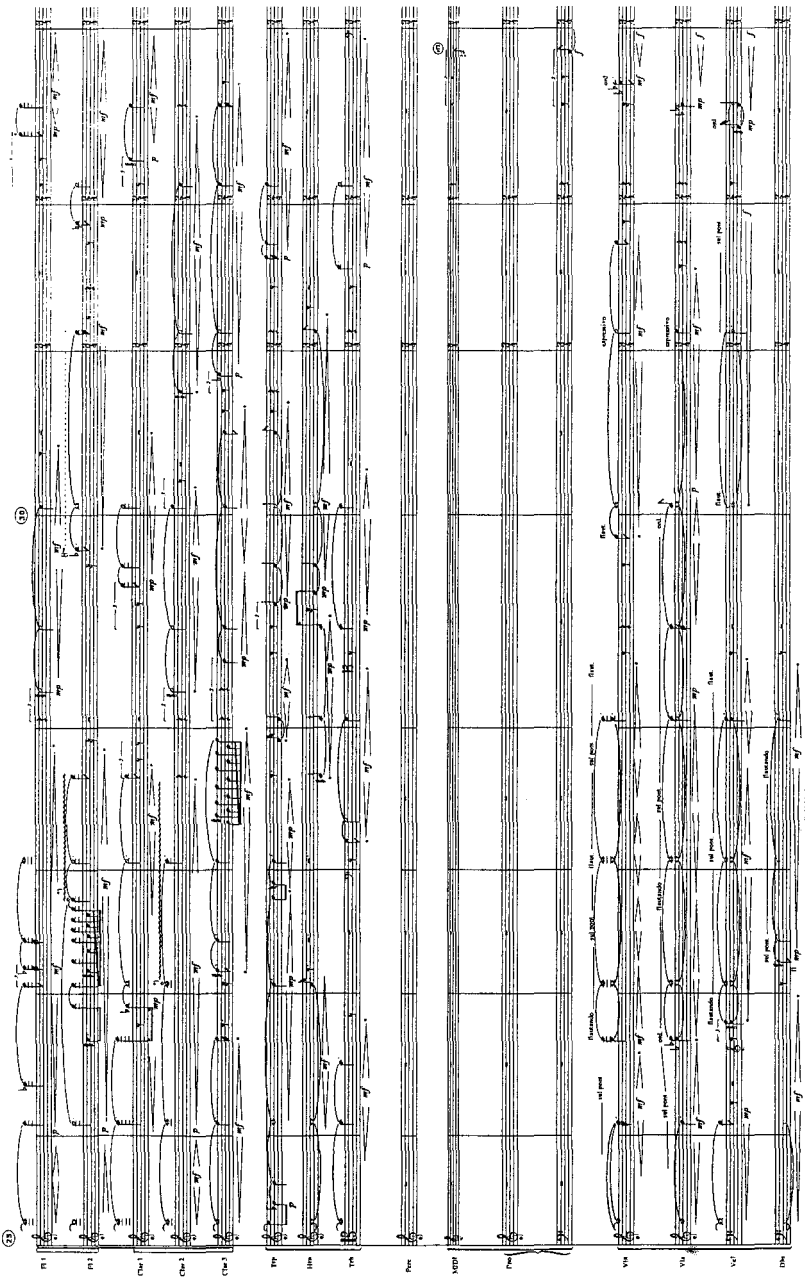


Figure 3 (cont.)

period of quiet sitting, the sounds of the hundreds of people that pass through this cathedral seemed to gather, cluster, and merge to form a static block of sound in which details became recursive, and hence ceased to be discernible as such. The entire cathedral strives skywards—the windows, columns, triptychs in the side-chapels, the statues. Even the altar has its own roof that points toward the firmament. No horizontal plane is left undisturbed, everything is pulled upwards, all lines converge in the center stone above the altar, the highest point of the church interior. It seems that one dimension of space becomes absolute—the vertical continuity of the cathedral. As my eyes followed the lines of the columns, upward to their resolution in the cross-arches of the ceiling, the periodicity of the sounds around me lost its measuring-function. It became unclear whether ten seconds or ten minutes had passed between two acoustic events. With my mind fixated on nothing but the vertical dimension of space and the continuum of sound, I briefly felt as if I had left the confines of Euclidean space and had entered the realm of sound space.

I have often thought of the implications of this experience and of how to let it influence the architecture of my music. One simple example can be found in the use of canonic lines at the opening of my piece *Aqua Vit* (1998), for eight instruments. Each of the four voices (piccolo, oboe, E♭-clarinet, violin) enters with the same melodic configuration, displaced by two or three beats. Through the frequent repetition of the "axis pitch" C♯ the overall result is not heard as a canon but rather as a continuous series of pulsations that periodically travel through the four strata. The individuality, the detail of each line is gradually absorbed into a compound of impulses. Further down, this is transformed into a static yet internally fluctuating cluster, echoing each added pitch within itself and changing color with each reflection (see fig. 4).

Another example shows a static, repeated element contrasted with various "events" that accumulate around it and thus persistently change its context. The passage is from my Trio (1998), for accordion, cello, and prepared piano. Again, as in the previous example, an "axis pitch"—an F♯—is in the foreground as a type of ostinato, constantly passed around from voice to voice (see fig. 5). The sporadic events are eventually revealed as having been precursors of the moment of stasis: harmonically speaking, they are related to the spectrum of the lowest D on the accordion (D1), which enters with its lower partials doubled by the piano and the cello in m. 67 (see fig. 6).

III. *Infinite is nature's smallest part.*

The Hegelian notion of progressive aesthetic material determined and shaped by advancing history first attracted me during my studies at the

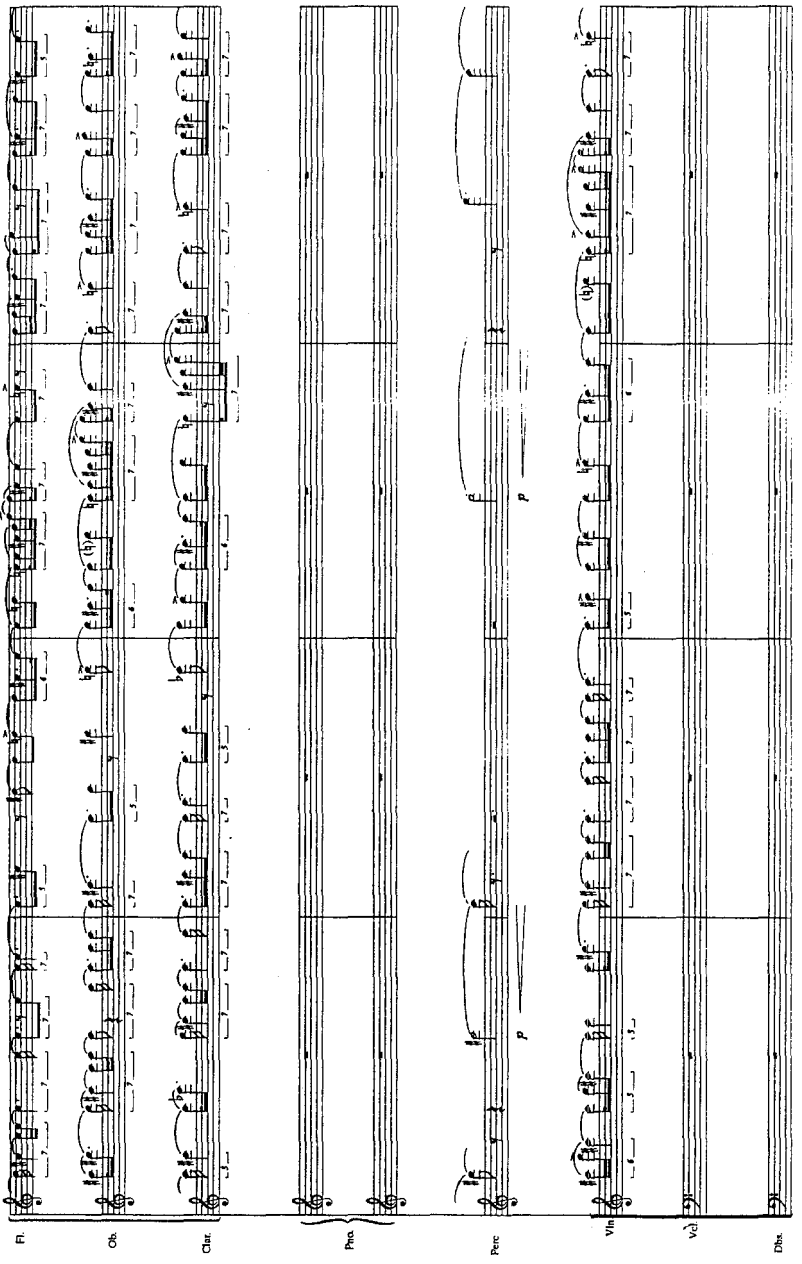


Figure 4: *Aqua Vit*, mm. 5–8.

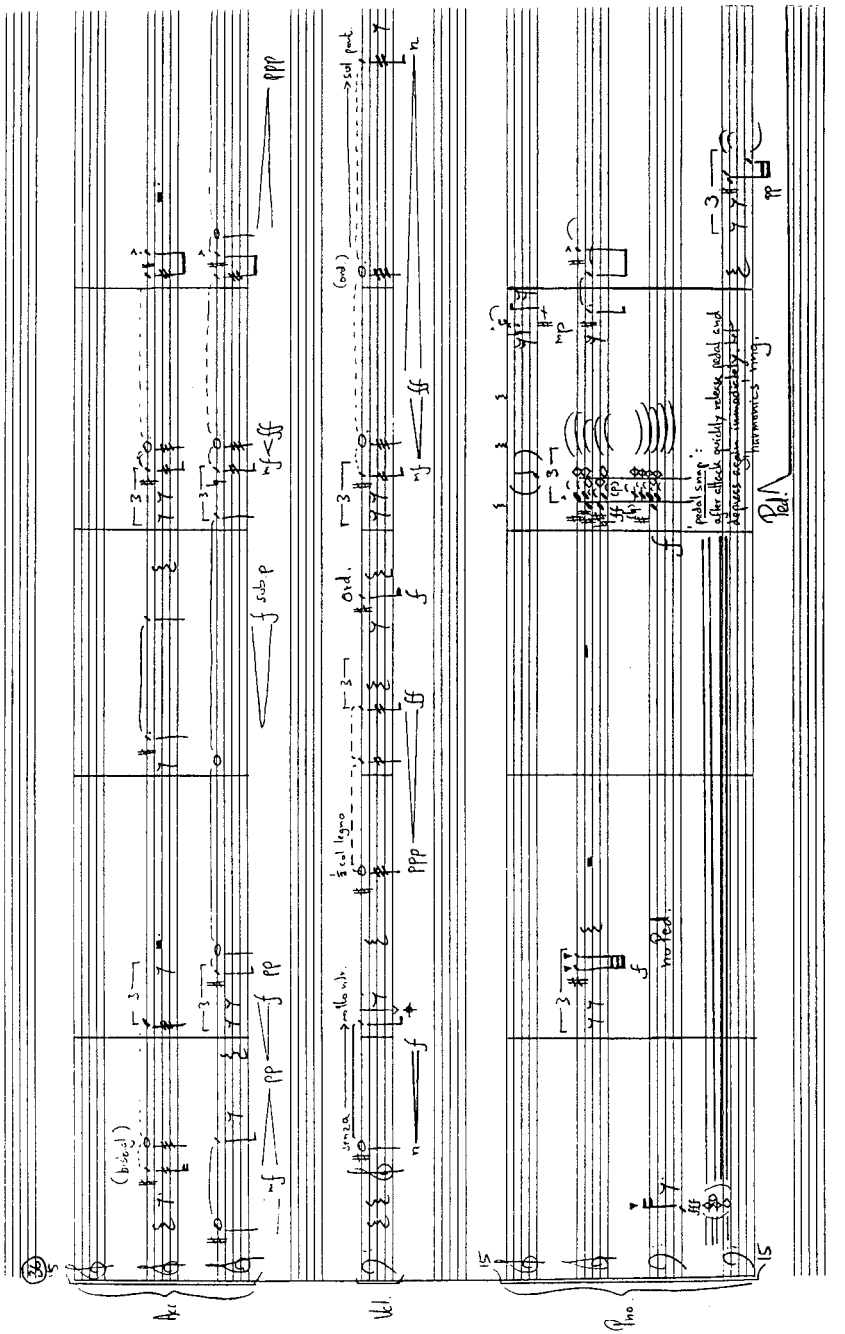


Figure 5: Trio, mm. 36–46.

Figure 5 (cont.)

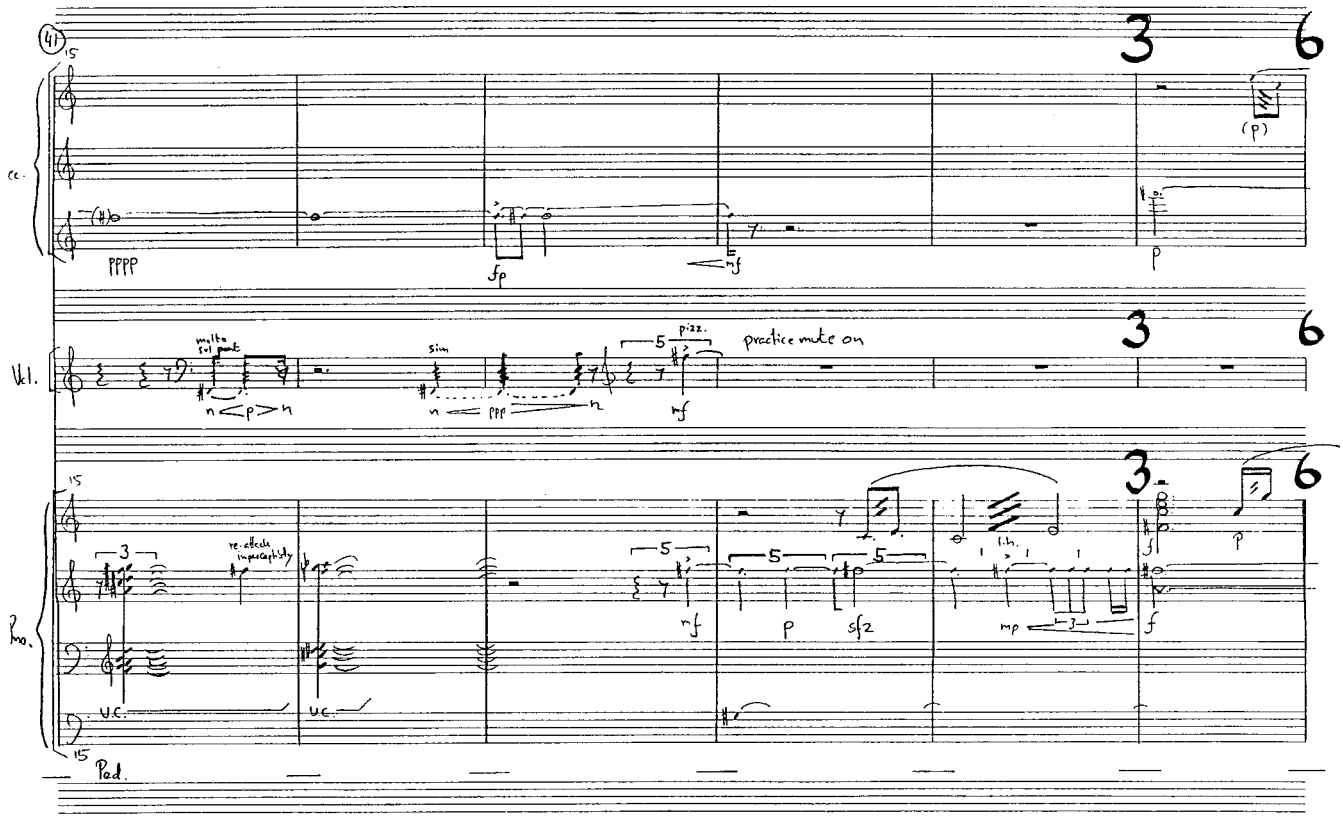
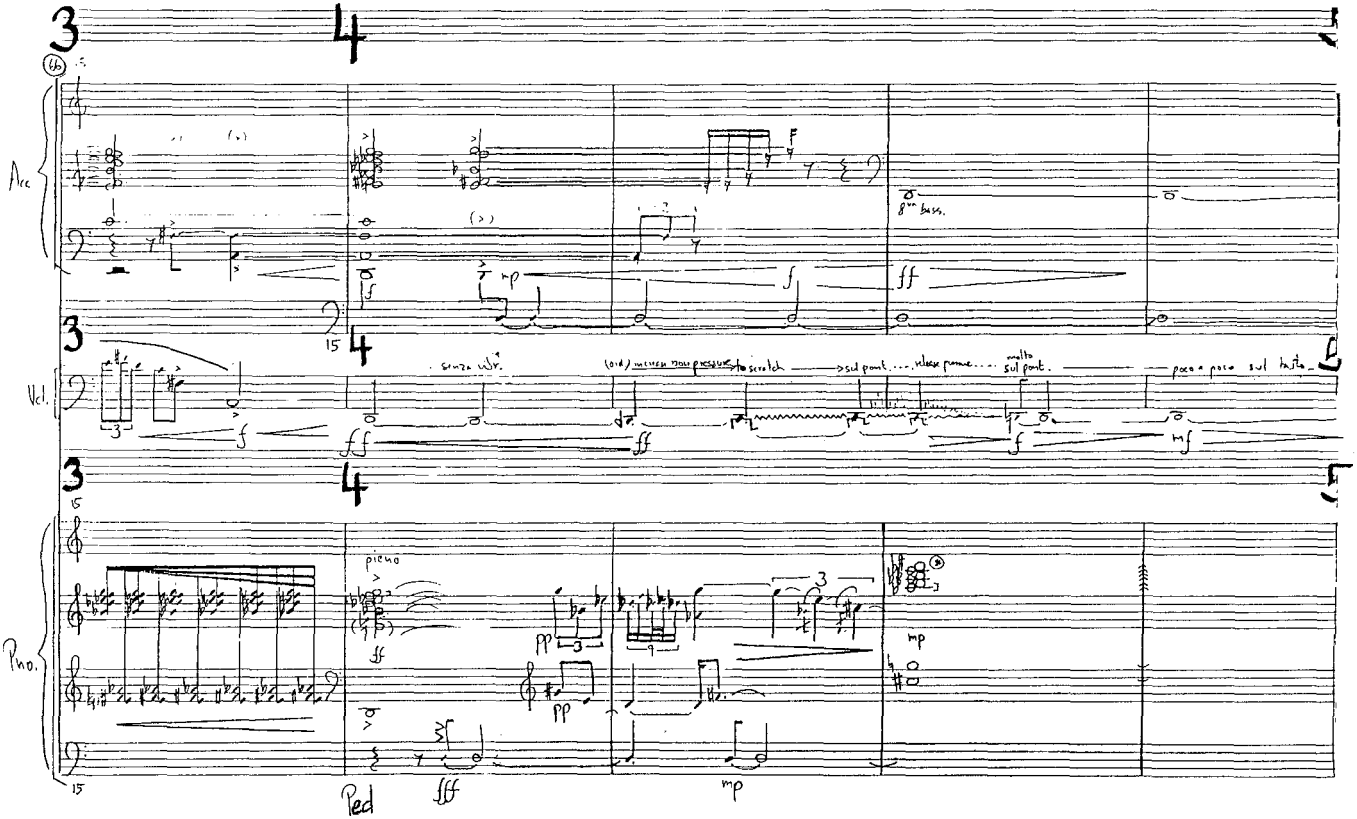


Figure 6: Trio, mm. 66–70.



University of Bonn. Reading Adorno's works, in particular his *Philosophy of Modern Music,* confronted me with the idea of an objectifiable material that, aesthetically and philosophically, lies in the current of social conditions. Suspended in the dialectic of construction and expression, this material is supposed to manifest itself as the "integral law of structure," which must be obeyed if "objective consequence" *(Sachlichkeit)* is to be achieved in musical composition. It is fair to say that the legacy of Adorno and much of the Frankfurt School is still influential in the German discourse of New Music, and lives on in various mutations (e.g., the work of Heinz-Klaus Metzger, Mathias Spahlinger, or Helmut Lachenmann).

Today I see many things differently, but I still have respect for the stringency of thought and the many perceptive analyses that observers like Adorno, Walter Benjamin, and Siegfried Krakauer expressed at a very early point. Many of their observations correspond to my own perceptions of music and society, although I do not believe anymore in a singular progressive "tendency," "level," or "disposition" of the historical material in the present, a material that, as such, exists outside of the composer's mind. The enormous influx of non-Western music and the course of advancements in technology have diversified this perhaps formerly more localizable and centered aesthetic force. Yet, given this dazzling variety, it might still be productive to contemplate the notion of a collective material. Since "the essence of a musical work is at once its genesis, its organization, and the way it is perceived" (J.-J. Nattiez), a composer should be acutely aware of the connotations that many harmonic, melodic, and rhythmic configurations carry as a result of constant association with a particular stylistic source. Certain harmonic progressions or recurrent rhythms can immediately and powerfully evoke highly formulaic types of music such as certain forms of Classical or Romantic music, pop, New Age, or jazz. In other words, in spite of the current diversity, there is a kind of musical *lingua franca* of musical configurations that are carriers of conventional, culturally encoded meanings. During the genesis of a new musical work these configurations can come into play (i.e., they could significantly determine the formal organization and, eventually, the perception of the work). For the composer, having a broad knowledge of the cultural imprints that these musical configurations might carry is the basis of this kind of deliberate reflection upon the material.

In this sense, music—composed as it is in an age of its unprecedented availability—is not epistemologically weak at all. It is utopian to assume that the average open-minded listener will be able to distance him- or herself from referential implications when hearing them at work in a new piece, and will instead merely follow the unfolding of its unique structure. Luigi Nono, for instance, saw himself writing for a listener who was not

only open-minded and curious but also ready to "renew" his hearing with every piece. But as much as this would be desirable it is indeed utopian since it ignores two common tendencies in the perception of new music that are detrimental to unbiased listening. Their extremes are what I would call taxonomic listening, in which music is merely broken down into—and accepted as—a more-or-less continuous sequence of familiar templates, perhaps occasionally mediated by passages of category "unknown"; and atrophied listening, in which the ear has become largely indifferent to musical sound *per se,* perhaps due to the ceaseless and casual inundation of musical information that is a basic feature of an omnipresent commercial culture.

For me, the act of composition provides an opportunity to break through the walls of both taxonomic and atrophied listening. The composer's subjective relationship to the object of choice (which is a big deal in modern aesthetics) should be defined by the avoidance of clichés. The more a new work shows the avoidance of preencoded musical configurations and compositional strategy, the more I perceive this work as having a life of its own. I often feel that the frequent use of familiar configurations in contemporary composition has the effect of affirmation, if not acclamation, of something that hardly needs it since it is already present in our listening conscience anyway. This is not an intellectual but an instinctive response. As a listener I feel unsatisfied because I have too many *déjà vu* experiences, and as a listening composer I feel unsatisfied with the apparent lack of reflection upon the lingua franca of the musical material, which in many cases merely displays the composer's self-indulgence and lack of originality.

The view frequently inscribed in the postmodern perspective—that one simply can't suspend one's own personal preferences in the act of composition—seems to me to be too often an excuse for giving up the arduous quest for originality. Eclecticism and the use of the tried and true is easier and more predictable in its effect than the "risky" business of creating new musical structures. But music can be *too* easy on the ears! A composer should be self-critical and cautious when considering the connotations of his musical material. Doing what makes merely the composer feel good rarely gives much enjoyment to others in producing work of common interest; and while music without emotions is barren, music that is made only by emotion and careless choice, and without a critical distancing from the subjective and a careful scanning of the predisposed aspects within the musical material, is often likely to be somewhat unsatisfying. To state it in the extreme: In the reflection upon the musical material, "What I know is more important than what I feel" (Martha Nussbaum).

Today, reflection upon the material can and must go beyond the lingua franca of culturally encoded musical cliché. Ideally, musical experience

should constantly be checked for spots where formulas of listening are applied and structures of perception have hardened or become passive. The reflection should be extended to include the anatomy and properties of sound itself. When considering how many of our listening habits are based on recognizing various formulaic structures or compound objects, it becomes clear that we are dealing with preformed categories of sound perception that are based either on our modes of acoustic orientation, on the characteristics of speech production and language mechanisms, or on cultural practices. There are niches, cracks, and seams to be found in the known sounds and sound organizations. Here I perceive the space for new music to flow. In his *Traité des objets musicaux,* Pierre Schaeffer discusses a variant of listening—"reduced hearing"—in which the ear is trained to "hear out" and isolate the properties of each sound and the most prominent of its constituting elements. Since this, however, is not always practicably achievable with our plain ears, the use of computers in isolating (for instance) the partials of a given spectrum and making them sequentially or selectively audible presents a new dimension of listening, through the increase of the "resolution" of a given sound and the possibility of analyzing and manipulating its discrete components.

I believe one of serialism's problems was its relative indifference to the character of intervals, harmony, and harmonic progression. This indifference is contrary to the idea of being sensitive to the properties of sound itself. At times during the process of composition, there is a moment where a piece begins to develop a life of its own. The selected material is not just "there" anymore; the pitches and rhythms seem to reveal tendencies of their own. At a certain moment, they "push back," as Morton Feldman once said, and resist being merely projected onto the grid of an abstractly preconceived, precompositional model, plan, or system.

As striking as this moment feels—if it happens—it is important to keep control of the compositional process since it is easy to mistake such tendencies with the residue of hidden but persistent conventions. The decisions a composer makes at this point are perhaps the most important. They will usually carry more responsibility for the outcome of the piece than those made during the precompositional phase or the large-scale conception of the piece.

The deliberate avoidance of predisposed musical material—at least as much as possible—through composition based on the properties of sound itself might encourage the mode of listening suggested in the following passage:

> I would ask [Albertine] to give me a little music. I remained in bed, and she would go and sit down at the end of the room before the

pianola, between the two bookcases. She chose pieces which were either quite new or which she had played to me only once or twice, for, beginning to know me better, she was aware that I liked to fix my thoughts only upon what was still obscure to me, and to be able, in the course of these successive renderings, thanks to the increasing but, alas, distorting and alien light of my intellect, to link one with another the fragmentary and interrupted lines of the structure which at first had been hidden in the mist. She knew and, I think, understood the joy that my mind derived, at these first hearings, from the task of modelling a still shapeless nebula.

—Marcel Proust, *Remembrance of Things Past,* vol. 3: *The Captive* (trans. by Moncrieff, Kilmartin, and Mayor, 1981, p. 260)

Painting, Composing, and Fear of the Dark

By Melanie Schoenberg

It was not long ago that I realized just how useful visual art could be in the creation of a piece of music. It was originally through visual art that I first acquired the confidence to nurture my instincts, wrong though they may have seemed in the beginning. What follows is a somewhat detailed discussion of how this came about.

Most visual artists who compare their earliest sketches with later ones find the older sketches to be timid and hesitant with respect to their bolder, more recent counterparts. What this translates into physically, in the case of either a simple pencil or charcoal drawing, is a lighter shade of gray and a thinner texture in the earlier sketches and darker, more prominent strokes and a denser texture in the more recent drawings. This result is common in developing artists, and is only natural, for as one gains experience working with proportion, line, shape, contour, tone, pattern, and texture, one acquires the confidence to draw with conviction and, most importantly of all, with boldness (see fig. 1, a comparison of two works by Franz Marc, a German painter who was one of the leading members of the expressionist Der Blaue Reiter group, and one of my all-time favorite painters).

Of course, "darkness" does not always have to be literal darkness; it is simply a metaphoric way of describing the appearance of a sketch pad after one has confidently and craftily freed one's inner tendencies on the pad's surface. My inner tendencies first presented themselves under the alias of "mistakes," simply because that is what most would consider them to be. But boldness or "darkness" only came once I decided to embrace these mistakes, whatever they were—incidents that should have been repaired or erased because they didn't fit neatly within the conventional artistic confines that had been hardwired into my brain. Perhaps coloring outside of the lines in a coloring book would conventionally be considered a mistake. And if the "colorer" herself perceives it that way, then a slip out of the lines will indeed look like a veritable mistake because as soon as it is made the colorer regrets it, obsesses over it, regrets it even more, and then makes every attempt to suppress its presence so that it can be forgotten. All this ado occurs over a little mistake because an error such as this can be threatening: it has the potential to undermine the presentation of one's conventional technical goals, that is, everything that one has learned to work toward. What's more, this negative view of a mistake inevitably exposes itself on the page in the artist's effacing treatment of it, and it can

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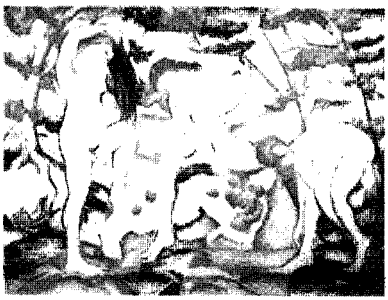
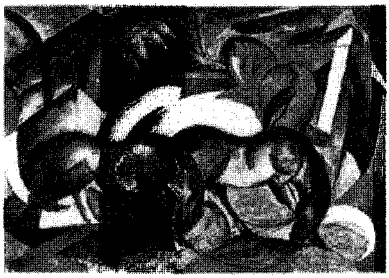
Figure 1: Comparison of two works by Franz Marc.



Franz Marc, Badende Frauen, 1910, Norton Simon Art Foundation



Franz Marc, Drei Pferde, 1912, Privatbesitz USA

potentially destroy the continuity of the work. But if a mistake such as this is not perceived by the artist as an error but rather as an idiosyncrasy, or a seemingly foreign element to potentially incorporate into one's normal artistic behavior and then to exploit, chances are that it will not reflect a mistake; it will instead reflect a new idea, a new possibility.

While many would dismiss and ignore their own artistic errors at first because they seem to be unexpected, mere chance accidents, in most cases such gifts, loaded with artistic possibility, usually represent much more than mere accidents. This is by no means a novel concept; it is an idea I borrowed and adapted slightly from Freud's writings:

> Every change in the customary attire, every little negligence, such as an unfastened button, every trace of exposure means to express something that the wearer of the apparel does not wish to say directly; usually he is entirely unconscious of it. . . . I cannot . . . refrain from showing . . . how closely an habitually accomplished symbolic action may be connected with the most intimate and important part of the life of a normal individual. (1938: 100)

About six years ago I became aware of a particular "mistake" that continued to recur in my visual art: I couldn't get enough of the dark. However, back then it really was literal darkness instead of an obscure technique waiting to be discovered and exploited. For example, the idea of finishing a work was very simple: a work was not finished until every square millimeter of white space had been filled and was as dense and dark as possible, provided that there still remained some lighter areas for contrast and definition. At first, shapes would be visibly clear and defined;

there were highlights and shadows. But that wasn't enough; there was always the possibility of adding more, of spilling more ink on the page. After a while, white highlights became dark gray or acquired a layer of black scribble, and dark gray areas accumulated more layers of patterns and shading until they were virtually black. The reason I saw this as a mistake is because I frequently wouldn't know when to stop with the darkness—it was so tempting to me that I often continued to the point of oversaturation. I would fall deeper and deeper into my cavity of darkness until I couldn't possibly add any more to the page because there was no room left for anything else (see fig. 2).

The time my tendency to produce a densely covered canvas first emerged as something I should not try to fix but as something I should nurture was in conjunction with another "mistake" I was frequently making at the time with paints. This other mistake, however, seemed more like an honest chance error, a clumsy slip of the hand that for some reason continued to occur. What happened was this: I always painted on an easel, so my canvas stood vertically upright. Often I would mix the paints too thin by adding too much water, and because the canvas was propped up on the easel, gravity would cause much of the pigment and moisture in a newly painted stroke to gather along the bottom of the stroke. Eventually, after a number of seconds, enough of this pigment and moisture would accumulate until their combined weight and the force of gravity would cause a drip to form that would challenge the boundary line of the stroke. The drip would eventually burst through the boundary, and then gracefully descend the length of the canvas, leaving traces of pigment along its journey. Looking back on this, it was, in a sense, a gorgeous physical realization of the process of becoming an artist, and that is part of what made it so appealing. These stunning drips caused me to inadvertently color outside of the lines.

Of course they weren't always so stunning, nor were they an original idea: although I didn't know it then, allowing these drips to form was a technique first used during World War II, a kind of painterly manifestation of the gore and bloodshed prevalent during the time. Unaware of this, naturally my initial reaction to these occasional accidental drips was to dry them up as quickly as possible before they could make their presence known to others. Only after I had encountered these menacing drips more than a few times did it dawn on me that something—probably a combination of gravity, my mixing the paints with too much water and paint thinner, and something more—kept causing the drips to form and extend my strokes, and that they seemed to be overwhelmingly "natural" things that I should not bother to fight against because chances were I would inevitably lose.

Figure 2: Self-portrait, by Melanie Schoenberg, ink on paper, 1995.

So I began to embrace the drips, and eventually I took measures to purposefully cause them to form on the canvas (or paper in the case of ink wash; see fig. 3). I remembered back to another lesson I had learned from my junior high and high school art teacher, Marianne Hall: with enough repetition, anything, no matter how horrid-looking, would "work." Whenever one of us made what we considered to be an error and asked her for advice on how to obscure or get rid of it altogether, she would simply tell us, "Repeat it!"

I took her advice. Eventually drips were everywhere in my art; my work grew denser and darker with drips until it came again to the point where a work was only finished when there was no more room for another drip. In a sense, I felt I had acquired boldness; I had lost my fear of the dark through using this accidentally discovered drip technique.

Composing with Artistic Techniques

It is only through tracing my artistic development that I can try to understand what my own musical style might be. This could be because I haven't written much music, so my sample size at the moment is too small to be able to detect an ongoing musical trend. But if I combine my artwork with my music, my sample size increases and it becomes clear what I am trying to do, stylistically in any medium, whether conscious of it or not. Given my artistic leanings, my musical tendencies may not come as a surprise: I tend to layer, and with those layers I tend to oversaturate more often than not.

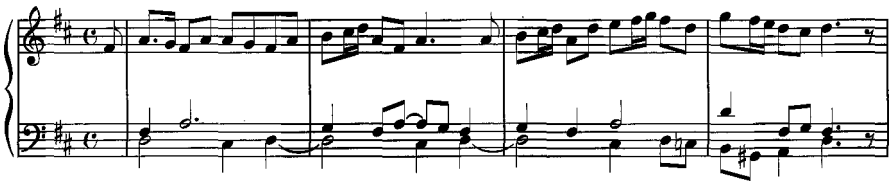
The inclination to supersaturate is most obvious in the way I compose my harmonies, which is in a sedimentary sort of fashion. The first thing I do when writing a piece is to come up with various chords. It doesn't take long, however, before these chords, whatever they may be, start to sound flat, and so I end up adding a few more pitches to them. In some cases these chords have up to six or seven pitches, but by the time I've finished writing the piece they sound as raw as major triads to me. So I often go back again and add a third layer of pitches to give the harmonies more depth. There is still much more room in the harmonic fabric of all my pieces for me to go back and add layers a fourth time, a fifth, even a tenth time. What holds me back is nothing more than my fear of the dark.

Nevertheless, my layering process is best illustrated in *Anthem,* a piece I recently finished in May 2000. The piece is based on an anthem—what I now call my "school song"—that I wrote for my formerly anthem-less high school when I was in the eleventh grade (see fig. 4).

Many of the harmonies in the more recent *Anthem* were formed by taking the harmonies from the school song, raising them a half step and superimposing them on themselves in their original key, a quarter note

Figure 3: *Aspen Trees,* by Melanie Schoenberg, ink wash, 2000.

Figure 4: High school anthem.



apart. For example, in figure 5 the clarinet, violin, and cello present the harmonic progression of my school song. The piano enters on the downbeat of m. 52 with the same harmonic pattern, only a half step higher. There is one note, however, that doesn't fit directly into this formula: the violin's A♯ in m. 52. This note was originally an A♮, filling in the D-major triad of the school song. But despite the fact that this D-major triad accounted for only three embedded pitches in a six-pitch chord, after a while it still managed to stick out rather blatantly to my ears, and caused the whole chord to sound flatter than it had to be. I became bored with the A♮ of the embedded D-major triad in m. 52 and so started to hear it as an A♯ instead, which would lead smoothly into the B in the next measure, creating another harmonic layer. Similarly, another pitch that doesn't fit into the equation is the flute's E♮ in m. 52. Like the A♯, the E (and that whole flute line, for that matter) was another sediment added on much later, whose purpose was to add more depth and thickness to the harmony and overall texture.

Figure 6 presents a similar and more obvious example of my layering system, in which the flute and clarinet play the melody of the high school song out of sync and in different keys. The strings provide the triads corresponding to the flute's melody, while the piano supports the clarinet's melody. In a sense, there are two completely separate but equally important tunes sounded simultaneously. One composer I showed this section to remarked that it might sound a bit too chaotic because there exists no hierarchy between the two melodies, so the ear might not know what line to extract and pay more attention to. Perhaps my friend was right, but this is exactly what I was aiming for: it seemed to work in my visual art, so why shouldn't it work in my music as well?

Another particularly layered area occurs towards the end of the piece (see fig. 7). In this area, the layers are differentiated by their character as well as by the harmonies they create. The cello's tritone in m. 84 is a later addition, attaching another coating to the harmony and to the texture.

Figure 5: *Anthem,* mm. 52–59.

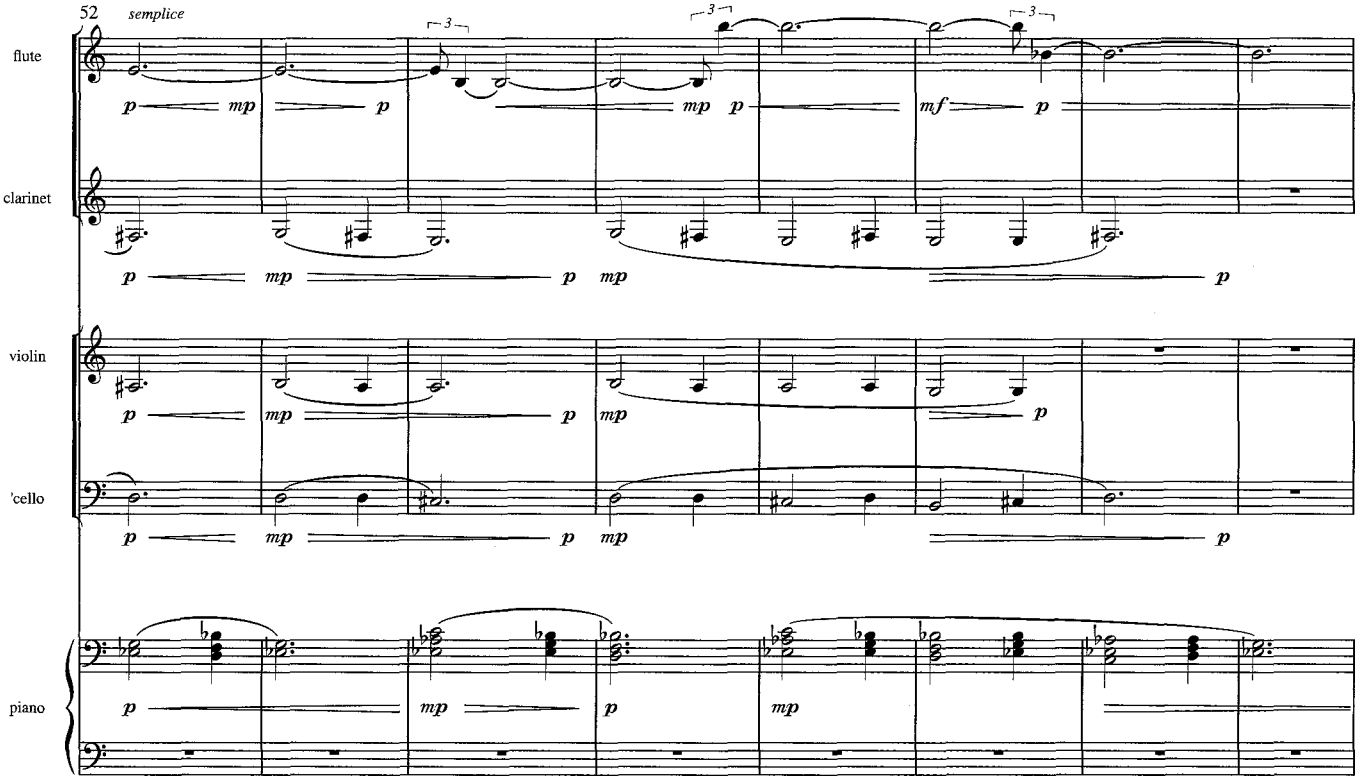


Figure 6: *Anthem,* mm. 69–72.

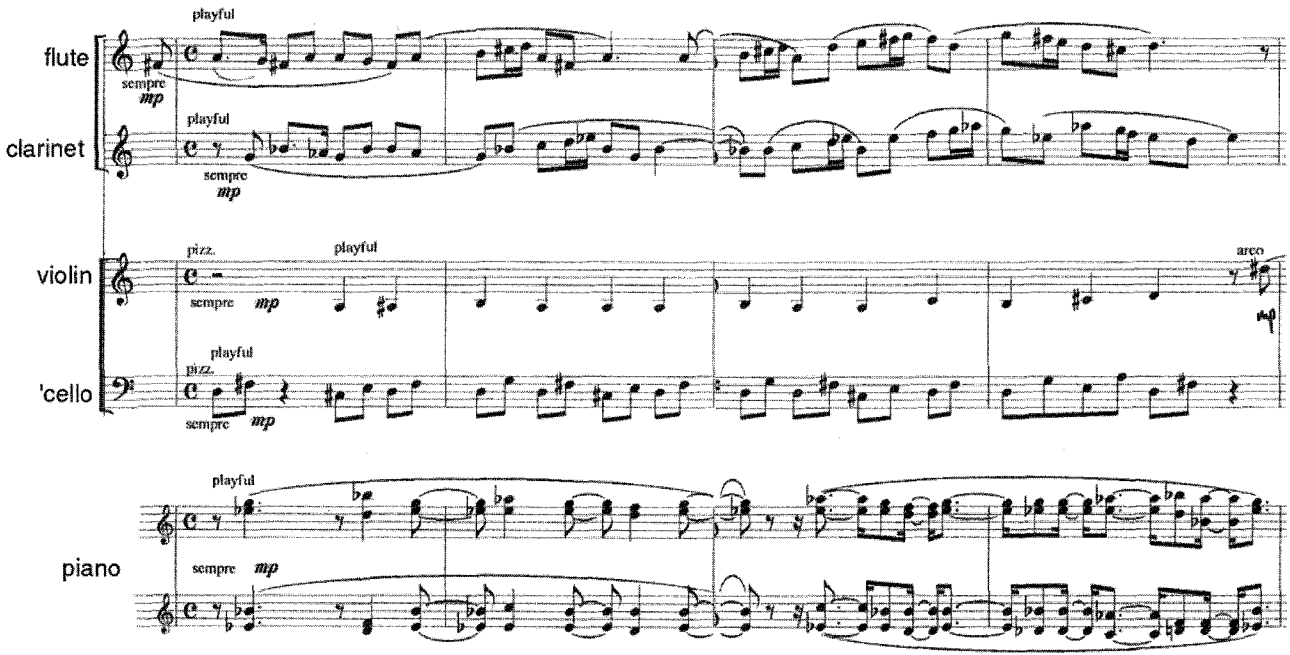
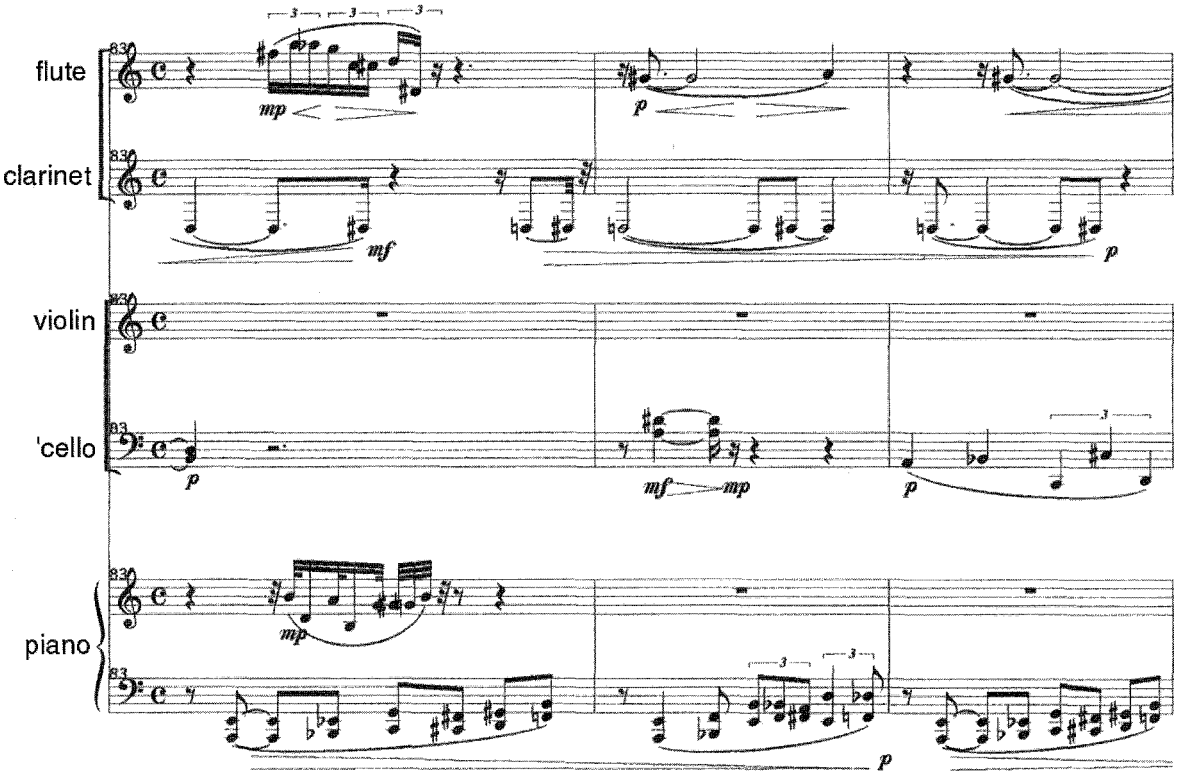


Figure 7: *Anthem,* mm. 83–85.



As was previously suggested, it is difficult to claim that all of these musical examples are supersaturated in their textures. While they do expose my tendency to layer, they also expose the fact that, musically, I still fear the dark and could layer a lot more than I have before—even approaching oversaturation. I am still a bit tentative and unsure of my compositional technique and so I don't feel the same sense of freedom that I do artistically to experiment with zeal and confidence and to know that, if needed, I would be able to "fix" any "mistake" I might make during an experimental trip ("fix" usually meaning repeat, and "mistake" usually representing something out of the musically ordinary, to be potentially repeated and incorporated into the work). My chords could still be much thicker and richer than they are in their final states. Eventually I would like them to be as thick and dense as the textures in my artwork.

The reason I generally value textures with many layers is simple: something with many strata usually presents more of a mental challenge to me than something in which nothing lies below the surface (the conceptual aside). There can exist a work (or even a person) with so many layers that its essence is obscured to unrecognizability, and often this type causes one to crave simplicity. But in the long run, the more layered a piece is, the more there is a pure, gritty musical fabric to digest and make sense of, the more harmony there is to process, and thus the more times one can hear the piece and discover something new in it each time. The same goes for art: while I find Malevich's *White on White* to be brilliant because it represents his arrival at the most extreme point of his artistic development, on a purely physical level (again, the conceptual aside), I derive greater enjoyment from a canvas with more on it, simply because visually there is more technique available to consider. Because of this, I find that the more levels there are in a piece, the more times I can be entertained by it. Perhaps all this has something to do with why I am drawn to layers in all my work.

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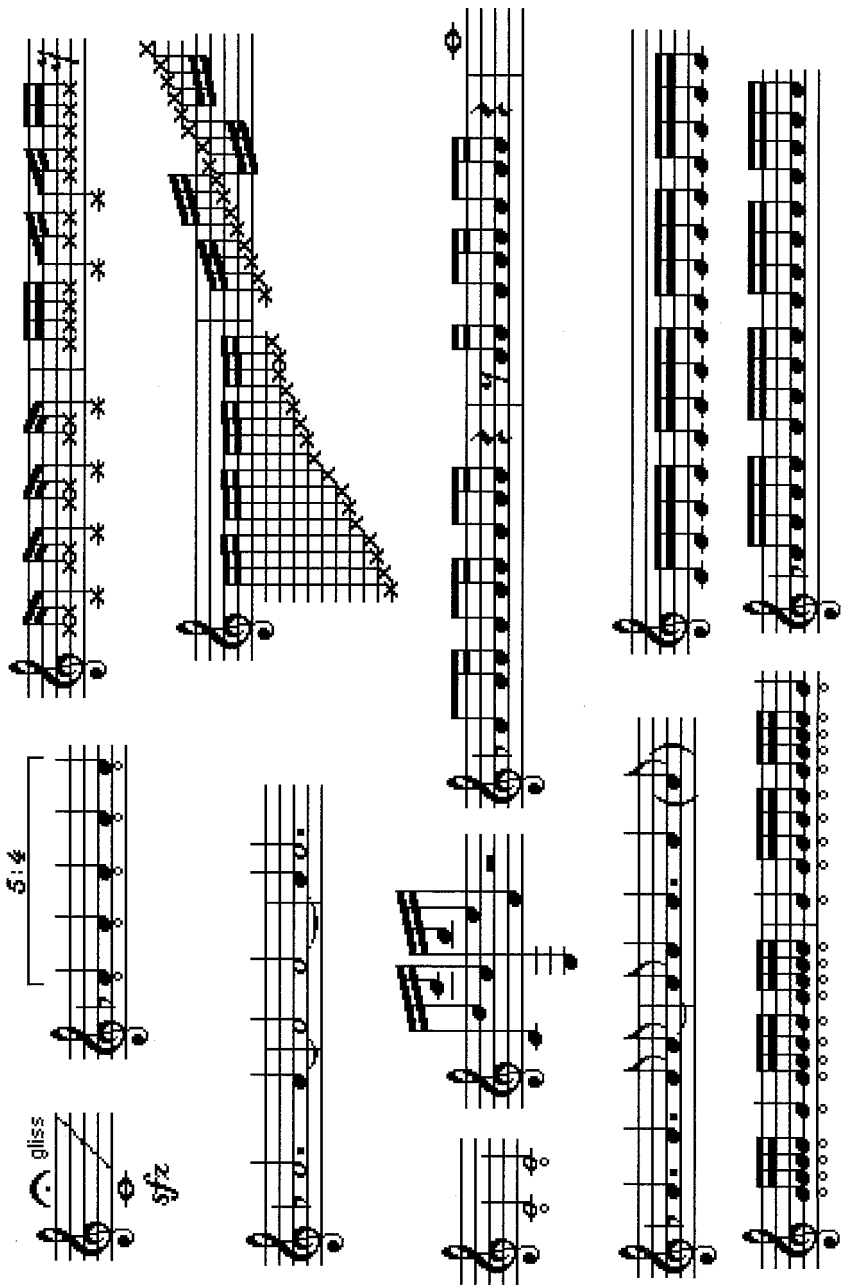
SyndaKit: An Algorithmic Approach

By Elliott Sharp

Composed in 1998 for my ensemble Orchestra Carbon, SyndaKit utilizes a collection of biological metaphors for group music-making. Not improvisation, SyndaKit's essence is a transformative groove consisting of 144 composed "Cores" and a set of simple rules for their use through processes of imitation, addition, recombination, transposition, and mutation based on the activities of flocking birds, African drum choirs, cellular automata, hunting packs, and recombinant amino acids.

The instruction set:

1. Rhythmic unisons are the prime objective.
2. Q=140. Any point in time may be the "one."
3. A Core may be used as an object on its own and interjected into the flux of the piece or it may be looped. Players may add one of their Cores to any other string of Cores that is looping to form a new loop. Players may not add their own given Cores together unless they are already attached to another Core.
4. Pitched Cores may be transposed to any octave. When imitating pitched Cores, players may transpose freely to any interval.
5. Players may "pop out" with short improvised statements at any time—then return to the flux—and players may enter or leave the flux at will. "Pop outs" may be looped by other players so that they may function as new Cores, allowing for mutation to be introduced.
6. Players use target pitches of C, G, A♭, and A as tendencies, but any pitches may be used in "pop outs" or transformations.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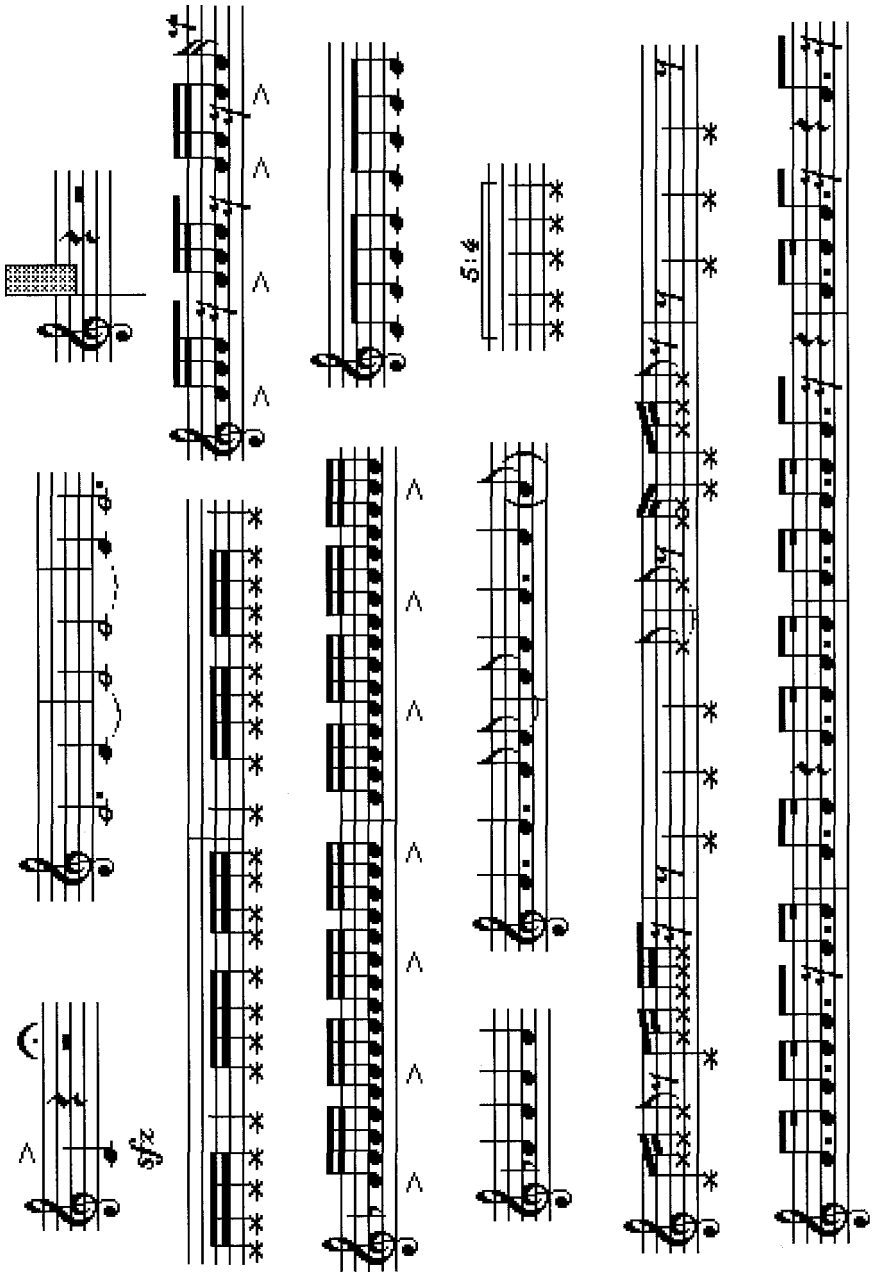
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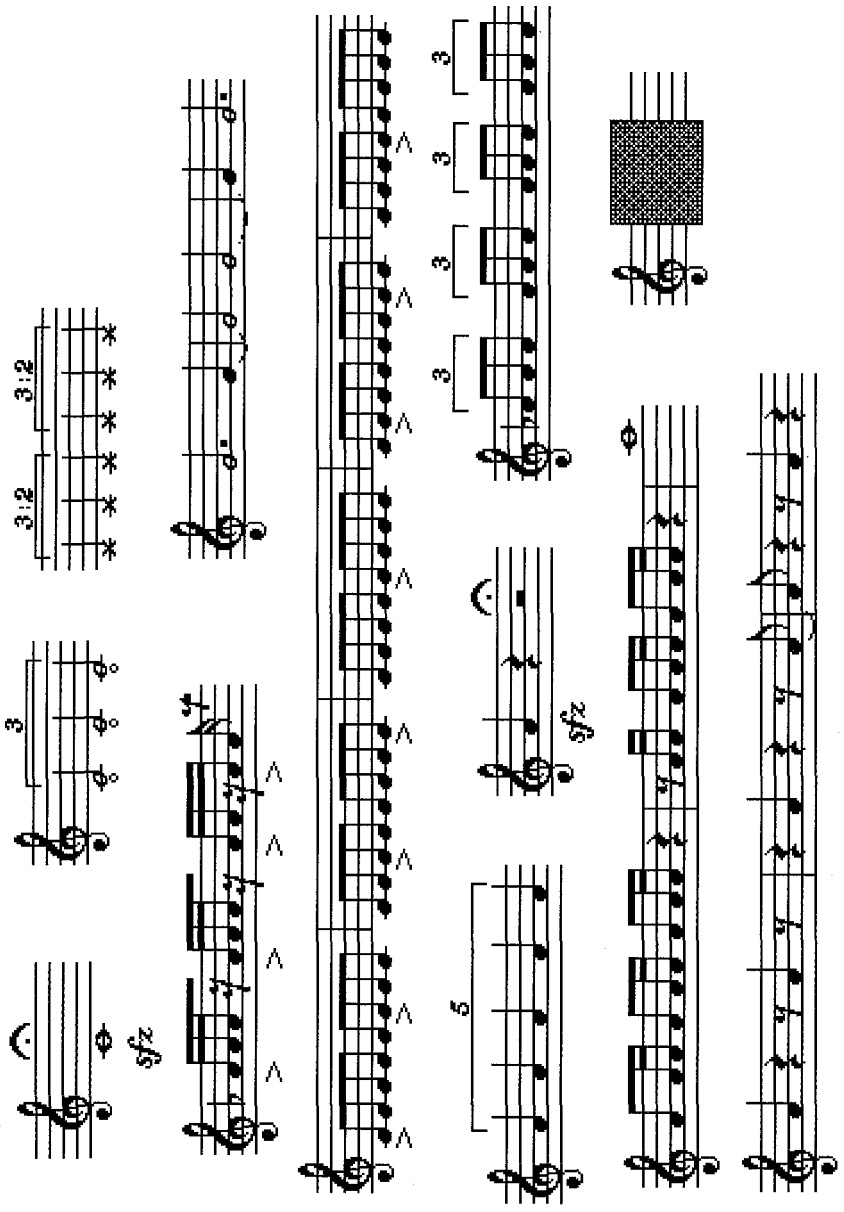
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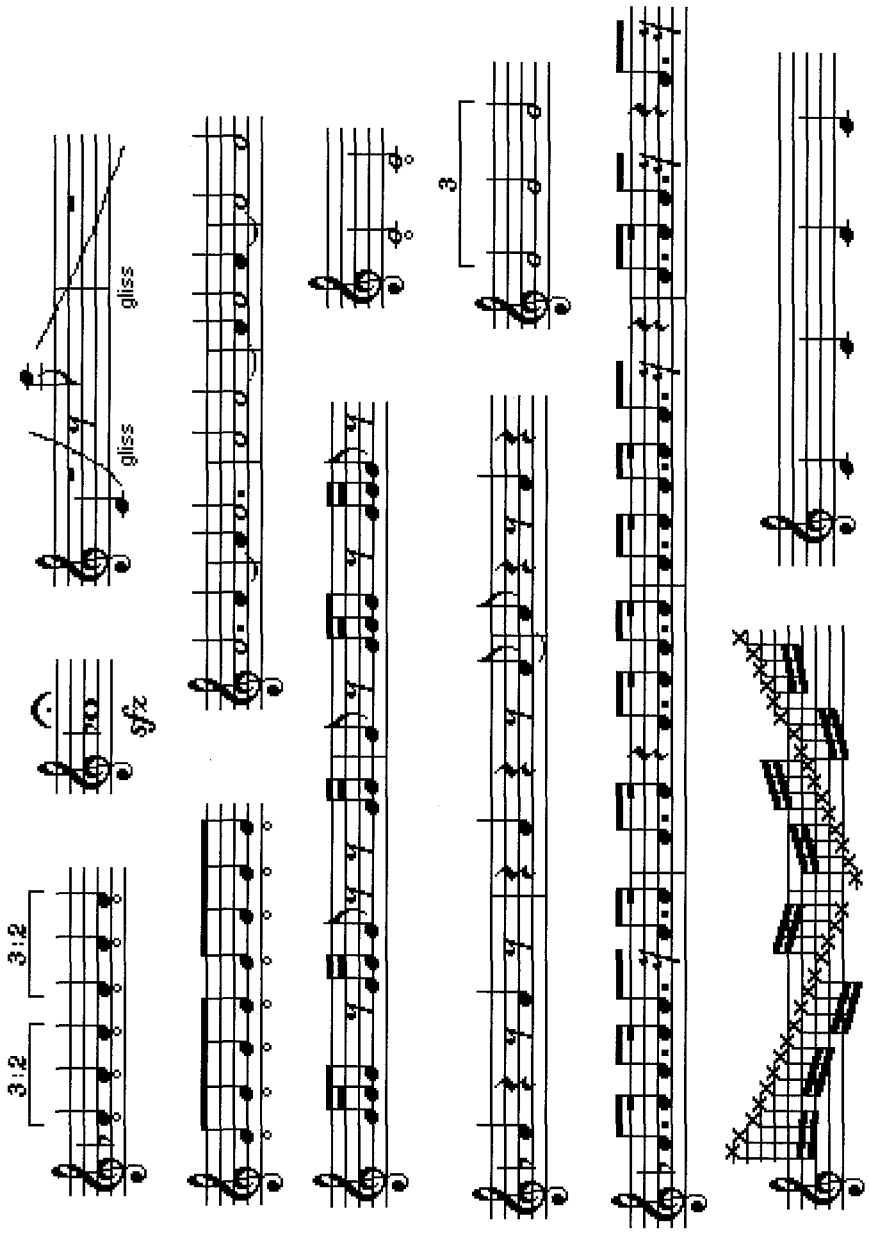
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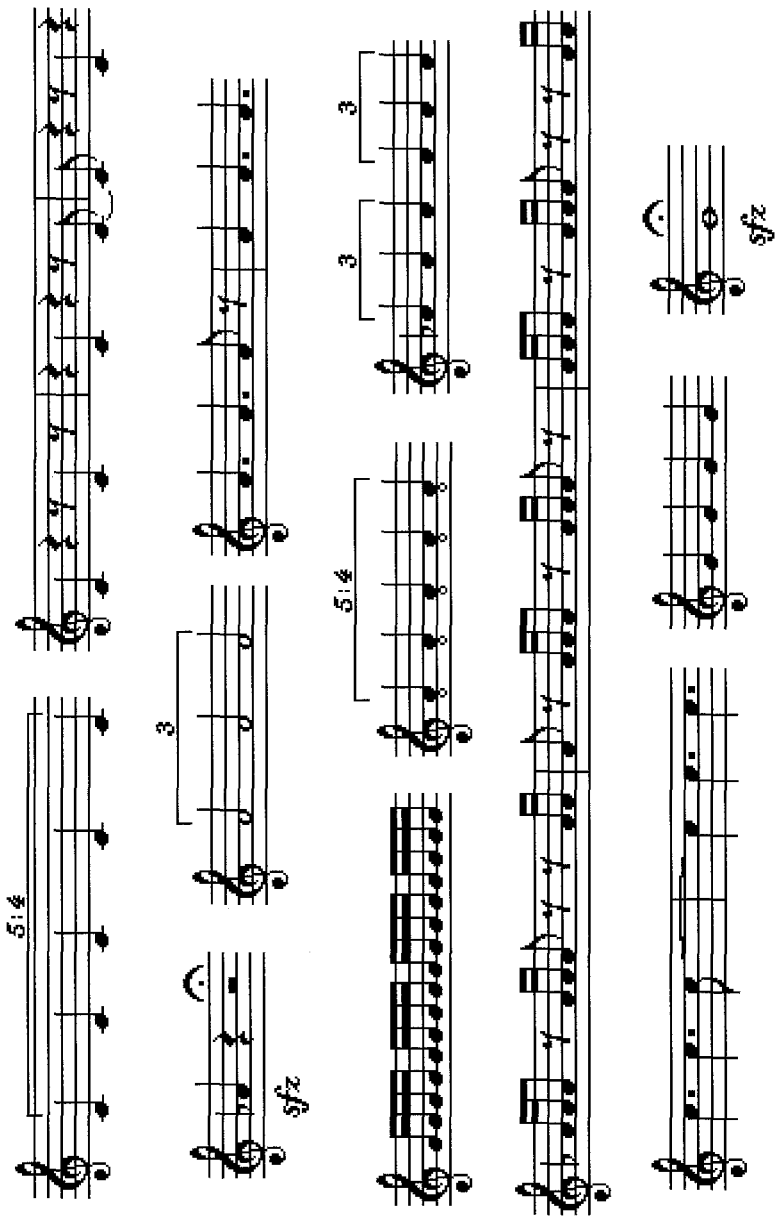
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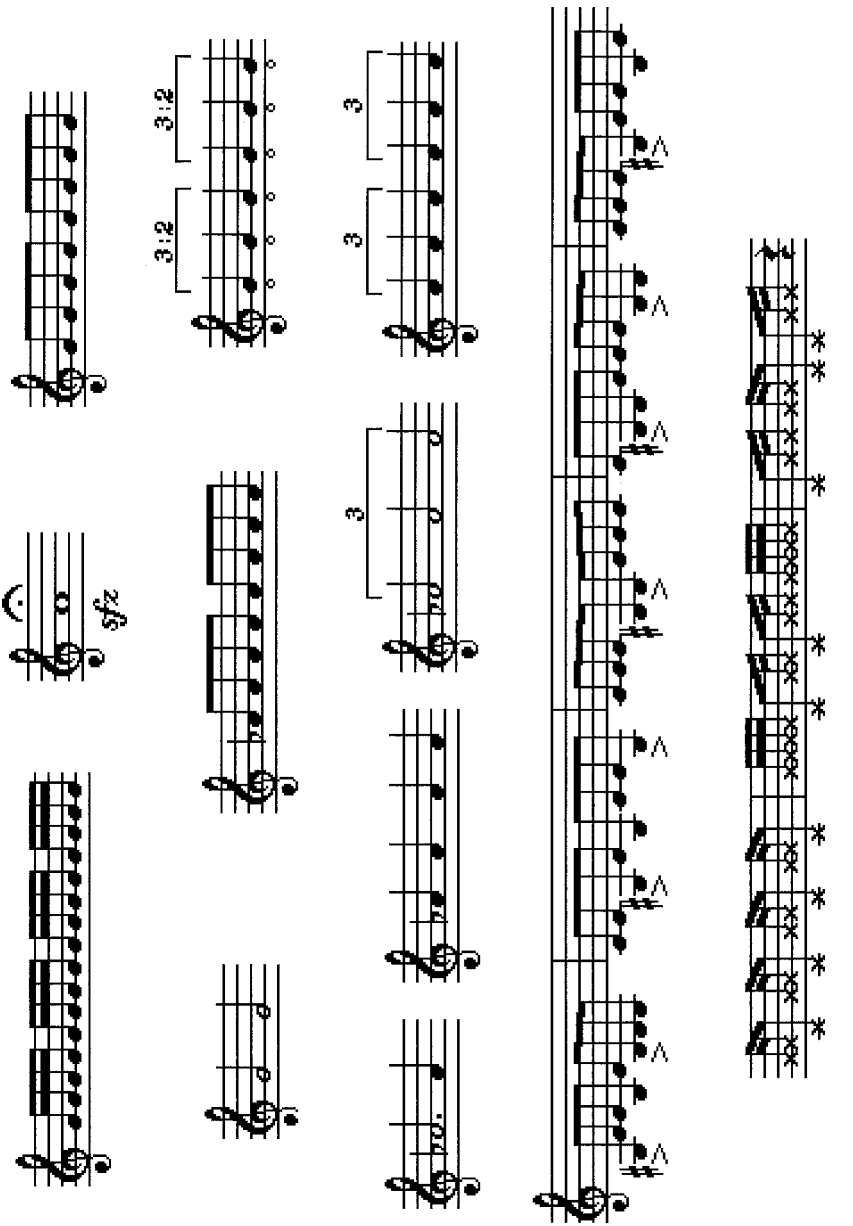
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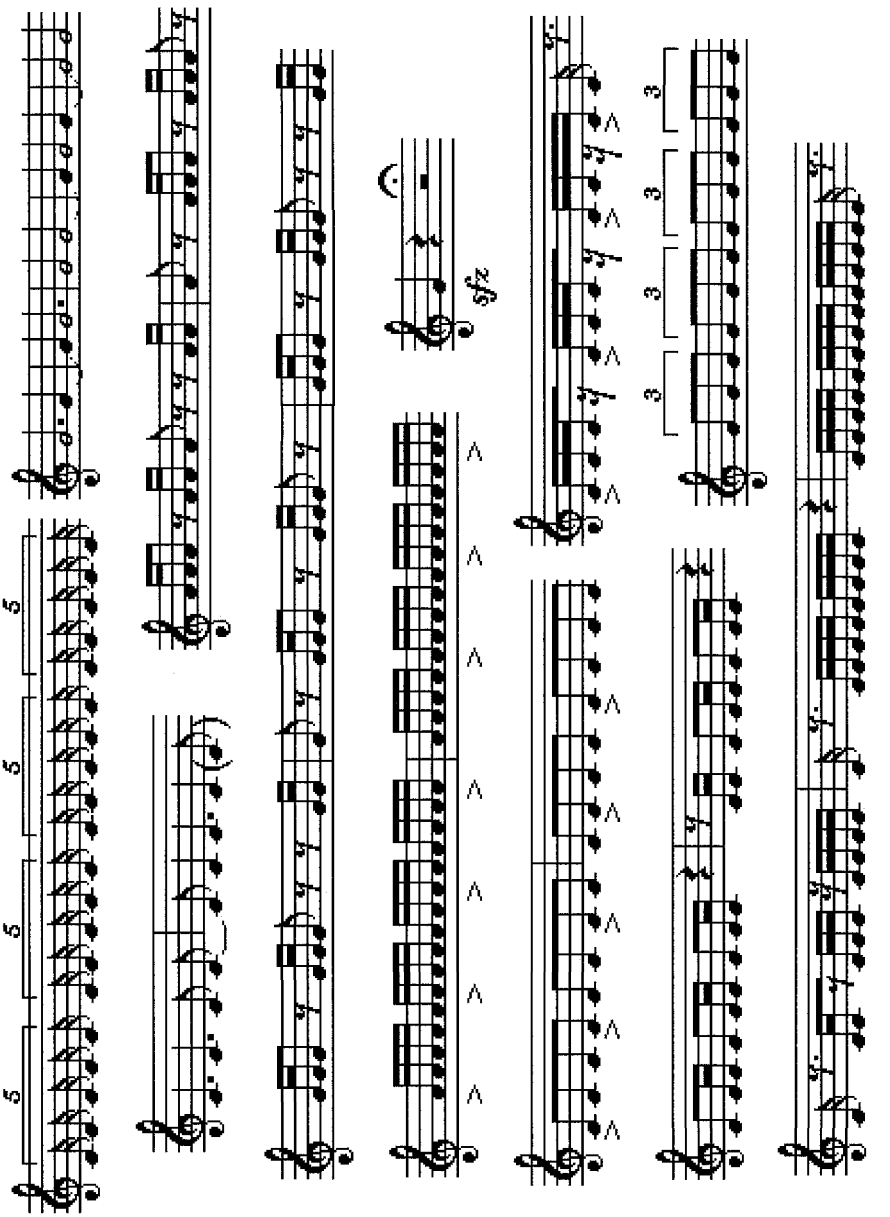
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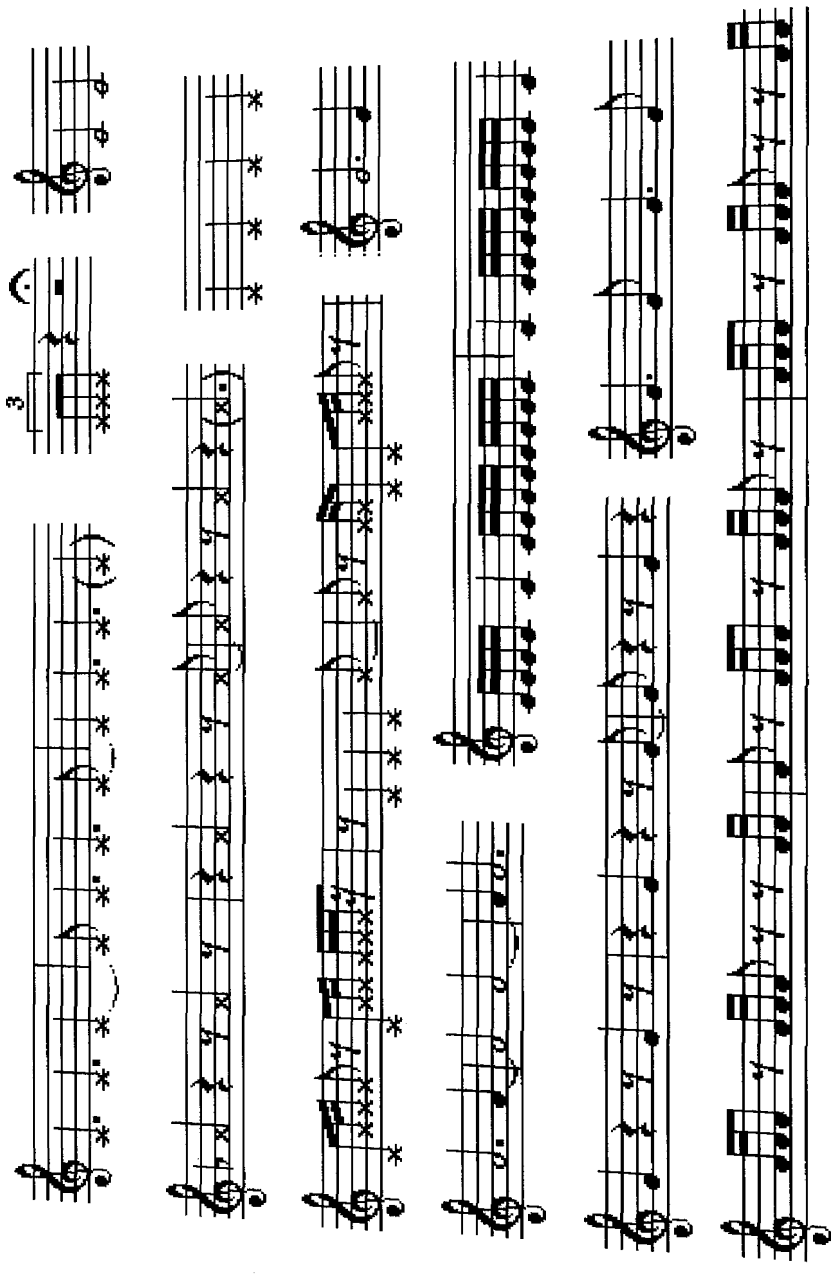

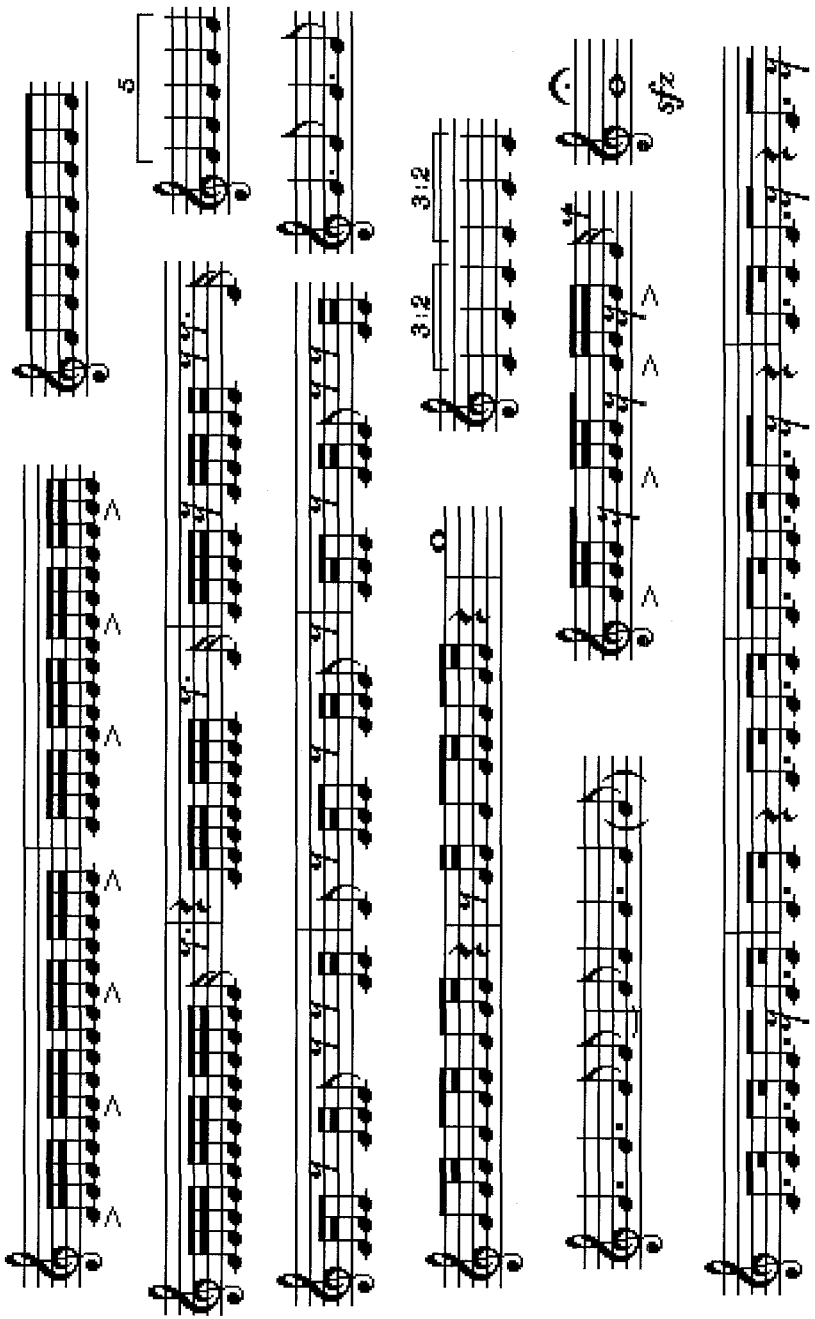
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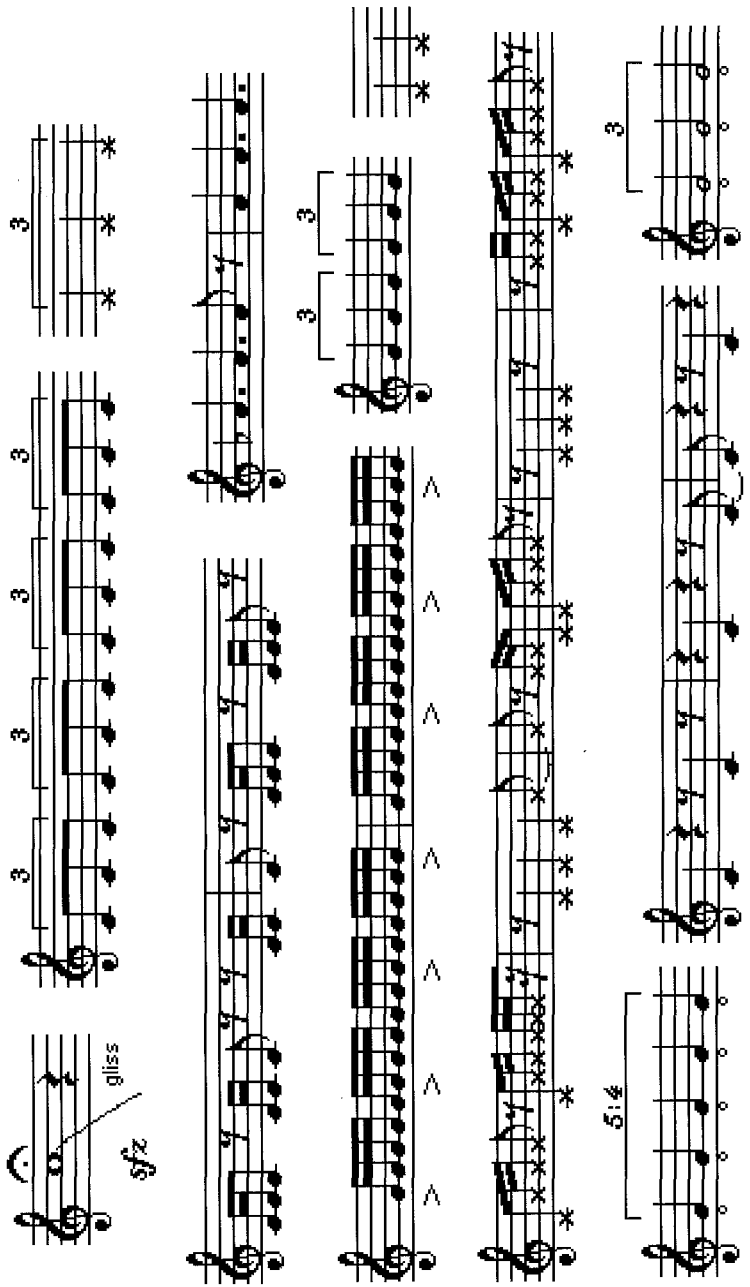
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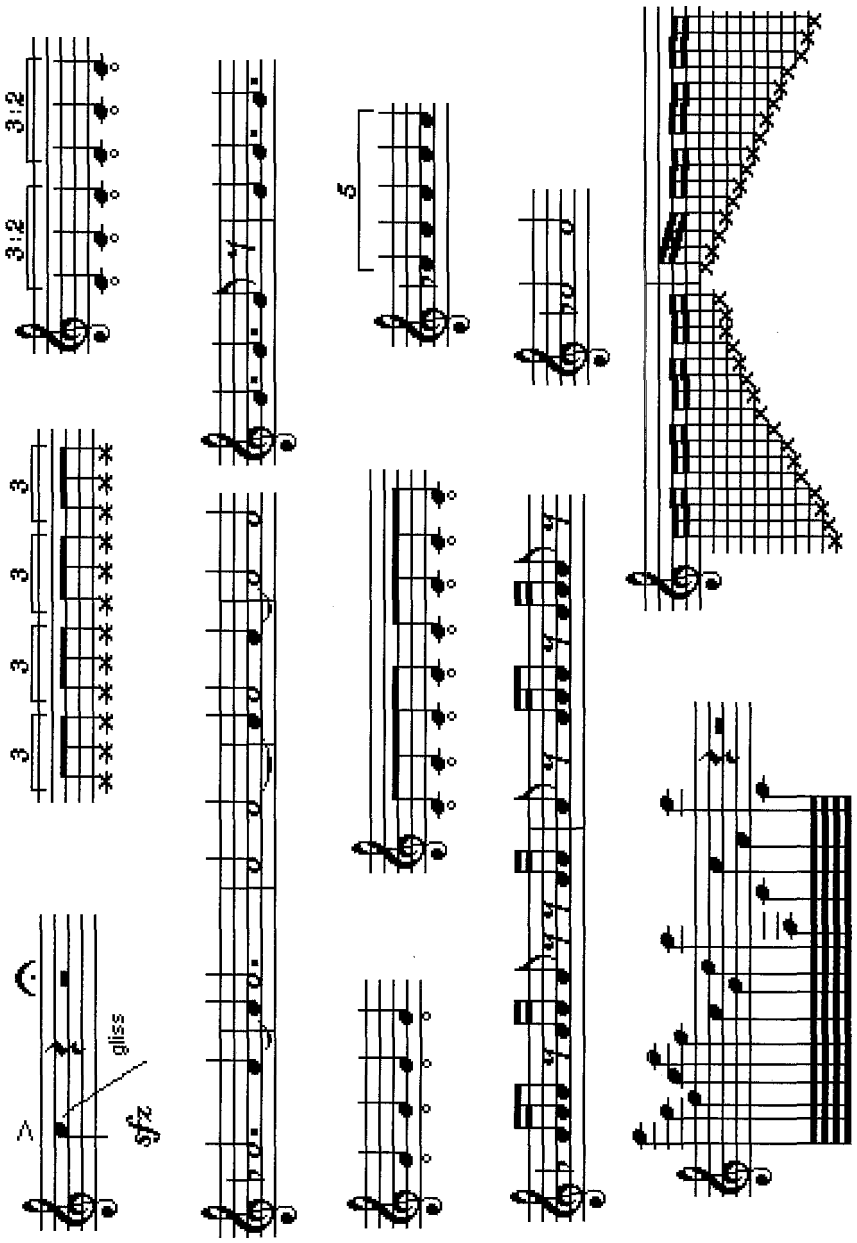
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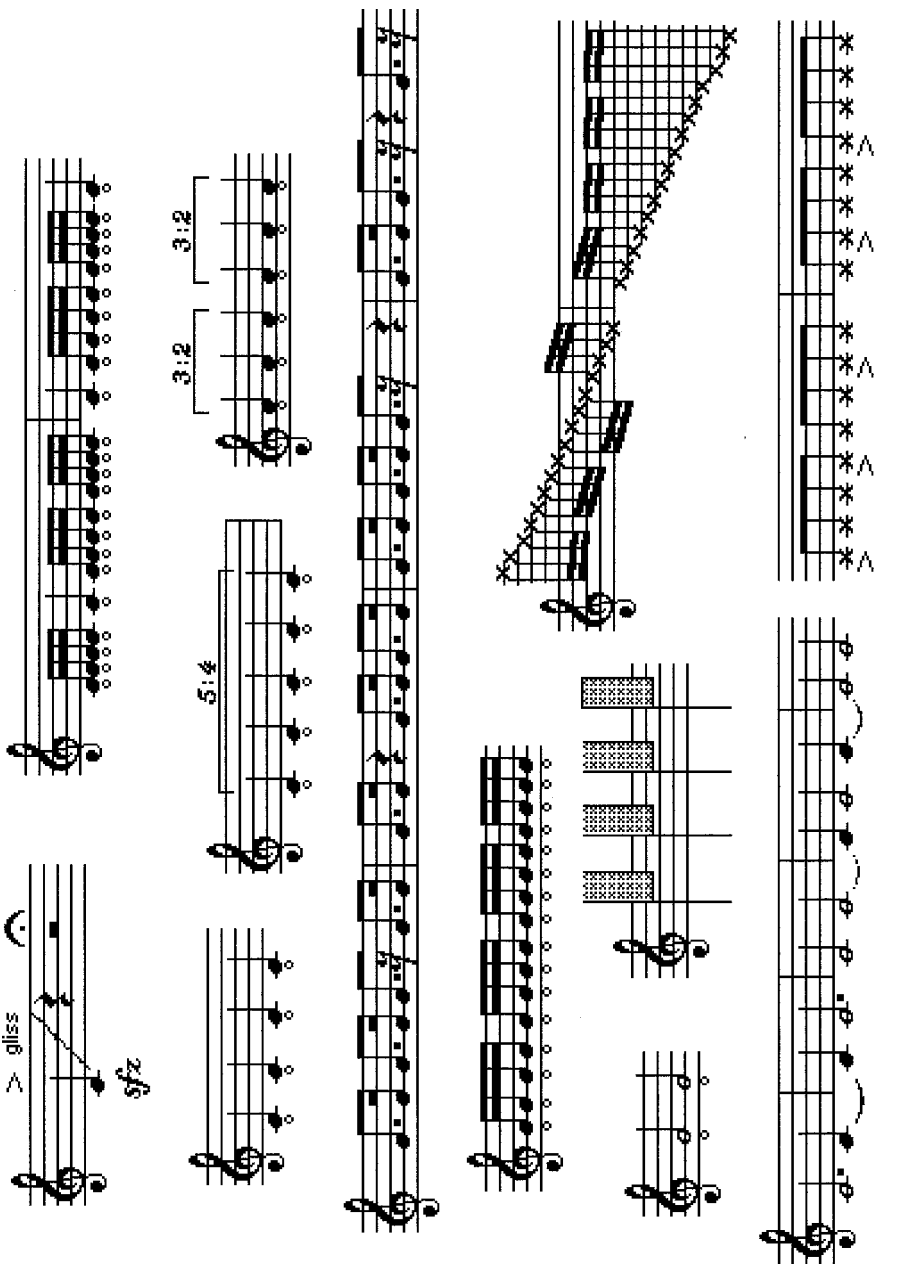
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Things I Think about, and Don't Think about, When I Compose

By David Temperley

To illustrate what my music is like, it is best to start with an example (see fig. 1).[1] This passage illustrates several important things about my music. First, it is highly tonal. For the most part, I use the harmonic system of common-practice tonality, the system used by European composers from Bach to Brahms. My treatment of motives, my use of instruments, and my handling of rhythm, phrase structure and form are also rooted in the music of the common-practice period.

My music also departs from the common-practice idiom in some important ways. In particular, it is heavily influenced by recent popular music, especially rock. This is not particularly evident in figure 1, but is somewhat so, especially in the syncopated rhythm. It can be seen that the melody really falls into two melodic lines, as shown in figure 2. The top line is syncopated in the manner of rock; some notes that seem accented occur just before strong beats, such as the C and B♭ marked with asterisks. Such syncopated notes are heard as belonging on the strong beat after the beat they occur on. I find this kind of syncopation enormously suggestive, and use it in countless different ways. For one thing, syncopation allows for great rhythmic variety; for example, the rhythm of the upper line in figure 2 would never be found in a common-practice piece. I often employ syncopation in meters not commonly found in rock, like 9/8, 12/8 (see figure 5), and 3/2. When used together with an irregular metrical structure (as they sometimes are in my music), syncopations can create situations of great rhythmic complexity—though my aim is that the listener should never "lose the beat." I also like to use syncopated patterns canonically, particularly in such a way that one rhythm fills in the gaps of the other (a bit like a medieval hocket); figure 3 gives an example, from my Rhythmic Study for Piano No. 12.

It can be seen from figure 1 that I employ many of the same structural and expressive techniques used by common-practice composers. I often make use of tonal sequences—a melodic pattern heard at different pitch levels—such as the half-measure pattern repeated in mm. 1–2 or the one-measure pattern in mm. 3 and 4. I like to play around with the way a single melodic line can be constructed so as to suggest multiple lines that converge and diverge in complex ways—for example, the way the two lines of the right hand in mm. 1–2 split up and then join again. I like to build intensity by fragmenting a motive: for example, a one-measure melodic idea

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Figure 1: Preludes for Piano, Book 1, No. 3, mm. 1–13.

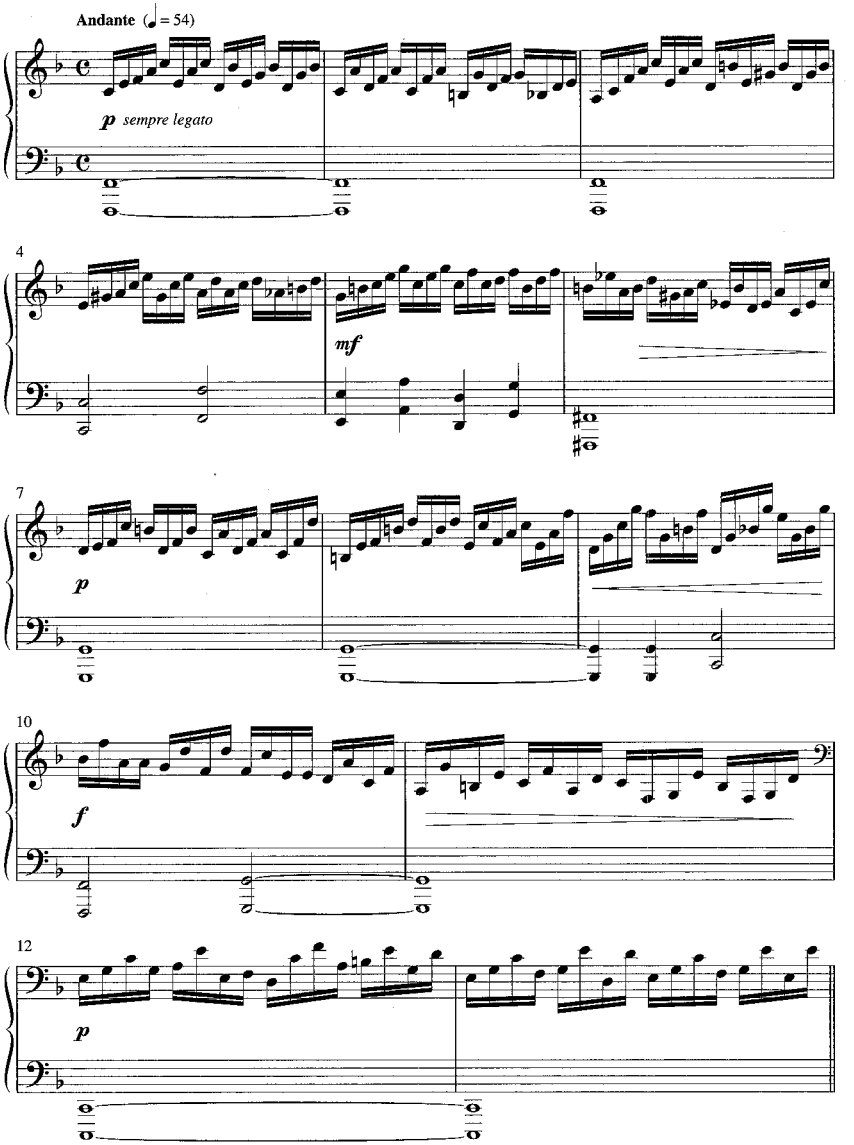


Figure 2: Measures 1–2 of the Prelude in figure 1, showing the implied two-voice structure of the melody.

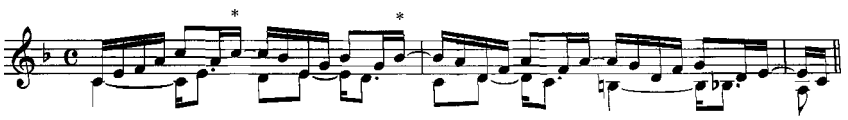
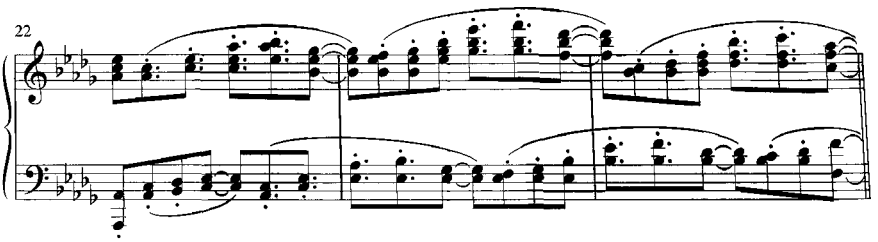


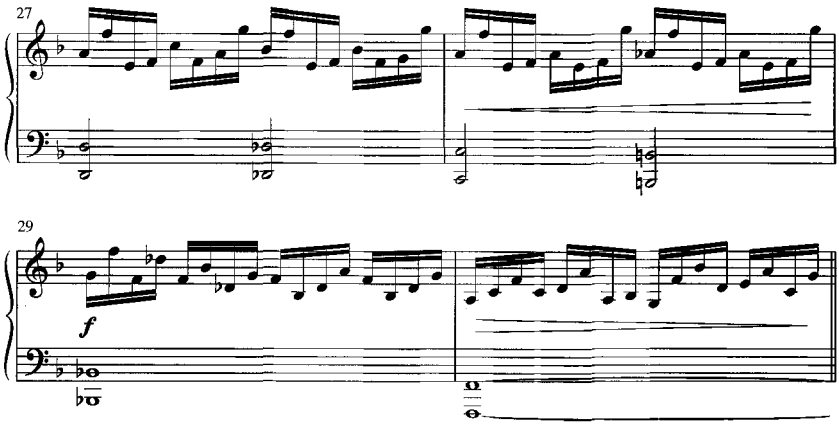
Figure 3: Rhythmic Study for Piano No. 12, mm. 22–24.



in mm. 7 and 8 becomes a half-measure motive in m. 9, leading to another half-measure motive in m. 10, which fragments into a quarter-measure motive in the first half of m. 11. I use surprising harmonic moves and dissonance for dramatic effect, like the move to vii°7/V of C in m. 6 (with the F♯ in the left hand clashing against the F in the right hand just before). I try to build satisfying harmonic progressions of chords and keys, taking the listener on some kind of journey through a multileveled space. The expressive use of major and minor, and the infinitely many possible mixtures between the two, is also an important part of my style—seen in figure 4, a passage near the end of the Prelude, where the prevalent F-major tonality is colored (in quite a conventional way) by the addition of ♭3s and ♭6s.

The Preludes are among my more "classical" pieces. In other pieces, I venture somewhat further away from the common-practice style. My Suite for Brass Quintet and Drums is a much more rock-influenced piece; figure 5 shows an excerpt. Here again, rock-like syncopations are important in the rhythm, though I use them in ways that would rarely be found in any rock song (see for example mm. 13–14, where a pattern spanning three dotted-quarter beats is repeated, creating a kind of 9/8 cross-rhythm against the underlying 12/8 meter). The harmony, too, betrays rock influence. The underlying harmony of the section beginning in m. 9 features a (minor) i in mm. 9–10 going to a (major) IV in mm. 11–12. This combination of i and IV—suggesting Dorian mode—is widely used in rock, and is a

Figure 4: Preludes for Piano, Book 1, No. 3, mm. 27–30.



common feature of my music. Note also the prominent $\flat\hat{5}$ in the melody (F♭). This, too, is a frequent element in rock (arising, of course, from the blues); frequently it appears as an ornamental inflection, sliding into a $\hat{4}$. I like to treat it, rather, as a self-standing scale-tone; frequently I use $\flat\hat{5}$ instead of $\hat{5}$ in triads and sevenths, for example, treating a diminished triad or half-diminished seventh as a tonic chord (as I do, in a way, on the downbeat of m. 9). Despite the rock elements of this passage, there are unmistakable elements of common-practice harmony too: for example, the move to the i^6_4 in m. 13 (more about this measure, below), which I use to create a strong expectation of a cadence to come, just as it would be used in common-practice music; and the move to the Neapolitan harmony, C♭ major (though used in kind of an unconventional way), in m. 15. Sometimes, the combination of rock and classical harmonic elements can lead me into somewhat more exotic territory. For example, consider the chord on the downbeat of m. 13; I think of this as a i^6_4, although the i chord involved is really a minor seventh (B♭ D♭ F A♭) with no root, and with an F♭ on the top, clashing harshly with the F in the bass—this is a chord that would hardly be found in either common-practice music or rock.

A final influence I should mention is African and Latin rhythms. I make extensive use of certain rhythmic patterns from African music, particularly the "standard pattern" of Ewe music: ♩♩♪♩♩♪. The Rhythmic Studies offer several examples; see figure 6. This pattern is interesting in several ways. It is highly ambiguous metrically, and can be reconciled with a variety of different metrical frameworks (3/2, 6/4, or 12/8, and different phases of each of these meters). It can also be understood in terms of rock syncopation—a straightforward rhythmic pattern (♩♩♩♩♩♪♪) with

Figure 5: Suite for Brass Quintet and Drums, V, mm. 8–19.

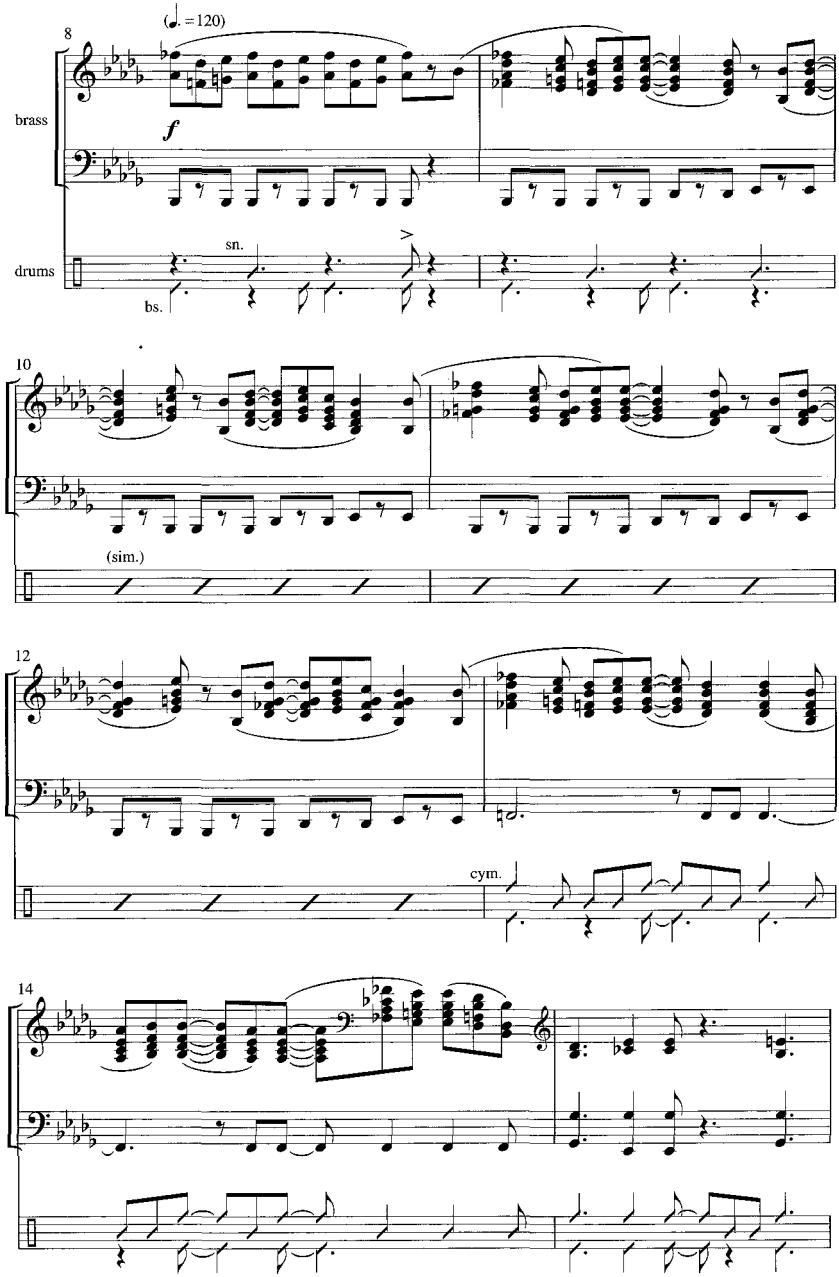
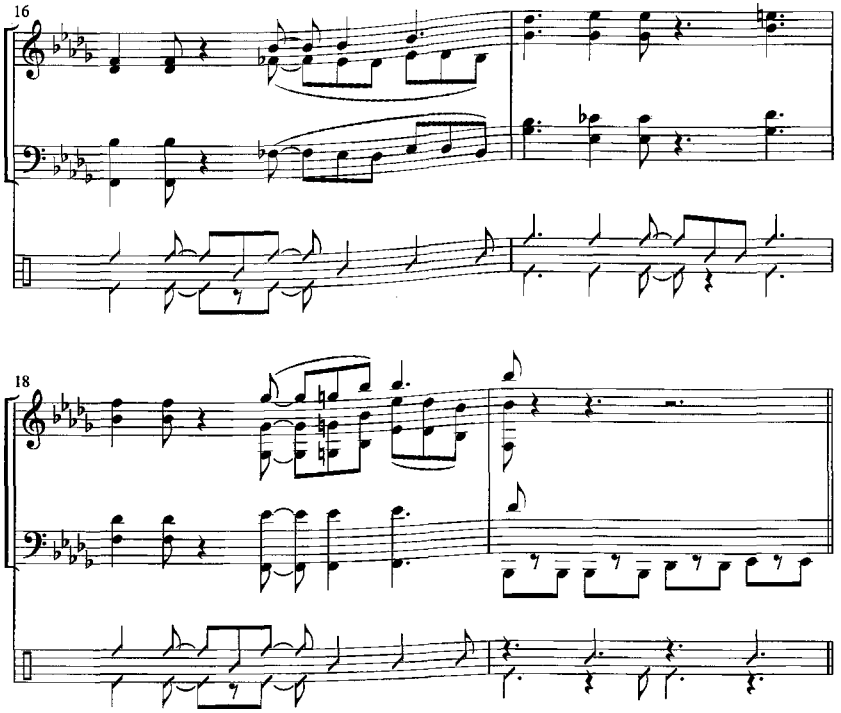


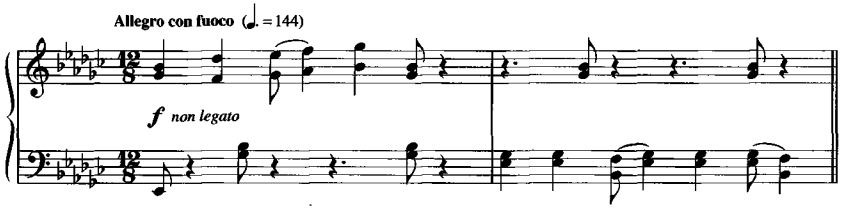
Figure 5 (cont.)



certain elements shifted to the left—and it mixes well with other rock-like rhythms. (Another interesting thing about it is that it corresponds exactly to the diatonic scale—though I have not yet figured out any useful way of exploiting this fact compositionally!) In my Rhythmic Study No. 12, both the rhythmic feel and the basic harmonic progression (I–IV–I–V) are reminiscent of African (particularly South African) popular music. Lately I have begun to experiment with some Latin rhythms; this is apparent in the final movement of my String Quartet No. 3, for example, which requires Latin percussion.

My fusions of rock and classical (and African and Latin) elements are not intended to create effects of collage or ironic juxtaposition; rather, my aim is to unify them into a single language. One of the premises of my work is that there is enough common ground between these various styles that such a synthesis can be achieved.

Figure 6: Rhythmic Study for Piano No. 3, mm. 1–2.



Form has always been a problematic issue for me. My early pieces mostly use quite conventional classical forms, such as sonata, ternary, and variation form. More recently, I have come to find these unsatisfactory, especially sonata form: too predictable, and too "front-loaded" in that most of what is new and interesting happens in the first part of the piece. (I find them too predictable in earlier music, too; when I hear a classical sonata movement now, I usually feel that 80%—or more—of the interest is in the exposition.) However, it remains important to me to have some kind of tonal return, and as a general rule I try to respect the essential principle of sonata form articulated by Charles Rosen—that all significant material should appear in the tonic key by the end of the piece. In my pieces over the last eight years or so, I have sought more flexible and individual ways of achieving these ends. (As I explain below, I have also become somewhat skeptical about the perceptibility of large-scale tonal closure.) Rhythmic Studies 1, 4, and 9 represent attempts to apply the "sonata principle" in unusual ways. The Preludes mostly reflect quite traditional binary or rounded binary structures, as do movements II, III, and IV of the Brass Quintet. Movements I and V of the Brass Quintet employ more of a rondo form; they also reflect the "verse" structure—built around a tonally closed section repeated several times—characteristic of rock (and jazz and other popular music).

* * *

Describing one's compositional style is easy enough. The much harder question is: Why do I write the way I do? This question can be answered at several levels. It could be answered, first, in terms of my personal background. Because my father is a musicologist and a specialist in music of the common-practice period, I was immersed in this music from a very early age. My father (a pianist) used to play chamber music regularly with friends and relatives, many of whom are amateur string players. Being surrounded by people who loved classical music as amateur listeners and

performers made me think of classical music as a living thing, a part of daily life in which everyone could participate. (Perhaps this background also accounts for my preference for solo and chamber music, as opposed to orchestra.) Later on, of course, popular music also became a vital and lasting influence. I spent several years dabbling seriously in pop and musical theater songwriting, which undoubtedly had a big influence on my compositional thinking.

For the past several years, my main occupation has been as a music theorist, specializing in music cognition. Perhaps surprisingly, I find that my work in cognition has not influenced my composing very much. My approach to composition is mostly pretty spontaneous, and I'm not particularly interested in bringing to bear explicit theories of cognition, or anything else, in my work. Having said that, I think my experience in music cognition has influenced my composing in subtle ways. I think I am more attentive now than I used to be towards how things will be heard, as opposed to the way they look on the page. Simply writing a passage in a certain time signature does not mean that it will be heard with the corresponding meter —something that even the greatest composers seem to have forgotten occasionally. Similarly, you can write what looks like two crossing lines, but the chances are they will not be heard that way. Finally, one important lesson I have learned from music cognition research is that there's not much point in constructing complex, large-scale key structures (for example, modulating through several different keys and then returning to the main key several minutes later); people don't hear them. I used to put a lot of thought and energy into such large-scale tonal journeys, but in my recent work (for example, the Brass Quintet), I've tended to keep the tonal excursions fairly short, "checking in" with the main tonic at regular intervals.

One can also try to explain one's composition in terms of aesthetic or philosophical perspectives. I don't usually think about such issues as I compose, and I can't offer any justification of this kind. I do, however, sometimes think about such arguments in a *negative* way. People have sometimes criticized my music on the grounds that it raises "issues" or "problems" of various kinds. Usually people have difficulty articulating exactly what these issues are. The problem is, of course, the fact that I write in what is basically a style from the past. (Actually, it should be clear from the previous discussion that there is a lot in my music that is not borrowed from the common-practice style, but these elements are not necessary to the defense of my music that I am about to make.) I have thought about these arguments (as far as I am able to construct them), and have decided that they are no good. To conclude this essay, I would like to take a look at these arguments, and explain why I reject them.

One argument concerns cultural context. It is commonly said that Mozart's music arose out of a certain historical and cultural milieu, and can only be understood in terms of that milieu. This is a kind of truism that I think most people accept; what does it imply for composition? Well, it implies, presumably, that you can only write in the style of Mozart if you're part of that milieu; to do otherwise would be to somehow go against the laws of history. This is a very common fallacy, for which there ought to be a name: the "natural fallacy," perhaps. It says that "People behave in a certain way; therefore that way is natural; therefore you ought to behave in the same way"—though the very need for the argument demonstrates that *not* everyone behaves in that way. (It should be noted that the same argument is used, just as absurdly, against serialism: "People can't enjoy or appreciate serial music, therefore *you* shouldn't be able to either"—even though the person to whom the argument is directed presumably does enjoy and appreciate serialism; therefore the premise is clearly false.) But quite apart from this, the argument fails completely to account for the behavior of listeners. If knowledge of Mozart's milieu is necessary to understand his music, then only listeners from the same milieu—or intimately familiar with that milieu—should be able to understand it. Now, there do appear to be things in Mozart's music that were, perhaps, only appreciated by listeners of the time. For example, there are (at least according to some historians) many "topics"—musical gestures with conventional meanings—in classical-period music whose meanings are no doubt mostly lost on listeners today. Yet, plenty of listeners today *love* Mozart's music. Apparently, then, neither topics nor anything else that was available only to Mozart's listeners is necessary for an understanding and appreciation of Mozart's music. If it's possible for listeners to understand Mozart's style today, and to get so much out of it, then it is difficult to see why we shouldn't compose in the style as well.

A second argument concerns originality. This one requires a closer look.

Music, it seems, is a kind of information. Music tells us truths, about—about what?—experience, emotions, patterns, things like that. Maybe a pattern of notes and chords—tensing and relaxing in a certain way, fluctuating in energy and activity, taking us on a journey in some imagined space of chords and keys, presenting motives ("characters") that enter, exit, develop, and interact—is a metaphor for life experience, telling us some kind of fictitious story from which we derive general truths about humanity, kind of the way a novel or a movie does.

We don't usually need to hear information more than once. We don't usually read books or see movies many times. Once we've got the information,

we've got it. Now, it's true that sometimes we can enjoy a piece of music even when we've heard it many times and know it very well. But eventually we do get tired of it. In fact, eventually we can get tired of whole *kinds* of music. This is what we would expect if music were information. Not all kinds of sensory input are information. For example, consider food. Food involves sensory input (taste and smell), and this input is a large part of what we enjoy about it. Yet, you can eat the same food many hundreds of times without getting tired of it. Similarly, you can see the beautiful mountain landscape outside your window (if you're that lucky) hundreds of times without getting bored; you can get the same massage hundreds of times and still enjoy it. Music is information; food, scenery, and massages (as well as other kinds of sensory input that we don't talk about in respectable scholarly journals) are not.

This brings us back to originality. If music is information, then presumably there has to be something original about it for people to enjoy it. The really great music, by this view, is the music that is really original.

There are two problems with this. First of all, it's often very hard to actually say what a great composer did that was original. Sure, you could probably point to some things that Mozart did that were new, but are they really central to what made his music great? Even Beethoven: he may have been the first one to begin a sonata with a ii^6_5 chord, or the first to write a ten-minute-long development section, or the first to use four trombones in an orchestra; but such certifiably original things seem like a rather small part of his greatness.

The originality argument runs into even bigger problems when it's applied to *styles*. One might argue that the classical style was enjoyed in the late eighteenth century because it was original at that time, and therefore fresh and interesting; it is no longer original today. This view assumes that there is some kind of audience of immortal listeners, who had their fill of classical music in the late eighteenth century and are now tired of it. But in fact, of course, the population of listeners is constantly being renewed; every generation brings a new batch of listeners, awaiting introduction to the glories of the classical style. This would lead us to expect that every new generation would produce an audience of listeners who find classical music fresh and interesting—which is in fact what we observe.

The originality argument might also be applied in a somewhat different way. Music, it might be argued, is a kind of intellectual property: to use a musical idea that's already been used is unethical or at least unworthy of credit, a kind of plagiarism, similar to stealing sentences from someone else's novel. This would imply that the only legitimate use of a musical idea was the very first one; all subsequent ones were unoriginal. Again, the problem with the argument is that virtually all aspects of (for example)

Mozart's musical language were not original to him (and, incidentally, were used over and over again in Mozart's own compositions). Thus, this argument does not seem to have much to do with the way we actually judge music or composers—at least, the way we judge the great composers of the past.

I remember one incident from a master class, in which I had just presented a piece that had been very favorably received by the class. After several positive remarks from other students, one of the master composers confronted me with this question (which I paraphrase roughly): "Your music is all very well and good. But when you die and go to the gates of heaven, and the angel says, 'What have you accomplished, what have you contributed to music?' what will you say?" This, to my mind, epitomizes the argument I just expressed. In order for music to be valuable, there must be something in it that one can point to and say, "*This* is the contribution"—presumably, something demonstrably original and innovative. Again, the main argument against this view of musical value is that most of the music that we all value does not pass this test.

Having said all this, I do accept the basic idea of music as information, and the basic idea that, for a piece to be rewarding and enjoyable to listeners, there must somehow be something about it that is new to them. However, I believe that what is original and unique about a composition is basically beyond our understanding right now. There must be things that are original about Mozart's 40th—that is what makes it a great piece—but I don't think anyone is able to say what those things are. The lesson I take from this, then, is that we should not worry about trying to do things that are demonstrably original. No doubt some kind of originality is necessary, but we have very little idea about what kind of originality is good. There is no particular reason to think that a highly original compositional technique will lead to anything good. Similarly, there is no reason to doubt that much great music remains to be written within a given style—even a style that may seem very well-trodden and narrowly defined.

I once brought in a thoroughly classical-sounding piece to one of my teachers. "Ah yes," the teacher said, pointing to a ii^6 chord, "The ii^6 chord. It was great when Mozart used it," he said with exasperated mock-patience, "It was great when Schubert used it, but. . . ." He did not finish; there was no need to. The point was clear: The ii^6 chord *isn't* great when you use it. I wish I had had the nerve to take him up on this point, because I really would have liked to know what his reasoning was. Was it the cultural context argument—only listeners from the classical milieu can appreciate the ii^6 chord (patently false)? Was it the originality argument—Mozart and Schubert were being original when they used the ii^6 chord, unlike me today (equally patently false)? Was he literally saying that a ii^6 chord written

in 1800 sounds different, and better, to him than one written today (simply because he knows the two chords were written at different times)—in which case, what possible reason could there be for feeling this way? (Of course, his point may have been simply that Mozart and Schubert used the ii^6 chord more skillfully than I did—which is undoubtedly true. But I don't *think* this is what he was getting at.)

Anyway, these are a few of the arguments that I think may be lurking in people's minds when they say my music raises "historical issues" or "stylistic problems." I don't wish to erect straw men here; it's possible that I've got the arguments wrong, or that there are other better arguments that I haven't considered. If so, I'd be very interested to know. The arguments I have made (against these other arguments) are purely *defensive.* They do not question or invalidate anyone else's approach to composition; at least, they certainly are not intended to. The lesson, rather, is this: If you wish to compose in the style of Mozart's time (or, for that matter, Ockeghem's or Vivaldi's or Debussy's), you should go ahead. There is no reason to think that you won't come up with some great music. If you've been resisting the impulse to compose in this way because you think there are arguments against it, you should think very carefully about what those arguments are.

Note

1. This piece, along with the other Preludes for Piano, can be heard in MIDI format at my web site, <www.link.cs.cmu.edu/temperley>; the other pieces discussed in this paper—the Rhythmic Studies and the Brass Quintet—can also be heard there.

review-essay

Beyond Duality: Stasis, Silence, and Vertical Listening

Jonathan Harvey. ***In Quest of Spirit: Thoughts on Music.*** Berkeley: University of California Press, 1999. xvii, 157 pp. Notation, CD.

Morton Feldman. ***Give My Regards to Eighth Street: Collected Writings of Morton Feldman.*** Edited by B. H. Friedman. Afterword by Frank O'Hara. Cambridge: Exact Change, 2000. xxx, 222 pp. Illustrations.

By Daniel N. Thompson

Composers and other artists are sometimes hesitant to comment on their own work. Sometimes this reticence has been due to a belief that the art should "stand by itself"; sometimes the artist feels that it is the job of others to critique his work; at still other times the artist may feel that he is simply unable to verbally articulate anything of importance—even if he feels strongly that there are things he would like to say about the artwork. Nonetheless, innumerable composers and other artists *have* written about their work, so it seemed especially appropriate, in an issue of *Current Musicology* in which the articles have been written solely by composers, to review a couple of books that composers have authored.

In this issue I am therefore pleased to review two books that I enjoyed reading, and which consist of writings by composers whose music I like very much. In fact, Jonathan Harvey's *In Quest of Spirit: Thoughts on Music* describes, better than any other book that I have ever read, how *I* hear music. It is an equally great pleasure to review *Give My Regards to Eighth Street: Collected Writings of Morton Feldman,* a compilation of writings by a man who was for many years my favorite composer of contemporary Western cultivated music.

Harvey's book, which in another form began existence as The Bloch Lectures (given at the University of California at Berkeley, in 1995), comprises approximately 90 pages of text, divided into four chapters; 55 pages of notation (containing 35 examples); and a 38-track CD that vividly helps

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to demonstrate what is impossible to communicate with only words or notation. The CD includes excerpts from *The Riot, Ritual Melodies, Madonna of Winter and Spring, Song Offerings, One Evening, Tombeau de Messiaen, Ashes Dance Back, In Quest of Love, Inner Light, Bhakti,* and *Mortuos Plango, Vivos Voco.* In addition, the CD includes excerpts of pieces by Scriabin (Sonata No. 10), Stockhausen (*Kontakte* and *Inori*), John Chowning (*Stria*), and Jan Rokus van Roosendael (*Kaida*). Composers whose works are notationally excerpted include Stravinsky, Mozart, Bach, Mahler, Beethoven, Wagner, Britten, Strauss, Brahms, Pärt, Tavener, Berg, Fauré, Messiaen, Webern, and Takemitsu. The book's four chapter titles indicate, logically enough, what seem to be some of Harvey's abiding interests: "Who Is the Composer?" "The Role of Ambiguity," "Unity," and "Stasis and Silence."[1]

The format of Feldman's book is very different. *Give My Regards to Eighth Street* is a collection of short prose pieces first published between 1958 and 1988. Most were originally conceived as essays or liner notes, although there are five pieces that were first delivered orally: a lecture ("The Future of Local Music"), an interview ("I Met Heine on the Rue Fürstenberg"), an informal talk in New York between Feldman and a friend ("Conversations without Stravinsky"), and informal remarks before performances ("Triadic Memories" and "For Philip Guston"). There are a few notational excerpts on pages 140–42, which provide examples of the kind of sonic patterns Feldman used in *Why Patterns?* (1978, for flute, glockenspiel, and piano), *Spring of Chosroes* (1977, for violin and piano), and String Quartet (1979). The text also includes a few drawings (scrawls?) by Feldman, as well as an afterword (from 1959) by poet Frank O'Hara. B. H. Friedman, who edited the volume, provides a snapshot of the composer in the opening paragraph of his introduction:

> Morton Feldman (1926–87) was huge—huge in size, about six feet tall, close to 300 pounds; huge in spirit; huge in appetite for food, women, aesthetic experience (in addition to music: paintings, books and, later, Oriental rugs); huge in the energy that produced a torrent of musical compositions and words, spoken and written. He seemed 'larger than life,' an exaggeration of humanity, as if a literary invention like Gargantua or Falstaff, and yet . . . the custodian of an inner thin man who, when 'let out,' expressed a professional elegance that could only have been achieved in something like solitary confinement. (Friedman: xi)

I first became aware of Morton Feldman's music during the early 1980s. Compared to the work of many other composers of the '50s, '60s, and '70s, his music seemed like an oasis of musical sensitivity in a desert of

sterile and mechanical noise that was sometimes cleverly constructed but which I found to be almost never emotionally satisfying. To me, much of the "intellectually rigorous" music of the past several decades has seemed to wallow in complexity for its own sake (its composers often appearing to be more enamored of the notational pitch-grid puzzles they use to generate their next gesture than concerned to communicate anything more than the "craftiness" of their systems of musical construction).

For me, Feldman's music couldn't have been more different. He understood, better than any other Western composer I have ever heard, how to use silence, how to effectively make use of the musical *rest.* In the book's introduction, Friedman states that Feldman learned from Cage "the importance of silence as positive Void (in the Eastern religious sense) rather than simply as negative space" (xix). The superb use of silence, especially combined with his extraordinarily effective use of timbre, helps to give Feldman's music a spaciousness that I don't perceive in most other composers' works.

Perhaps the most significant fact about much of Feldman's music is that it seems to have been influenced by almost none of the zeitgeist of most of the "serious music" world of the 1950s and '60s. During these decades, he was a part of, but also *apart from,* the New York composition scene, and in the collected writings he talks about conversations that he had with Stockhausen, walks with Boulez in New York City, and poker games played with Milton Babbitt back in the days when Babbitt was teaching mathematics and "didn't even have a music connection at the time" (F: 116).[2]

Feldman wasn't just *compositionally* outside of the New Music mainstream. He was also socially and vocationally outside it. For instance, after working at his uncle's dry-cleaning business until he was in his forties, he became, in 1969, dean of the New York Studio School—at which he had also lectured at least fourteen times during the late 1960s (Friedman: xxv).

He was primarily concerned with the sensuousness of sound, and his training was iconoclastic. He writes that when he was twelve years old he "was fortunate to come under the tutelage of Mme. Maurina-Press, a Russian aristocrat who earned her living after the revolution by teaching piano and by playing in a trio with her husband and brother-in-law. . . . She was a close friend of the Scriabins—and so I played Scriabin. She studied with Busoni, and so I played Busoni transcriptions of Bach" (F: 3).

When he was fifteen years old, Feldman began studying composition with Wallingford Riegger, and at eighteen with Stefan Wolpe. About Wolpe, he writes, "[A]ll we did was argue about music, and I felt I was learning nothing. One day I stopped paying him. Nothing was said about

it. I continued to go, we continued to argue" (F: 3–4). Then, when he was 24 years old, he met John Cage:

> In the winter of 1950 I went to Carnegie Hall to hear Mitropoulos conduct the New York Philharmonic in the Webern Opus 21, the Symphony for Small Orchestra. I was twenty-four, there with my 17½-year-old wife. I'd already composed my graph pieces, the first of their kind, but I was vastly unknown. No piece before or since had the impact of that Webern work on me. The audience was cackling, laughing, hooting, people walking out. At intermission I went out to the inner lobby near the staircase, and there was John Cage. . . . Cage asked me what I thought of the Webern. I said I'd never heard anything so thrilling. He practically jumped up and down in agreement and asked my name. When he found out I was a composer he brought me in, introduced me to his friends, invited me to a gathering later in the week. (F: 114–15)

Cage had a huge influence on Feldman's career (encouraged his composing and introduced him to others—even dedicated *Imaginary Landscape,* for twelve radios, to him) and Feldman speaks of Cage with undiluted affection. Perhaps most important to the development of Feldman's style, it was through Cage that he met many of the painters who were to have such a large influence on his work.

Contextual Holism: The Unity of Art and Artist

What surprised me most about these two books is how *similar* Harvey and Feldman view a number of different issues. I never met Feldman, but from all reports his personality was very different from Harvey's, which only underlines my surprise at the close similarity of such a large number of their viewpoints about things that they clearly thought (and think) are of great importance. Feldman's concerns, as indicated in *Give My Regards,* include, in sometimes different form, many of Harvey's concerns, as well as a number of others not addressed in Harvey's book (which, excluding the extensive notation, is significantly shorter than Feldman's). Both authors, however, are preoccupied with the *nonduality* of composer and composition, and with the central importance of silence and "stasis" in much of their music. For Harvey, the striving for "unity" (i.e., nonduality), and the creation of music that reflects the attempt to achieve unity is, as his book's title suggests, a spiritual quest; for Feldman, although he reportedly took his Jewish identity seriously, nonduality is mostly expressed as a dislike—even a contempt—for what he calls compositional "systems."

Both composers have fairly radical ideas of "nonduality." Throughout both texts, numerous statements appear that make the point that it may be difficult—if not impossible—to conceptually separate these composers from their compositions. For example, Harvey quotes an excerpt from an interview with Stockhausen, in which he notes that Stockhausen places inspiration in the collective domain, which "both is and is not Stockhausen. . . . He wants us not to be conscious *of* the music (dualistic) but to be conscious *as* the music (nondualistic). *We are the music*" (H: 21).

Feldman seems to agree with Harvey (but also seems to have a different view of Stockhausen's stance): "The system cannot help us here," he says, when we "enter" the work and become one with it. "There is no thesis here, no antithesis, no synthesis" (F: 66). "If I want my music to demonstrate anything, it is that 'nature and human nature are one.' Unlike Stockhausen, I don't feel called upon to forcefully 'mediate' between the two. Stockhausen believes in Hegel; I believe in God. It is as simple as that" (F: 18).

> The question at hand, the real question, is whether we will control the materials or choose instead to control the experience. Varèse expressed the same idea in a different way when he said of himself and another man that he wanted to be *in* the material, while the other man wanted to remain outside. (F: 66)[3]

To support their position regarding the indivisibility of the music/ian, they both refer to others who have held the same views. Feldman writes, "Duchamp once said there was no such thing as art, only the artist. In this belief, Earle Brown and John Cage meet" (F: 42); and Harvey quotes the Zen koan: "'Does the ear go to the sound, or the sound to the ear?' In other words, where does the mind stop and the object start?" (H: 33). Feldman again:

> What do we see when looking at Cézanne? . . . If our interest lies in discovering how Art has survived, we are on safe ground. If our interest lies in how Cézanne, the artist, survived, then we're in trouble—which is where we should be. The critic's ideal has always been the process without the artist. (F: 89, 93)

Harvey and Feldman both address the difficulty of conceptually separating themselves from their work:

> [S]ome of my own works [are] 'closer' to me than others. I cannot define what this 'me' is to which those works are close, but the ones I

> prepare for more deeply seem to come from some central place within my being. For these works I spend a few weeks becoming stiller, withdrawing from the world . . . until finally I arrive at the core of the work—or is it the core of myself? (H: 79)

> I do not feel I am being 'free' when I use a process that gives up control of pitches in one composition, rhythm and dynamics in another, etc. etc. . . . What I control is my will—something far more difficult than a page of music. (F: 17–18)

This 1964 statement that the will is more difficult to control than a page of music anticipates Feldman's 1967 response to a friend:

> *The general professional feeling is that you're evading the problem when you work without compositional ideas, without what you call 'systems.'*
>
> I'm evading their problem. I'm not evading my own. (F: 55–56)

It seems to me that this point is critically important. If a composer's music doesn't logically follow some "system" or other, the only "analysis" that the composer can do is to talk and write in very personal terms about how compositional choices were made ("What I control is my will").

> It is not freedom of choice that is the meaning of the fifties, but the freedom of people to be themselves. This type of freedom creates a problem for us, because we are not free to *imitate* it. . . . There is no 'tradition.' All we are left with is a question of character. What training have we ever had to understand what is ultimately nothing more than a question of character? What we are trained for is analysis. (F: 99, 100–01)[4]

Feldman says that too much composition is writing that is done "in terms of organization, in terms of densities and instrumentation, but they're not writing *for the ear*" (F: 60). He's right. Too many composers who came out of academic music composition programs during the mid-twentieth century seemed to write entirely for the sake of analysis of the compositional system employed. However, music that is great fun to analyze may not be very rewarding to listen to. "On the whole . . . the campus composer allies himself with the Germanic musical tradition. This is perfectly understandable; twelve-tone music, while it may not be great fare for the concert hall, is perfect for the schoolroom" (F: 46).

> It is Boulez, more than any composer today, who has given system a new prestige—Boulez, who once said in an essay that he is not inter-

> ested in how a piece sounds, only in how it is made. . . . The preoccupation with . . . systems and construction seems to be a characteristic of music today. It has become, in many cases, the actual subject of musical composition. (F: 33–34)[5]

It seems clear that one of the benefits of any formalized compositional "system" is that it more easily allows composers, scholars, and critics to talk about a piece of music without having to engage in the messy, personal business of talking about the lives of individual composers and listeners. Apparently, systems can be more easily analyzed in a vacuum than can their human creators. Feldman says that the *personal* is "anti-process," while the *impersonal* is "process" (F: 65). "[I]n reaction to modernity, there is an insistence that one can no longer take refuge in ideas, that thought is one thing and its realization another" (F: 70). For Harvey, too, some of these "systems" are endemic to modernism:

> Whatever one may think of postmodernism, it is high time that the prevailing orthodoxies of academic music are challenged. . . . [F]or too long music has been described in terms derived from verbal language and its modes of organization—narrative and plot, for instance—and in terms derived from visual concepts, like 'form unfolding': structure seen in notation or imagined like an object or journey we move around or through. These are borrowed perspectives and they are inadequate for music, although an entire pedagogic culture is founded on them. The structure of music is not reducible to these other discourses. (H: 27)

Stasis, Silence, and Vertical Listening

Stasis and silence are extremely important components of the music of both composers, and Harvey writes about stasis, silence, and vertical listening in regard to not only himself and his own compositions, but also in relation to Stockhausen, Pärt, and Tavener. For example, he notes the "extremely minor variation, great length, and pervasive silence" in Pärt's *Passio Domini nostri secundum Iohannen,* and Tavener's use of the icon as a model for his works, in which the "same extreme negation of self-expression" can be found as in Orthodox chant (H: 70–71).[6]

> When a mode divides the octave symmetrically, it ceases to have the goal orientation of the diatonic system and becomes a musical expression of suspension in space. Here music is not symbolizing; it is itself a form of prayer, a means for experiencing unity. It is not a code for pointing *to* something. (H: 71)

Harvey speaks also of the "stasis of pedals, where the Many and the One are pointed up separately (the static in the bass, the mobile in the upper parts), and [the] turn to modality, where the One permeates the Many *without* being separated from it" (H: 70). He also notes that timbre is "a nondiscursive element" (H: 39), which is apparently why he considers it to have a great deal to do with "spirit":

> [S]pectralism in its simplest form, as color-thinking, is a spiritual breakthrough. . . . Spectralism, like harmony, is in essence outside the world of linear time. In music, time is articulated by rhythm; in psychology, time is articulated by the process of chopping up and arranging experience into language, which separates us from the primary world and joins us to the linear symbolic order. (H: 39, 40)

A single, held tone is perhaps the most extreme form of stasis, and in support of his statement that spectralism is a spiritual breakthrough Harvey cites both Rudolf Steiner and Takemitsu. "Steiner wrote as early as 1923 of how the single note would in future be found as rich in meaning as an entire symphony—a prophecy now coming true before our ears. This he called the spiritualization of music, the penetration of its inner nature" (H: 80). Harvey quotes Takemitsu as saying that the single sound is complete enough to stand alone—if we are prepared to listen in the manner most appropriate to apprehend its "spiritual" qualities. "For Takemitsu the 'single sound' (together with silence) produced by great masters of the biwa or shakuhachi served as a model: 'A single strum of the strings or even one pluck is too complex, too complete in itself to admit any theory'" (H: 78).[7]

Appreciation of the "single sound" is an aesthetic stance that is something near the opposite of the twentieth-century Western academy's usually unquestioned assumption that sonic busyness and maximal aural-information density is a good to be desired. Feldman's answer to virtuosity has often been stasis or silence: "[I]t's like Rothko, just a question of keeping that tension or that stasis. You find it in Matisse, the whole idea of stasis. That's the word. I'm involved in stasis. It's frozen, at the same time it's vibrating" (F: 184).

> The degrees of stasis, found in a Rothko or a Guston, were perhaps the most significant elements that I brought to my music from painting. For me, stasis, scale [i.e., duration of a piece or movement], and pattern have put the whole question of symmetry and asymmetry in abeyance. (F: 149)

> Though tonality has long been abandoned, and atonality, I understand, has also seen its day, the same gesture of the instrumental attack remains. The result is an aural plane that has hardly changed since Beethoven. (F: 24) . . . Now, as things become increasingly compressed and telescoped, as differentiation becomes, in fact, the subject of most composition, music has taken on the aspect of some extraordinary athletic feat. . . . Change is the only solution to an unchanging aural plane created by the constant element of projection, of attack. This is perhaps why in my own music I am so involved with the decay of sound, and try to make its attack sourceless. (F: 25)

For Harvey, in particular, the spirituality of stasis is related to his ideas and uses of silence, and he makes the point that "spirit" is the nonphysical or nonmaterial as well as nonverbal reality—perhaps best expressed as silence.

> Broadly speaking, spirit *underlies* discourse. It is the Ground, the All, the background level of the Schenkerian tree, which contains everything, all discourse, yet which seems almost empty of content. It is the Silence out of which every sound is born. (H: 37) . . . [S]ilence-filled ideas are . . . inherent in certain oriental traditions such as Zen Buddhism. Zen has cast its influence on figures as different as John Cage and Toru Takemitsu. . . . Takemitsu said he only uttered 80 percent of the idea . . . the rest is silence, the pregnancy of the unsaid, *ma. Ma,* a profoundly important concept in Japanese culture, is the silent understanding . . . when meaning is intense but nothing is expressed. (H: 78)

For many Western composers, the idea that meaning can exist when "nothing is expressed" seems to be seldom considered.[8] Harvey and Feldman, however, privilege silence as much as sound. Feldman writes: "[S]ilence is my substitute for counterpoint. It's nothing against something" (F: 181); and Harvey quotes Takemitsu approvingly:

> 'Between this complex sound—so strong that it can stand alone—and that point of intense silence preceding it, called *ma,* there is a metaphysical continuity that defies analysis. . . . To the sensitive Japanese listener who appreciates this refined sound, the unique idea of *ma*—the unsounded part of this experience—has at the same time a deep, powerful and rich resonance that can stand up to the sound.' (H: 78)

Stasis and silence can be appreciated as positive commodities only if we are prepared to listen in the way most conducive to their appreciation.

"Vertical listening," in which sounds are appreciated for themselves (i.e., without regard to syntax) is important to both composers, and in Feldman's case is made explicit with the series of pieces titled *Vertical Thoughts,* composed during the 1960s, which are, indeed, virtually static and very slow. (In addition, one of the chapters in *Give My Regards* is "Vertical Thoughts"; it was originally an article that appeared in *Kulchur* in 1963.) "When sound is conceived as a horizontal series of events all its properties must be extracted in order to make it pliable to horizontal thinking. How one extracts these properties now has become for many the compositional process" (F: 12).

> The activity of listening to form is largely a mental one: we add one note to another, one phrase to another, until eventually they stand in the memory as a structure. We choose which notes to connect with which others to satisfy our desire for rich meaning. We could try to listen to Haydn serially or . . . according to traditional Chinese musical syntax; whatever way it is, we make a choice and store the outcome in mental space.
>
> There is also a less mental way to listen, and that is to be concerned not with harmony and form, but with the 'now,' with the color and flavor of the moment. Although, as we've seen, all music has a dynamic, a sense of tension, it *is* occasionally possible to nudge music out of its context and hear it vertically, rather than as a horizontal line. Obviously, the music must invite this mode of perception. (H: 34–35)

Both Harvey and Feldman write that musical *discourse* can make the act of vertical listening difficult. Harvey: "If the thematic or formal argument never faded to the background (as in most music from Bach to Schoenberg), the immanence of spirit in music might be less consciously perceived" (H: 37). "Obviously, elements of [the music] must be virtually static, or at least very slow; otherwise the discourse, the argument of melody and polyphony, will be too domineering. One must be able to get inside the sound itself, not hear it as a passing element belonging to structure" (H: 35). Unsurprisingly, this leads to an entirely different conception and experience of time, which Feldman addresses when he writes that he doesn't want time measured; he wants time to be felt by the performers and listeners (F: 177).

Listening in the traditional Western "linear" way to music that carries limited aural information (either because of its reduced sonic palette or because of repetition) can lead only to boredom; silence, in discursive thinking, can be only an absence. When we listen only linearly, silence can exist only as an anticipation of the next gesture. Disciplining our

minds to "slow down" and to focus on the moment at hand is what is required to fully appreciate music like Feldman's.[9] "Vertical listening" enables us to appreciate silence as a "positive commodity"—not as the absence of sound, but as the *presence of quiet,* which, as Harvey indicates, is the source of all sound.[10]

Mediating "Spirit"

Harvey and Feldman both write very similar things when they speak of the creation of art as a kind of "failure"—the kind of failure that comes with accomplishing that which, as Feldman points out, one did not want, and with trying to convey the direct experience of spirit, which Harvey says is impossible to communicate. "The irony of Mondrian is that, like every Messiah, he was Messianic about things that cannot be transmitted. We must be grateful, however, that Mondrian the Messiah failed, for that failure gave us Mondrian the painter" (F: 71–72).

> Guston tells us he does not finish a painting but 'abandons' it. . . . After all, it's not a 'painting' that the artist really wanted. There is a strange propaganda that because someone composes or paints, what he necessarily wants is music or a picture. Completion is not in tying things up, not in . . . 'telling a truth.' Completion is simply the perennial death of the artist. Isn't any masterpiece a death scene? Isn't that why we want to remember it, because the artist is looking back on something when it's too late, when it's all over, when we see it finally, as something we have lost? (F: 78)

> Thomas Mann . . . once said that all artists must be just a little naive. I have no compunction in singing of what is most charming, no hesitation in trying to portray, sometimes as directly or naively as possible, the experience of spirit itself—always failing, of course, because in the end it's true: spirit has to be mediated. (H: 36)

Harvey then adds: "But the attempt is crucial. It is my obsessive song" (H: 37). Feldman agrees: what he calls the Abstract Experience is an emotion that "philosophers have failed to categorize. . . . The collision with the Instant . . . is the first step to the Abstract Experience. And the Abstract Experience *cannot be represented.* It is, then, not visible in the painting, yet it is there—felt" (F: 75, 76).

> Nono, who finds the social situation intolerable, wants art to change it. John Cage, who finds art intolerable, wants the social situation to change it. Both are trying to bridge the gulf, the distance between

> the two. . . . But how can you bridge what is real with what is only a metaphor? Art is only a metaphor. It is solely the personal contribution . . . that can give the artist those rare moments when art becomes its own deliverance. (F: 82)

The idea that "art is only a metaphor" is of central importance to both Harvey and Feldman, and for Feldman the metaphorical is only transcended with the actual process of committed creation (what he calls "the personal contribution"), which provides the artist with deliverance from the mundane. One must act—with intention and conviction—even if that means sitting and waiting receptively for the inspiration to create.

At the same time, the creation is a sort of failure because spirit must be mediated—and yet *spirit* can't be mediated because at the point of "mediation" it becomes something other than spirit. It may, for example, be mediated (i.e., "constrained") as an artwork:

> The medium, whether it be the sounds of a John Cage or the clay of a Giacometti, can be equally incomprehensible. Technique can only structure it. . . . It is this structure, and only this structure, that becomes comprehensible to us. By putting the 'wild beast' in a cage, all we preserve is a specimen whose life we can now completely control. (F: 88–89) . . . It is not a question of a controlled or decontrolled methodology. In both cases, it is a methodology. Something is being made. And to make something is to constrain it. (F: 111)

> For centuries we have been victimized by European civilization. And all it has given us—including Kierkegaard—is an Either/Or situation, both in politics and in art. But suppose what we want is Neither/Nor? Suppose we want neither politics nor art? Suppose we want a human action that doesn't have to be legitimized by some type of holy water gesture of baptism? Why must we give it a name? What's wrong with leaving it nameless? (F: 80–81)

"Leaving it nameless" would be "very Zen"—which is the answer to Feldman's question. What's "wrong," of course, is that without language we can't have a bureaucracy. Without "names" the only way the composition student can learn is to be in the presence of his mentor. Without a system, we can't have social reproduction; without priests, there is no organized religion. For Harvey, too, the ability to *abstract* (not to be confused with Feldman's Abstract Experience) also keeps us from truth: "We are unable to access truth because of our concept-making mind" (H: 38).

For Feldman, then, "leaving it nameless" is perhaps a way of avoiding its entrapment by the concept-making mind that Harvey says keeps us from truth.[11] Nonetheless, although both composers feel that art fails to mirror what Harvey calls "spirit" or "truth" and what Feldman might call "the nameless" or the "Abstract Experience," Feldman spent his life (and Harvey spends his life) composing, making the attempt (and always failing) to convey spirit, truth, the nameless. . . .

In the service of this "noble failure," Harvey and Feldman each developed his own distinctive compositional style. One example of Harvey's compositional goals and strategies is provided by a brief outline of the approach to harmony and timbre that he employed during the composition of his opera *Passion and Resurrection* (1981):

> It took me a long time to compose the new world of the Resurrection that [Christ] brings about. Eventually I lit on the idea of symmetrical harmony around a central axis, a floating, weaving world freed from the dark gravity of bass-oriented music—a gravity that has dominated the West since it became obsessed with individuality and its passions, signaled in the birth of the figured bass and early opera. This axial feeling became my preferred technique of harmony for many years afterward. In trying to achieve a medieval directness, I supplied all the characters with a spectrum that moved above their lines in parallel, composed of from one to twelve partials according to the dullness or brilliance of the halo I imagined them to have. The simplicity or complexity of their characters determined the limitations of the pitch repertoire they used. (H: 53)

Feldman's *Collected Writings* is a different sort of work than Harvey's book, so he speaks in even more general terms about his compositional approach, ideals, and techniques:

> My primary concern . . . in all my music is to sustain a 'flat surface' with a minimum of contrast. (F: 127) . . . My music has been influenced mainly by the methods in which color is used on essentially simple devices. It has made me question the nature of musical material. (F: 139) . . . My past experience was not to 'meddle' with the material, but to use my concentration as a guide to what might transpire. I mentioned this to Stockhausen once when he had asked me what my *secret* was. 'I don't push the sounds around.' Stockhausen mulled this over, and asked, 'Not even a little bit?' (F: 142–43)

> I work very much like a painter, insofar as I'm watching the phenomena and I'm thickening and I'm thinning and I'm working in that way and just watching what it needs. . . . I have the skill to hear it. I don't know what the skill is to think it, I was never involved with the skills to think it. I'm the only one that works that way. (F: 183–84)

> One of the problems with variation in twentieth-century music is that [composers] make the variation too obvious. . . . I am interested now in a lot of music where the variation is so discreet, I would have the same thing come back again, but I would just add one note. Or I have it come back and I take out two notes. . . . Do you hear it? Are you focused enough? (F: 193–94)

Harvey: Centering Experience

Harvey is not embarrassed to speak about what he has experienced while questing for spirit. For instance, he says that encountering Evelyn Underhill's *Mysticism* in 1960 changed his life, and that a little later he read "forty or fifty volumes" of Rudolf Steiner's writings. He found Steiner's views to be "a participatory epistemology beyond the Kantian closure—in which the self and nature are inseparable: one unified interdependency" (H: 4) (cf. Feldman: "If I want my music to demonstrate anything, it is that 'nature and human nature are one' "). In 1977 he encountered Vedic meditation practice, and he began meditating twice a day (reportedly never lapsing for more than a couple of days at a time).

> At one time in my life I often visited Christian monasteries, and I was greatly inspired by the look I would sometimes see in the faces of the contemplatives, a look telling, more than anything else I encountered in life or books, about truth and values. Selfless Christian love leading to profound peace I find again in Buddhism, as I do in Vedic and Anthroposophical experience of higher consciousness. (H: 6)

Harvey's understanding of the positive value of Buddhist "emptiness" seems to me to be exactly right, although I take issue with his idea that scientific empiricism and uncertainty, the "perspectival nature of 'facts,'" and postmodernism "in all its forms" are necessarily nihilistic views:

> To me, the most profound way of thinking that reconciled such nihilistic views with my spiritual certainties was Buddhist. When encountered superficially, Buddhism, with its doctrine of emptiness, the idea that nothing, not even oneself, has inherent existence outside self-grasping delusion, can seem quite nihilistic. In fact, how-

> ever, it embraced much of what is now current in critical theory, Derrida, and Lacan millennia ago, emerging as a blissfully happy and fulfilling, compassionate and ethical, way of life. (H: 5–6)

Harvey and Feldman have both, in different ways, addressed the problem of describing the experience of nonduality that vertical listening can make possible.[12] The difficulty, of course, is that nonduality is no longer "nondual" once it has been reduced to an abstract verbal code. As soon as we begin to *explain*, we enter the land of metaphor. (As the General Semanticists say, "The word is not the thing.") "Spirit," then, can be indicated only *very* indirectly with words. In Harvey's discussion of Buddhism, he notes:

> Eastern philosophy differs from Western in its reliance on *experience* of states of consciousness: one experiences the philosophy rather than thinks it (though some have argued that this puts it outside the scope of philosophy proper). Pure awareness is prior to subject/object duality, or ultimately, in enlightened meditation, posterior to it. When . . . the tension in the I/other ambiguity increases to the point where stability is sought through language, . . . the 'word,' which seems to fix and order things, becomes paramount. In due course it divides the world up according to certain perspectives and leads on to reason, logic, and practical and scientific knowledge.
>
> Music, however, exposes this ambiguity within language-based consciousness. It undoes the 'word' and returns to pure awareness—or at least it gives a glimpse of it. . . . [As] John Rahn put it: 'The experience of music affords a person the chance to think without language, without snipping the experience into discrete "segments" wrapped up into "signifiers" and free of the consequent machinery of negation, polar oppositions such as subject/object.' (H: 48, italics added)

Harvey responds to this "snipping [of] the experience into discrete 'segments' wrapped up into 'signifiers'" by noting what he feels to be music's fundamental unity: "[T]he unity of rhythm, pitch, and color, as Stockhausen long ago observed, is shown to be, like the rest of the universe, all a matter of tempo, of speed, of energy" (H: 59–60). One obvious example of language's power to fracture musical reality is that of "pitch": Pitch exists as a discrete entity only as a word or as an item of notation. Sonically, there is no such thing as a pitch that has no timbre, or a pitch without volume or duration. And if the pitch is lowered enough, it begins to sound like an audible pulse. Yet our verbal and notational abstractions of "pitch" eliminate all other attributes of the audible tone.[13] Harvey quotes another writer,

who says, "Music is about 'one knowing,'" which means that we cannot analyze musical meaning without analyzing ourselves.

> In that phrase, *one* is both subject and object: 'knowing one thing' and 'one person knowing' are rolled into a single notion. 'One who knows' would bring back duality, but in the phrase 'one knowing' we can sense the unity we experience in music when we lose ourselves in the awesome, higher harmony that music can be. (H: 49)

This also means, of course, that there is no musical meaning independent of the perceiver. "Music is not *really* frightening, angry, joyful, or anything else; nevertheless, we readily construct thought-forms and give them reality as projections onto the sounds, remaining all the while more or less conscious of the elaborate artifice in which we are engaged" (H: 83–84).

> As listeners, we respond from our own past memories, the shrapnel fragments embedded in our own buried psychic world that are summoned to life by sympathetic resonance with the vibrations of the music. . . . One person will remember a childhood adventure, another will relive a romantic moment, another will recall a crisis or trauma—though the memories may consist of little more than the traces of these experiences, their surface detail being no longer recoverable. (H: 31)

Consciousness, then, is individual. As for the unconscious, Harvey is not sure whether it is individual, as Freud thought, or collective, as the Jungians (and Stockhausen) believe, but he says, "[T]he place from which inspiration comes is undeniably unconscious" (H: 20).

Harvey also addresses the fact that "the listener"—even if only one person—is not unchanging; rather, the listener is dynamic, and there is an evolving relationship between art and auditor. And if *we* are dynamic entities, and the relationship between us and the music is one that evolves, then unless the labels we use to designate "music" and "listener" are verbs, the labels may have only fleeting applicability.

> A lot has been written about what music reflects, or does not reflect, in psychic life, in social life, and so on. Such accounts have mostly suffered from too static a portrayal of the listener. It's not a case of the solid listener witnessing a changing and fluctuating representation of some sort, nor does the music depict how the psyche works, or express emotion in any simple sense. We are ourselves volatile; we are constantly changing. When we listen to music we, as well as the music, are on the move, constantly reconstituting our

selfhood, redefining ourselves, perhaps more intensely than usual. (H: 29)[14]

Feldman: Prophets and Priests . . .

Where do music historians place Morton Feldman? Here is a man who, although trained in Western techniques of creating music through the use of the major "systems" (mostly tonal or twelve-tone), largely eschewed much of this training in many of his mature works. Although disciplined, he was an "intuitive" composer, which meant that starting a school of composition in the same way that Schoenberg did was out of the question.[15] He claims to have received most of his important inspiration from the painters with whom he associated—and from John Cage.

Feldman has a lot to say about artists and their imitators and critics, and about the difference between artistic creation and cultural reproduction. The difference between artists and pedagogues, curators, and scholars has sometimes been compared to the difference between prophets and priests. Harvey, in *Music and Inspiration* (see note 1), states explicitly that for those composers whose ultimate musical goal is the "communication of a vision of paradise . . . the composer is the prophet, responsible for guiding mankind on the long and sometimes treacherous road to religious revelation" (1999b: 154).

This is a complex issue, and it may help to cite a couple of other sources that have addressed the topic. Georgina Born, for example, in her study of IRCAM, raises the prophet/priest comparison for musicians specifically:

> In terms of microsociology, Bourdieu contrasts two kinds of authority in legitimate culture akin to Weber's distinction between the roles of priest and prophet/sorcerer. . . . First, the institutionalized authority of the teacher or curator responsible for pedagogy, devotion to tradition—essentially for reproduction. Second, the authority of the artist or creator with prophetic ambitions, which is personal and rests on flashes of originality. (Born: 28)

Because Feldman makes the same point regarding the economic realities of artistic creation, it may be worth citing Weber directly by noting that he also makes the case that the "prophet" (i.e., composer) produces "work" even without remuneration: "This criterion of gratuitous service also distinguishes the prophet from the priest. The typical prophet propagates ideas for their own sake and not for fees, at least in any obvious or regulated form" (Weber: 255). Often, gratuitous service is provided because the prophet/artist feels compelled to utter/create, regardless of

material compensation. This feeling of being compelled is sometimes described as heeding a personal "call," which, for the prophet or artist, may transcend or supersede the legitimate, bureaucratic authority with which corporate enterprises are invested. The prophet or artist's political power is due instead to his or her personal "charisma." In *On Charisma and Institution Building,* Weber examines charisma in his discussion of the differences between the priest and the prophet:

> [T]he personal call is the decisive element distinguishing the prophet from the priest. The latter lays claim to authority by virtue of his service in a sacred tradition, while the prophet's claim is based on personal revelation and charisma. It is no accident that almost no prophets have emerged from the priestly class. . . . Even in cases in which personal charisma may be involved, it is the hierarchical office that confers legitimate authority upon the priest as a member of a corporate enterprise. (Weber: 254)

Besides pedagogy and administration, the priest's role is that of explication, criticism, scholarship, and canon form(ul)ation. In *Give My Regards* Feldman comments on some of the differences between visionary artists (i.e., those who "produce") and those who "reproduce" (even if they are also artists): "In music, when you do something new, something original, you're an amateur. Your imitators—these are the professionals" (F: 23). Prophets or artists who end up being influential are those whose memory comes to be taken care of by "priests" (i.e., historians, curators, critics—in short, canon formulators) and imitators. Feldman also makes the point that during the modernist era most prophets required "disciples" (i.e., imitators) in order to be influential. "It may sound paradoxical, but Kafka, Mondrian, and Webern have never been influential. It's their imitators that are influential. That's what gives every artist his real prestige—his imitators" (F: 57).

> It is these imitators who are interested not in what the artist did, but the means he used to do it. This is where craft emerges as an absolute, an authoritarian position that divorces itself from the creative impulse of the originator. The imitator is the greatest enemy of originality. The 'freedom' of the artist is boring to him, because in freedom he cannot reenact the *role* of the artist. There is, however, another role he can and does play. It is this imitator, this 'professional,' [who] makes art into culture.
>
> This is the man who emphasizes the historical impact of the original work of art. Who takes from it and puts to use everything that can be utilized in a collective sense. Who brings the concepts of virtue, morality, and 'the general good' into it. Who brings the world into it.

> Proust tells us the great mistake lies in looking for the experience in the object rather than in ourselves. He calls this a 'running away from one's own life.' How many of these 'professionals' would go along with this kind of thinking about art? They give us continual examples of looking for the experience in the object—in their case, the system, the craft that forms the basis of their world. (F: 23)

Another way of saying this is that the mandarin orientation of the historical study of cultivated music requires a different sort of mental focus and perspective than does the creative and entrepreneurial ethos that is required for artistic creativity. Born highlighted this difference in her delineation of the marked contrast between the "chronic aesthetic uncertainty" about the quality of the compositions produced by IRCAM composers (i.e., the "production phases") and the bullish attitudes (or "reproductive certainty") evident in IRCAM's list of approved composers and works—which she labels "IRCAM's canon"—played during IRCAM's *Passage du Vingtième Siècle* concert series in 1977 (Born: 173). This attitudinal difference is reflected in Feldman's statement that the twentieth century "is more an age that has been taken over by music history rather than music making" (F: 209). Feldman is not without sympathy for the audience, however:

> [T]he love of the past in art is something very different to the artist than it is to the audience. . . . The audience feels the loss in change more crucially than the artist, because it loves art with the passionate love one gives a thing one can never really possess. What it incessantly demands of the artist is for him to make up for this loss. But it is very hard for the artist. He feels the audience is suffocating art with its love and concern. He doesn't understand the nature of their love, or the nature of their loss. (F: 31–32)

> The truth is, we can do very well without art; what we can't live without is the *myth* about art. The mythmaker is successful because he knows that in art, as in life, we need the illusion of significance. He flatters this need. He gives us an art that ties up with philosophical systems, an art with a multiplicity of references, of symbols, an art that simplifies the subtleties of art, that *relieves* us of art. (F: 57)

The references and symbols to which Feldman refers above are particularly important to scholars and critics because they must have something to *talk* and *write about*. Artists, on the other hand, generally need the myth less (if at all). Another way of saying this is that artists use the past in ways that are fundamentally different from the ways in which scholars, critics, and curators use the past.

> Until the fifties the artist believed that he could not, must not, improvise as the bull charged—that he must adhere to the formal ritual, the unwasted motion, the accumulated knowledge that reinforces the courage of the matador, and that allows the spectator the ecstasy of feeling that he too, by knowing all that must be known to survive in the bullring, has himself defied the gods, has himself defied death. (F: 100)

The "trouble" with systems is that they allow compositions to be easily analyzed as isolates (i.e., apart from their composers). Yet this is, of course, the reason for the existence of "systems" (and for notation generally). To professionalize (i.e., to separate the work from the idiosyncrasy of individual personality) is one of the primary goals of most corporate endeavors. There can be no large-scale sociocultural reproduction without a *system.* In other words, unless the prophet's insights are abstracted into systematized prescription, there can be no priests and no organized religion.

Prophets, however, feel that they themselves, rather than any institution, bear what might be called "the true message." This doesn't so much mean that they feel no connection to the past as it does that their relationship to the past is fundamentally different from that of historians:[16]

> So I didn't come up through regular music circles. . . . Radical composer, they say. But you see I've always had this big sense of history, the feeling of tradition, continuity. With Mme. Press at twelve, I was in touch with Scriabin, and thus with Chopin. With Busoni, and thus with Liszt. With Varèse, and thus with Debussy, and Ives and Cowell, and Schoenberg. They are not dead. (F: 120) . . . I have the feeling that I cannot betray this continuity, this thing I carry with me. The burden of history. (F: 121)

. . . and Quotations

Feldman was often outspoken about other composers in ways that probably didn't serve to endear him to them, and in this collection he is often very direct about how unimpressed he was with many of his peers, including some of the century's most celebrated composers. Earle Brown and Christian Wolff receive the Morton Feldman stamp of approval in a couple of places in the book, but the only older composers who receive unstinting praise throughout the text are Cage and Varèse. The poet Frank O'Hara (who had been a music major at Harvard) and an army of painters receive approbation, but almost no composers.

Feldman had a gift for the epigraphic, the *bon mot,* the riposte—and in fact, *Give My Regards* ends with a short collection of such quotes—which he often used in the service of his polemics. Here's a relatively nonpolemical sampler:

I have always found it more beneficial to experiment with fountain pens than with musical ideas. . . . [Practicality] brings us closer to the work, establishing a rapport with it, rather than encouraging a network of ideas that keeps us outside it. (F: 63) . . . One of the reasons I continue to write at the piano is to help me from the 'imagination.' Having the sounds continually appearing as a physical fact wakens me from a sort of intellectual daydream. (F: 206)[17] . . . As a rule I write in ink. It sharpens one's concentration. Erasure gives you the illusion you're going to find a more meaningful solution. . . . When you write in ink you realize that it is the *concentration* you're after and not ideas. (F: 207)

I feel a lot of Webern's subsequent orchestration . . . was somewhat arbitrary. (F:160) . . . [Y]ou just can't take a row and give it to a piccolo and then give the other segment to the double bass. You can't be insensitive to the pitches here, . . . how they speak and go on. So, that whole Darmstadt world, or the Webern influence, is that essentially instruments were used just as another denominator of variation. And very few were sensitive to the instruments playing those notes. (F: 161)

[Y]ou don't want to reveal your ideas the way Webern revealed his structures by his instruments. Webern does not orchestrate. He gives you the instruments and he presents his ideas like a lecture, with the instruments. We have to be careful not to do that. (F: 191)

Varèse had (and continues to have) immense importance to me. Perhaps this is because his music, unlike that of Webern or Boulez, does not have the character of a confined 'object.' Varèse's compositional tool seems geared only to his own dictum of what he calls 'organized sound.' (F: 16)

My only argument with Cage, and there is only one argument, is with his dictum that . . . 'Everything is music.' Just as there is an implied decision in a precise and selective art, there is an equally implied decision in allowing everything to be art. There is a Zen riddle that replies to its own question. 'Does a dog have the Buddha nature?' the riddle asks. 'Answer either way and you lose your own Buddha nature.' Faced with a mystery about divinity, according to the riddle, we must always hover, uncertain, between the two possible answers. Never, on pain of losing our own divinity, are we allowed to decide. My quarrel with Cage is that he decided. A brilliant student of Zen, he has somehow missed this subtle point. (F: 29–30)

> What is unique about Earle Brown is that while he possesses a mind superbly geared toward the analytic, he has nevertheless rejected the idea of system. 'What interests me,' Brown writes, 'is to find the degree of conditioning (of conception, of notation, of realization) which will balance the work between the points of control and non-control. . . . There is no final solution to this paradox . . . which is why art is.' (F: 42)
>
> Like politics, [art] is dangerous insofar as it is Messianic. Nono wants everyone to be indignant. John Cage wants everyone to be happy. Both are forms of tyranny. . . . But if art must be Messianic, then I prefer my way—the insistence on the right to be esoteric. (F: 81)
>
> [M]usical forms and related processes are essentially only methods of arranging material and serve no other function than to aid one's memory. What Western musical forms have become is a paraphrase of memory. (F: 137)
>
> Music seems to be understood best by its proximity to other music that is more familiar. We do not hear what we hear . . . only what we remember. (F: 209)
>
> All this aura of freedom. Yet it is self-evident that art is the antithesis of freedom. (F: 210)
>
> The only time an artist gives up his ideas is when a better past comes along. (F: 210)
>
> Why is it that even asymmetry has to look and sound right? (F: 138)
>
> [W]hat I am suggesting is . . . that the chronological aspect of music's development is perhaps over, and that a new 'mainstream' of diversity, invention and imagination is indeed awakening. (F: 151)

* * *

There is really nothing about these books that I dislike. *Give My Regards to Eighth Street* is a collection of generally short prose pieces that Feldman probably never conceived as constituting a single "book," and B. H. Friedman can only be commended for the editorial work that was invested in producing this text.

Harvey's *In Quest of Spirit* is not a technical exposition of Harvey's programming or general computing skills; it is not even about the technical aspects of composition. The book is for readers who have some degree of

education in the tradition of Western cultivated music and, preferably, some interest in spectral composition. What Harvey is concerned to show is the importance of ethics to his compositional "project," and how his quest for what he finds ultimately valuable (i.e., spirit) informs the composition of his music. (I did find myself thinking, however, that he might have mentioned, perhaps in a short appendix, at least the most important parts of the "instrumentation" of the electronic pieces—i.e., the hardware and software used to produce the sounds.)[18]

Postlude

> *I came across this remark by Mies van der Rohe, which I agree with completely. . . . He said, 'I don't want to be interesting, I want to be good.' [200]*
> —*Morton Feldman*

What do we want music for? What sorts of music do we study? Academies and conservatories have always privileged music that isn't obviously utilitarian. Formerly, music that the socially privileged found sensuously *attractive* was canonized. In the twentieth century, however, the emphasis on analysis put the onus on young composers in the academy to produce music that is "interesting."[19] This emphasis tended to omit music that is *only* emotionally gratifying. As Jonathan Kramer writes elsewhere in these pages, music that is only attractive is "dismissed in academic circles." The reason for the dismissal is that it is an important part of the modernist musical worldview that the sonic structures of compositions produced in the academy—particularly in the research university—are able to be *described* using relatively sophisticated analytic language.[20]

In his own article in this issue of *Current Musicology*, Larry Read writes that in much of his music "free expression is harnessed to, though not entirely contingent upon, generative processes that are impersonal and mechanical." Fred Lerdahl writes that he has always been attracted to systematic approaches to composition but that he doesn't "hide behind a hard mask and deny personal expression, a posture that seems to me sterile." Neither Read's use of impersonal processes nor Lerdahl's attraction to systematic approaches denies their need for personal expression or obviates the value of intuition. And in any event, it's difficult to get entirely away from "systems": isochronal composing is "systematic," minimalism is "systematic," tonality is a "system," serialism is a "system" . . . I'll have to disagree with Feldman. There's nothing inherently wrong with "systems," but surely the desire to impose one's own favorite system on everyone else was an unhealthy symptom of modernism.[21]

As noted above, the whole point of a compositional system is that it seems to allow the works it informs to be more easily separated from the context of the composer's personal experience. Ostensibly, others may adopt the system with no violence done to it whereas we may feel that one composer's appropriation of another composer's eminently personal approach is somehow inauthentic. And perhaps this is why personal experience is marginalized in academia (and indeed, many would argue that the non-abstract is not—or should not—be a part of academia proper).

In her study of IRCAM, Born quotes Kerman during her discussion of the increasing presence of overt "theory" in the compositional process: "'Much of the power and prestige of theory derives from its alignment . . . with the actual sources of creativity on the contemporary musical scene'" (Born: 53). It seems to me, however, that Kerman has it backward: I would say that the power and prestige of academic composition derives from its alignment with music theory. (My contention is strongly supported by the fact that most doctorates in composition require a theoretical essay—i.e., an "analysis"—that explicates and, hopefully, justifies the piece's existence, but that Ph.D. candidates in music theory are almost never expected to justify their research with original compositions to be presented during doctoral defenses.) Feldman also addressed the issue of the relative power of theory/analysis:

> Boulez wrote a letter to John Cage in 1951. There was a line in that letter I will never forget. 'I must know everything in order to step off the carpet.' . . . Was it love of knowledge, love of music, that obsessed our distinguished young provincial in 1951? It was love of *analysis*—an analysis he will pursue and use as an instrument of *power.* (F: 60, 61)

Born aptly captures the high- and late-modernist attitude toward excessive theorization, writing that "the constant conceptual foraging for scientific analogies to structure composition . . . evidence a continuity with deeper characteristics of musical modernism. [It] should be grasped as an extreme contemporary expression of modernist theoreticism, the tendency for theory to become prior to, prescriptive of, and constitutive of compositional practice" (Born: 197). Or, as Feldman has said about painting: "With Cézanne it is always how he *sees* that determines how he thinks, whereas the modernist, on the other hand, has changed perception by way of the conceptual. In other words, how one *thinks* has become the sensation" (F: 68).

The analytic approach of breaking things apart yields only the answers that analysis can provide. Analysis as usually practiced tends to freeze

processes so that constituent parts may be more easily examined. Instead of looking at only *parts,* however, we might also show how *wholes* are parts of larger wholes, *which includes seeing how composers and other musicians are parts of larger wholes.* This is essentially an anthropological and even ecological perspective, and is why I asked for something other than only a structural analysis in my solicitation letters to the composers whose articles appear in these pages. "Who are you?" requires that the composer place him- or herself, perceived as *currently* constituted (see Harvey's remarks on the volatility of auditors), within the context of his or her time and place. This means putting the individual back at the center of "analysis."[22]

The emphasis on "process regardless of product" came to be a peculiarity of modernist composition. The various means often seem to have been more important than their ends, and is what both the conceptualists and the serialists had in common: a focus on procedure regardless of outcome that was at times insistent and even dogmatic.[23] In addition, the exclusive emphasis on the construction of notational systems has often meant ignoring the realities of performance.[24]

It is probably necessary at this point to state that I don't think that rigorous, knotty music has no place in the university. It should also be said that, as far as I can tell, university composition programs are generally far more open to all sorts of musical creation than they were even ten to fifteen years ago. What I *am* saying is that music whose sonic structure is not *idiomatic* to the act of complex verbal explication or notational analysis was (and still is, in many music departments across the country) marginalized in academia. This is now changing, to some degree, but if university composition professors are going to be less restrictive in regard to the types of music they allow their graduate students to produce, yet still require analyses that have some value, they might seriously consider asking their composition students to place *themselves* at the center of their analyses. This shift of analytical focus could profitably be required even of those composers whose "systematic" compositional methods allow them to more easily hide their personalities behind more impersonal procedures. In other words, individual composers should be regarded as legitimate "objects" of analysis even when they are involved with obviously systematic approaches to composition.

As noted earlier, Feldman maintained that working without "systems" would not allow one to evade compositional problems, and this is essentially the reason why I asked for something more than just a structural analysis from the composers whose articles appear in this special issue of *Current Musicology.* Talking about the compositional system may help composers to avoid talking about themselves; however, if we really want to gain a greater understanding of how the music came to be created (rather than

studying only scores, or merely letting the music evoke for us whatever the combination of sounds interacting with our imaginations will evoke), then we need to understand the composer.[25]

Whatever is created in academia must be *explicable.* Furthermore, it is the awareness of analysis "before the fact" that ends up informing the type of art produced. The knowledge that an "analysis" of the piece might be required to justify the composition of the piece leads the creator to synthesize the components of the artwork in ways that are amenable to the sort of analysis s/he is prepared to produce. In fact, in the case of many graduate student composers, the analyses and theoretical essays that accompany their D.M.A. compositions are written before the music is composed. There is nothing particularly wrong with this, and in any case is only to be expected if university composition programs are committed to producing only music that lends itself easily to notational analysis and/or complex verbal theorization of its sonic properties. I am reminded, however, of Louis Menand's statement that "theories are just one of the ways we make sense of our choices" (qtd. in Dickstein: 369). The other ways must include an honest account of who we are: Who are we that we create and study the musics that we do?*

Notes

1. I say "abiding interests" because Harvey published another book in 1999, titled *Music and Inspiration.* Its four chapters are "The Composer and the Unconscious," "The Composer and Experience," "The Composer and the Audience," and "The Composer and the Ideal." All of these help to implicitly identify the composer (cf. chapter 1 of *In Quest of Spirit*), and one of the section headings in chapter four is "Unity" (cf. chapter 3 of *In Quest of Spirit*).

Although there is no space in this essay to properly review *Music and Inspiration,* it is nonetheless of interest. In its preface, Harvey writes: "It was in 1964 that this book took its first form, as a doctoral thesis. Cambridge University, where I was a student, had disapproved of the subject and tried to steer me towards seventeenth-century musicological topics. I refused this temptation rather easily, and made off to Glasgow University" where, he writes, both he and his topic were welcomed with open arms. And for 33 years, "that was that," until, with the editorial assistance of Michael Downes, Harvey reworked the thesis into a book, thus yielding *Music and Inspiration.*

Essentially, this book comprises a substantive compendium of quotations—over 200 extracts (and probably an even greater number of shorter quotes) of statements that have been made by over 60 composers from the Western cultivated tradition—that address some aspect of the topic of music and inspiration.

It is notable that so many composers *have* written about what Harvey says (in *In Quest of Spirit*) is essentially an unconscious process, and on this topic Harvey has read widely of his peers. From Babbitt to Bartók, Mahler to Musgrave, Ravel to

Rorem, Sessions to Sibelius, Vaughan Williams to Webern, Ferneyhough to Fürtwangler (who composed as well as conducted)—Harvey presents in *Music and Inspiration* a comprehensive account of Western composers' thoughts on this topic.

2. To help avoid confusion, I will preface the page numbers of Feldman's statements with "F"; Harvey's page numbers will be preceded by "H."

3. The "other man" was Milton Babbitt. Varèse wrote: "It seems to me that [Babbitt] wants to exercise maximum control over certain materials, as if he were above them. But I want to be *in* the material, part of the acoustical vibration, so to speak. Babbitt composes his material first and then gives it to the synthesizer, while I want to generate something directly by electronic means. In other words, I think of musical space as open rather than bounded. . . . I do not want an *a priori* control of all its aspects" (qtd. in Weiss and Taruskin: 522).

4. Feldman's statement that all we are left with is a question of character is reminiscent of the traditional (particularly Eastern) approach to pedagogy, in which a student comes to master an art at the same time that s/he learns of the aesthetics (and ethics) of the mentor by being in the teacher's presence and watching him live his life—rather than merely analyzing finished artworks.

5. This topic has been addressed by a number of composers. Among those who write sophisticated, "knotty" music, there are those who believe that, regardless of how sophisticated the precompositional scheme, the music must still mean something aurally; there are also those who feel (together with, reportedly, Boulez) that the interest, and even pleasure, of music is to be found in the contemplation of its "systematic" construction as presented on paper. Elliott Carter is a good example of the former group:

> It's obvious that the real order and meaning of music is the one the listener *hears* with his ears. Whatever occult mathematical orders may exist on paper are not necessarily relevant to this in the least. . . . [I]f what I come up with . . . is unsatisfactory from the point of view of what I think is interesting to *hear*, I throw it out without a second thought. (qtd. in Fisk: 372)

Milton Babbitt and some of the New Complexity composers are examples of the second group mentioned above:

> [T]he twelve-tone system . . . has opened the way to certain modes of thinking about musical progression, structure, richness, and reach of relationships, of relatedness, depth, and scope of reference, in a way that I could extend personally, that interested me more, and that was simply not available with regard to so-called tonal material. (Babbitt, qtd. in Fisk: 396–97)

Babbitt indicates where his priorities lie by using the term "thinking about" in the above extract. This view was made even more explicit a few years ago, when one of the world's leading composers of what has come to be called New Complexity stated in a public talk at Columbia University that he found the intellectual contemplation of his music "rather erotic," and that an actual performance of it was somewhat beside the point. Carter again:

> [T]hese systems are perfectly fine as abstract schemata of one kind or another, but are often useless for musical purposes, simply because they don't have any particular relation to the composer's desire to communicate feelings and thoughts of many different kinds, which . . . are logically prior to the evolution of any system. This lack of relation to

> the composer's desire to communicate goes together with the fact that these systems lack any relation to the *listener's* psychology of musical hearing. (qtd. in Fisk: 371–72)

6. Further to "pervasive silence": In 1999—the same year that Harvey's *In Quest of Spirit* and *Music and Inspiration* were both published—Faber and Faber published Tavener's *The Music of Silence.*

7. Cf. Arvo Pärt: "I have discovered that it is enough when a single note is beautifully played" (qtd. in Duckworth: 164).

8. Cf. Canadian composer R. Murray Schafer: "In Western society, silence is a negative, a vacuum. Silence for Western Man equals communication hang-up. If one has nothing to say, the other will speak; hence the garrulity of modern life which is extended by all kinds of sonic jabberware" (Schafer: 256).

9. It should be noted that not all of Feldman's music requires vertical listening to be appreciated. One poignant example of his more syntactically conventional work is the early (1947) song titled "Only" (text by Rilke; trans. by Leishman).

10. Harvey says above that Zen has influenced composers as diverse as Cage and Takemitsu. Perhaps so, but Cage used silence very differently from either Takemitsu or Feldman. I agree with American composer Bruce Adolphe's assessment of *4′33″*:

> Cage's use of silence, though meant seriously, was given a comic patina by the work's title [*4′33″*]; for the concept of exact timing framed the silence as a theatrical event, even suggesting a sports event, and removed the possibility of its natural power. While Cage achieved one goal—Western concert audiences confronting silence head on—the piece remains a prank. (Adolphe: 129)

11. Needless to say, the concept-making mind is endowed with the same basic assets and liabilities whether it is involved with making art or critiquing it. In other words, critiques of art are also failures of a sort, and serve no better to convey Truth than do the artworks they criticize.

12. In regard to the impossibility of "speeching about music" because of nonduality: Mahler made the same point in a different way when he wrote, "[S]o long as I can sum up my experience in words, I can certainly not create music about it. My need to express myself in music symphonically begins precisely where dark feelings hold sway, at the gate that leads into the 'other world,' the world in which things are no longer divided by time and space" (qtd. in Fisk: 190).

13. Scholars from many different disciplines have commented on this topic. Science historian R. G. H. Siu makes the same point with reference to an example from the natural sciences: "Boyle's law . . . stipulates that at a constant temperature, the volume of a gas varies inversely as the pressure. If we merely follow the words, the three entities of temperature, pressure, and volume are given individual existences. In reality this is not so and more people are recognizing the fact" (Siu: 52–53). Siu also writes, however, that "dwelling on finite chips from the infinite actuality . . . is necessary for discursive thought" (Siu: 66) (cf. Harvey: Language "divides the world up . . . and leads on to reason, logic, and practical and scientific knowledge").

14. Harvey's statement that music's meaning is different from listener to listener and, especially, that we listeners are "volatile" and "constantly changing" may

seem chaotic to some. Copland's response to this issue is succinct: "The precise meaning of music is a question that should never have been asked, and in any event will never elicit a precise answer. It is the literary mind that is disturbed by this imprecision" (Copland: 13).

15. Just as there are two major viewpoints, even among "rigorous" composers, with regard to the aural relevance of precompositional schemes, there are also two major viewpoints with regard to the teaching of music composition. Schoenberg sought disciples in an attempt to propagate through them his invented twelve-tone composition system. Other composers have felt differently, as shown by the following statements made by Debussy, Satie, and Ligeti, respectively: "There is no Debussy school. I have no disciples; I am myself" (qtd. in Duckworth: 8). "*There is no school of Satie.* Satieism could never exist. I would oppose it" (qtd. in Fisk: 225). "I am constitutionally an anti-educationalist, and in any case you cannot teach composition" (qtd. in Fisk: 408).

Not all composer-teachers, of course, attempt to influence their students to compose like the teacher, but some *do* (although I suspect that this sort of coercion is not now as prevalent as it once was). Poulenc: "[H]ow dangerous are the lessons taken from the great composer-teachers. In Los Angeles the young musicians write like Schoenberg, in Boston like Hindemith. Milhaud alone, to the gratitude of his students, maintains in San Francisco a climate of eclecticism" (qtd. in Fisk: 341).

16. This idea that the prophet/composer often feels directly connected to past prophets, and that this "internal lineage" may have nothing to do with where he actually went to school, has also been noted by Harbison:

> I have come to believe that a composer begins early constructing his own history of music, one that has nothing to do with the official hierarchies. The writings of Wagner, Debussy, and Stravinsky attest to the efficacy of this practice and, increasingly in modern times, composers from Boulez to Rochberg have also written history to lead inexorably to them. We must do this. (qtd. in Fisk: 469)

17. Cf. Stravinsky: "I think it is a thousand times better to compose in direct contact with the physical medium of sound than to work in the abstract medium provided by one's imagination" (qtd. in Fisk: 287–88).

18. One other very minor grievance: In providing support for his point that "intervallicism seen in spectral light" is essentially "the symbolic world seen in the larger perspective of the semiotic one" (H: 42), Harvey quotes eight lines of text from Tang Dynasty poet Han Shan, but doesn't provide the translator's name. (Han Shan is one of my favorite poets, and a quick look at only my own personal collection of Han Shan in English reveals that Burton Watson, Arthur Waley, Gary Snyder, Peter Harris, Robert Henricks, and Edward Schafer have all published translations of this eighth-century poet; if Harvey translated it himself, there is no indication.)

19. Messiaen reportedly said, "A piece of music must be interesting, it must be beautiful to hear, and it must touch the listener. These are three different qualities" (qtd. in Duckworth: 64).

20. The emphasis on description and analysis of decontextualized events is another way of saying that academics often privilege what might very generally be

called left-hemispheric processing. Kemp, for example, cites studies that show that "brain scans reveal conclusively that atonal and discordant music stimulates the left hemisphere, . . . [which] suggests that the music of different composers will reflect their originators' cerebral dominance" (Kemp: 131).

21. Cf. Boulez: "[S]ince the Viennese discovery, every composer outside the serial experiments has been *useless*" (qtd. in Weiss and Taruskin: 507).

22. Ravi Shankar has spoken of the need for musicians to *study themselves* as well as the ragas: "Unfortunately, too much stress is placed on technical studies and forms. . . . It takes many years of profound study of one's own inner self and of the *ragas* to be able to play Indian music with the immense emotional and spiritual effect [*sic*] that the music calls for" (Shankar: 15).

23. Ingram Marshall has addressed this issue with regard to the privileging of "system" over personal expressions of beauty: "[T]he 'gang of four'—Stockhausen, Boulez, Cage and Babbitt—banished lovely things from modernism, beautiful things. Although Cage would never say it like that. He would certainly, in his philosophy, allow anything, but I know personally that he was always uncomfortable with music that was expressive. It was basically not where he was going, and he took along a lot of people on that ride, as did European serialists like Boulez and Berio" (qtd. in Smith and Walker Smith: 178).

24. In his recent historical survey of American cultivated music, Struble goes even further: "[A] great deal of the new music, both of the academic serialists and the aleatorists, written in the 1950s, 1960s and 1970s trivialized the training and artistry of serious performers, or presented them with technical demands that frankly exceeded the value of the resulting piece" (Struble: 355).

25. A number of composers have spoken of the need for musicologists and critics to take more seriously the composers' own words about music. Near the beginning of *Music and Imagination,* Copland wrote:

> A well-known conductor once confided to me that he invariably learned something from watching a composer conduct his own composition, despite possible technical shortcomings in conducting, for something essential about the nature of the piece was likely to be revealed. I should like to think that an analogous situation obtains when a composer articulates as best he can the ideas and conceptions that underlie his writing or his listening to music. If my conductor friend was right, the composer ought to bring an awareness and insight to the understanding of music that critics, musicologists, and music historians might put to good use, thereby enriching the whole field of musical investigations. (Copland: 3)

* My thanks to Joyce Tsai and Rebecca Kim for their critiques of an earlier version of this paper.

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Leaving the Ivory Tower

By Dan Wanner

My decision to be a composer was informed by a process of elimination as much as by my talent-driven desire to write music. Growing up in Miami Beach, I had a dedicated piano teacher, but my many years of half-hearted study as a child and teenager eventually led me to eliminate performing as a career option. I then followed a fairly typical progression, clambering from disheartened pre-med student to ecstatic music major to bewildered D.M.A. candidate—guided by teachers who led me from a period where I could write pages of music every day to a period where I could write a single page of music every year. Exaggerations aside, my mentors by and large knew when to lead and when to let me wander along my own course, and I will be forever grateful for their efforts. Indeed, if not for a particularly energetic graduate student exposing me to the joys of *Rite of Spring* and *Music for Strings, Percussion, and Celesta,* I would never seriously have considered music as a profession. My brief career as a professor turned out to be a mixed blessing, as did my even briefer career as a program editor. If not for a revelatory event—which I'll get to later on—I might still be searching for the proper outlet for my creativity.

But first, a brief look at the fruits of my labors as a grad student, as they shed some light on my current compositional techniques. My Piano Concerto is a good example of the type of music I felt compelled to write during my university days. It was written during a scorching New York summer with a fall deadline, which just so happen to be ideal conditions for a composition: I've discovered a distinct need for discomfort to be creative. My best music thus tends to be written (a) on a deadline—perfect for imposing a nervous tension, (b) when the temperature is hot enough for me to perspire onto my manuscript paper—this may have something to do with growing up in Miami Beach, and (c) with strictly imposed limitations—necessity is indeed the mother of invention.

To comply with my last requirement for discomfort, I employ strictly enforced developmental techniques, with a majority of my compositional decisions dictated in some way by the almighty motive. After much experimenting, I determined that the working out of ideas from a central motive or set of motives is far and away the most artistically productive. By "development" I mean having most or all of my gestures follow the essence of a central motive, usually stated at or near the beginning of a work. For me, music has always been about development; nothing beats those moments in music when the potential of a simple concept is realized.

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While incorporating simple developmental techniques, many of my graduate school compositions were also influenced by Schenker's voice-leading, Bartók's formal structures, and the free atonality of Expressionism. Back then I was so enamored of Webern that I avoided all doublings and any possible tonal relations. In other words, I was suffering from a minor case of hyper-self-conscious compositional technique. I chose to compose atonally because, simply put, I like the quality of "crunchy" chords. But even though I took pains to avoid tonal relations in my grad school pieces, I was unable to completely give up on a hierarchy of pitches. I felt that such hierarchies helped define focal points for the listener and that their absence meant a loss of focus, which could not be adequately produced by other compositional techniques. The ensuing struggle to merge atonality and a hierarchy of pitches brought about a number of interesting studies.

This leads me back to my Piano Concerto, a lengthy opus that is currently collecting dust on my bookshelf. A good example of my struggle to work with pitch relations within an atonal language is found in the first movement, which is a series of variations over a ground bass (fig. 1).

Important moments in the subsequent movements are delineated with unison "announcements" of pitches that follow the retrograde of the bass line of the opening passacaglia (fig. 2).

The bass line serves local purposes as well; for example, the harmonic motion of the first variation is based on the retrograde of the initial-theme

Figure 1: Ground bass from the passacaglia of the Piano Concerto.

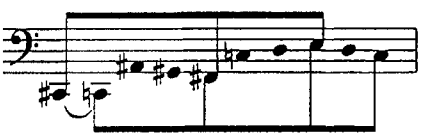
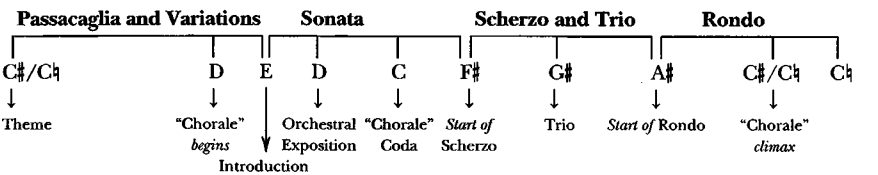


Figure 2: Unison "announcements" in the Piano Concerto.



bass line (fig. 3), and the third variation (a piano solo) begins with a statement of a retrograde (starting on the fifth note) of the bass line (fig. 4).

Another interesting aspect of the Piano Concerto is how it deals with a proportionality of time: the movements were all carefully planned to have an exact temporal relationship to one another. For example, the overall movement lengths are 7.5, 10, 2.5, and 5 minutes (or 3x, 4x, x, and 2x; incidentally, the pitch classes [2 3 0 1] are also important as thematic material). The internal sections of each movement are also related temporally (fig. 5).

However clever this appeared to me at the time—and indeed I thought it was very clever—I was still struck by how arbitrary my compositional decisions seemed, in terms of both pitch and timing. In my next work, *Unitych,* for violin and cello, I avoided such "clever" approaches to my craft —which never really felt natural—and instead focused on making the music as appealing as possible. I wanted to write the type of atonal piece that I hadn't composed before: one that succeeds on a first listening.

Unitych is probably the most successful of my atonal compositions to date; it is five minutes of heady and angry and rhythmically engaging music. I essentially thought of the overall form as a written-out decrescendo, taken from the opening gesture of the piece (fig. 6).

Figure 3: Harmonic motion of first variation as retrograde of bass line.

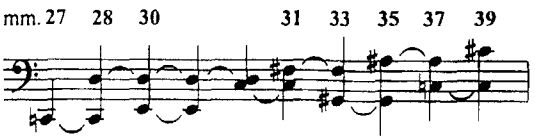


Figure 4: Beginning of third variation as retrograde (R5) of the ground bass.

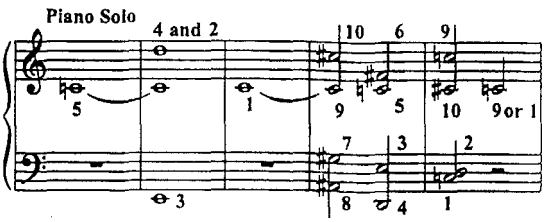


Figure 5: Temporal relationships between movements of Piano Concerto.

Passacaglia and Variations

Theme	Var. 1	Var. 2	Var. 3	Var. 4	Var. 5	Var. 6	Var. 7	Var. 8
1.5 min.	1 min.	.5 min.	1 min.	.5 min.	.5 min.	.5 min.	1.5 min.	.5 min

Sonata

Introduction	Orch+Solo Expositions	Development	(Cadenza)	Recapitulation	Coda
.5 min.	3 min. (1+2 min.)	3 min.	1 min.	2 min. (.5+1.5 min.)	.5 min.

Scherzo and Trio

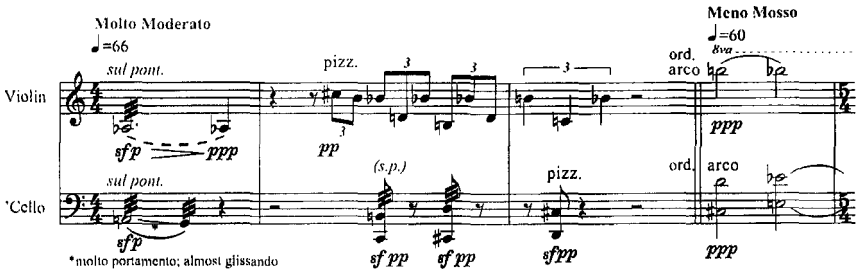
Scherzo	Trio	Scherzo Recapitulation
1 min.	1 min.	.5 min.

Rondo

A	B	A	C	A	"Chorale"	Coda
.5 min.	.5 min.	.5 min.	.5 min.	.5 min.	1.5 min.	1 min.

2.5 min. 2.5 min.

Figure 6: *Unitych,* mm. 1–4.



The decrescendo is one of intensity: the energy accumulated from the violent opening section gradually dissipates as the piece progresses. Unlike the Piano Concerto, *Unitych* succeeds because the motives are simple, the gestures overtly related, the important pitches repeated often enough to get an audible sense of their importance. For example, the opening measures are centered around B♭ (fig. 6), which appears on enough downbeats and accentuated moments that I consider the piece to be "in B♭." Fairly consistent triplet figuration (fig. 7) gives way to a more fragmented texture (fig. 8) and, ultimately, a slow, quiet conclusion.

Figure 7: Triplet figuration in *Unitych.*

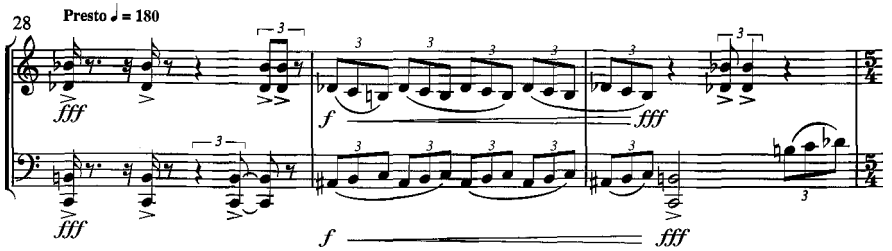
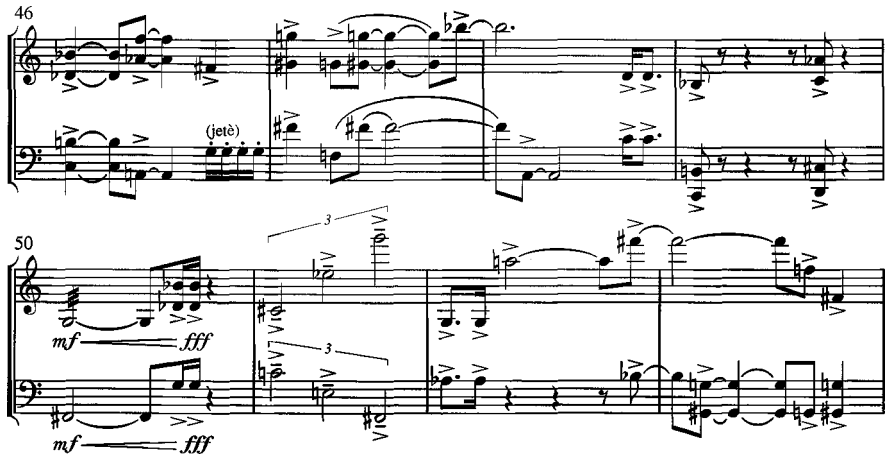


Figure 8: Fragmented texture in *Unitych.*



The choice of motive—the decrescendo—is simplicity itself. I had tried such simple organic compositions for many years; but my earlier efforts—like *Vortex,* which is an attempt at a piece that spins ever faster and intensely toward a center, like a written-out crescendo—are less successful. Thus, *Unitych* succeeds where the Piano Concerto fails, thanks to its clarity: the motive in *Unitych* is easier to recognize, the pitch relations are fairly clear, and the piece is decidedly short—factors that I feel are important when dealing with free atonality.

Still, I was not entirely satisfied with the compositional course I had followed up to this time. Looking back on the Piano Concerto and *Unitych,*

several key questions come to mind concerning my approach to composition, an approach with which I did not feel entirely comfortable for one key reason. Did I approve of the type of development used in such works as *Unitych* and my Piano Concerto, one that is based on a single, relatively simple concept? Yes. Was this kind of developmental music fun to compose? Yes. Is the development (i.e., "fun stuff") audible? Well . . . no. And therein lay my greatest problem—indeed, an ongoing problem.

* * *

In late 1997 I was finishing the final cue of my first film score—to a short movie by a graduate student—and thought some simple piano chords would adequately capture the essence of the scene, which evoked both calmness from a long journey completed and palpable unease regarding an uncertain future. As I worked, I came to the shocking realization that it had been several years since I had written (outside of practice exercises) a major chord in one of my compositions. My fear of major chords was due to that hyper-self-conscious compositional technique I mentioned earlier. I recognized how important it was for me to treat this irrational fear; many "music therapy" sessions dealing with augmented and diminished chords led me to memories of the minor mode and finally ended with that breakthrough moment when I understood the basis of my fear of the major chord. It was a tough process, and I emerged scarred but intact. And although I am still leery of the major mode, I have learned to accept its power and use that power to my own advantage.

An even more important revelation from the film scoring episode was the realization that I loved the whole process of setting a film to music: the interaction with directors and producers, the challenge of writing music to an existing scene, the satisfaction of seeing my name up in lights. Without sounding too melodramatic, I had found a true outlet for my music that finally made sense. With film scoring, my passion for composing had returned, a passion that had vanished since those days before grad school, when I had been able to compose pages of music at every sitting.

I have to admit that I entered the film music scene with some hesitation, partially due to my university background and partially due to my limited knowledge of film music in general. My uncertainty, fueled by my ignorance of film music history, was intensified by how negatively I perceived the Hollywood composer. André Previn, who experienced some backlash from his early Hollywood days, writes in *No Minor Chords: My Early Days in Hollywood* that typically "the maligning comes from people who have never lived there, because if they had they would have found a musical community of the deepest culture and the most remarkable musi-

cians" (qtd. in Thomas 1997: 42). With the popularity of independent films and the emergence of the home recording studio, the film music community is no longer confined to Hollywood. But my own experiences with this new, expanded "Hollywood" film music community—both in the quality of live performance in the studio, and technique among my composer peers—make me wholeheartedly agree with Previn's assessment.

I dealt with my lack of knowledge of film music through study. By approaching the music of my favorite films with the same ears I do classical music, I came to appreciate how much high-quality music has been, and continues to be, written for films. Sure, there is a lot of garbage on the silver screen, but in my experience the ratio of quality music to garbage is about the same in films as it is in the contemporary classical scene. My favorite film scores display a wonderful variety of developmental approaches to music. Take a classic film like the western *Once upon a Time in the West,* where Ennio Morricone's use of developmental techniques in the early scenes accurately mimics the character development later on in the film. Or a less complicated score like the one to the war film *Saving Private Ryan,* where John Williams's transitional passages function both to conclude a scene and to begin a new one, simultaneously releasing tension and building momentum. Or even something like Alan Silvestri's score to the action-adventure sci-fi film *Predator,* which uses simple but engaging motivic development to cleverly derive new thematic material and in turn propel the action forward.

My interest in film music is not really unusual for classically trained composers. A number of "serious" composers have written for films, even back in the days when film music was the ultimate neglected art: Thomson, Copland, Stravinsky, Prokofiev, and Leonard Bernstein are just a few examples. Even today, many composers from the older generation (including James Horner of *Titanic* fame) and the younger generation (including Marco Beltrami of *Scream* infamy) have, or are working on, their doctorates. And don't forget long-time academician John Corigliano's recent Academy Award. Or Tan Dun. Is it possible that the university composer has come to respect Hollywood? It's quite possible, but it's also true that film scoring has the potential to be far more lucrative than academia. And since movies can potentially reach millions of viewers, scoring for films is much more enticing for the composer with a healthy ego, who needs and craves public approval.

Still, as the classic film composer Victor Young wrote, "Why, indeed, would any trained musician let himself in for a career that calls for the exactitude of an Einstein, the diplomacy of a Churchill, and the patience of a martyr?" (qtd. in Thomas 1997: 55). A more modern list would have to include the tough skin of a masochist and the schmoozing skills of a Bill

Clinton. The longer I struggle in the film music industry, the more often I find myself muttering "Why, indeed?" But with film scoring, my passion for composing has returned; for that reason alone the struggles are worthwhile.

My score for the opening credits to *Bigger*, a never-released action film, is at times dissonant and challenging, yet my use of simple motives and rhythmic consistency makes the piece easily accessible. After some introductory flourishes—the C♮ to C♯ dyad establishes itself as the important motive of the cue—the piece settles down into a simple rhythmic ostinato built on quarter-, eighth-, and sixteenth-note patterns (fig. 9).

Harmonically, the piece remains within a tonal framework while using a healthy dose of "crunchy" chords. The bass line, beginning on C♮, gradually moves to a relatively unstable G/C♯ and then back to the relatively stable C♮ (fig. 10) in preparation for a gradual build-up leading to the climax of the piece.

The push to the climax maintains these ostinati, the texture becomes denser, and the instrumental range increases. This culminates in a "stinger," an exact moment on screen that is accentuated by a musical gesture (last beat of m. 32) and an immediate release of the built-up tension (fig. 11). The work ends with a slow, concluding passage in D♭/C♯, so

Figure 9: Rhythmic ostinati in *Bigger*.

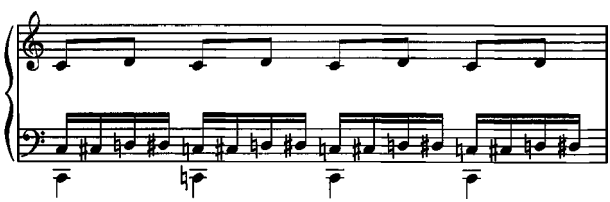


Figure 10: Harmonic motion in *Bigger*.

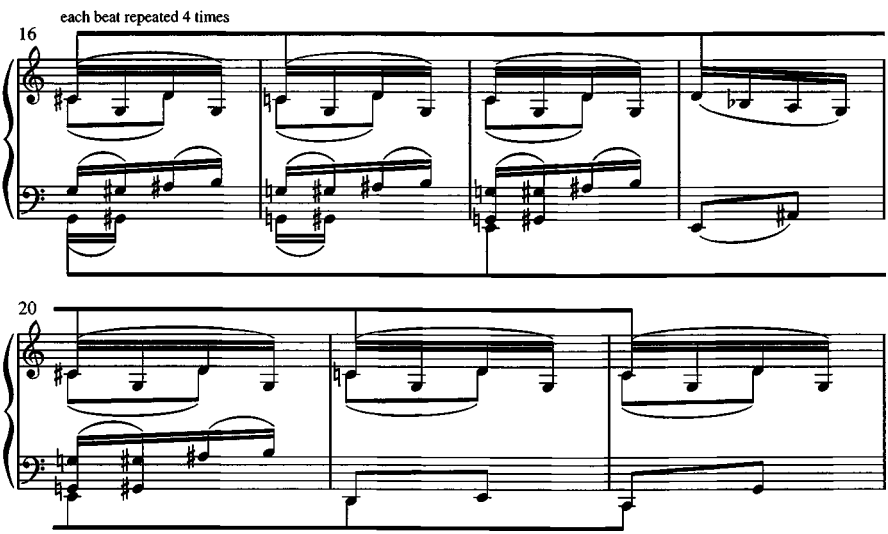
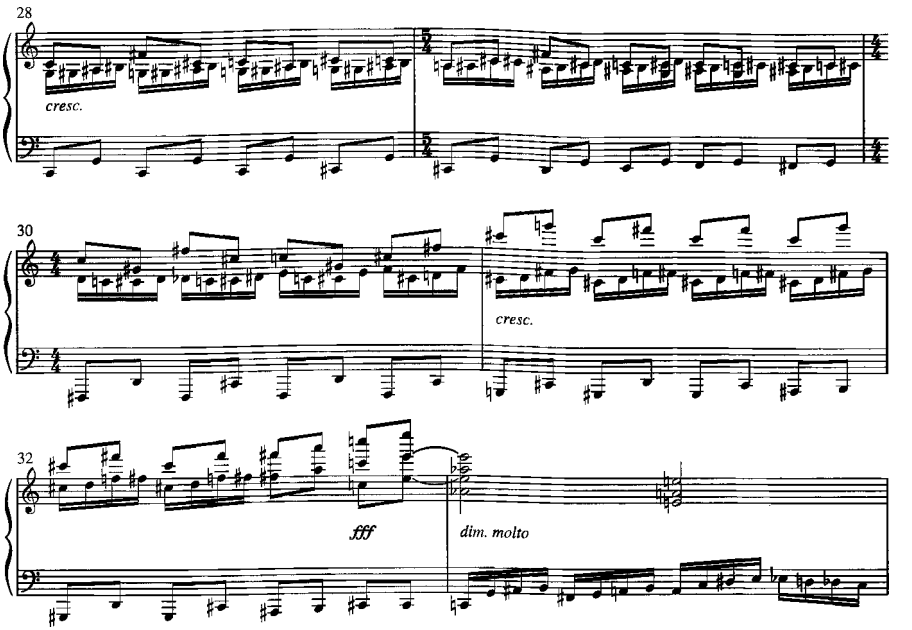


Figure 11: Climax of *Bigger.*



that the long-range harmonic motion of the entire two-minute work follows the opening motive, from C to C♯.

Looking now at *Bigger,* I ask myself the same questions I did at the end of grad school: Is the development based on a single, relatively simple concept? Yes. Is the music fun to compose? Yes. And—this was the sticking point before—is the "fun stuff" audible? It sure is, even on a first hearing, which is usually all you get in films. After all, people don't come to the movie theater to hear music.

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A *Nuyorican Son*

By Christopher Washburne

I am a trombonist. I approach composition through an instrumentalist's sensibility, a utilitarian approach of sorts: I write music that features the trombone and me as the trombonist. I am also deeply ensconced in, and a product of, educational institutions, with a B.M. degree in classical trombone performance, M.M. in Third Stream Studies, and Ph.D. in ethnomusicology. This said, my moments of compositional inspiration seem to emerge from one idea or feeling—a groove or melody that I begin to sing to myself. In the heat of composing, it seems as though this materializes from a "nowhere" within, driven by an intuitive urge to create. The moments usually occur just after psychological clearings of inner space, such as a vacation to a foreign place, a run in Central Park, or the experiencing of another artist's work that captures me and shakes something loose inside that simply must come out. At other times, compositions are prompted by a more pragmatic need for new repertoire for live performance or an approaching recording session. Style, feel, and rhythmic determinations then are dictated less by epiphany, and more by the fact that the band needs an up-tempo and high-energy piece. In hindsight and with closer introspection, regardless if a new piece is generated from a need (an outer place) or a mere inspiration (an inner place), it becomes clear how the influences of my past musical life and my current performance settings are integral to the music that I hear. In other words, my trombone performance and educational experiences are both invaluable and present complementary sources of inspiration in my life as a composer.

Over the last twenty years, I have led several regularly performing groups, playing a variety of jazz styles, from straight ahead, to free, to Latin. Since I don't care much for writing music that I cannot hear performed, I write for whatever band I am currently performing with. Although this limits stylistic parameters, it greatly enhances the speed with which I can explore various possibilities within those constraints. It allows my compositions to remain works in progress and provides satisfaction in watching them transform over time. In this way, I have adapted a compositional process that relies upon live performance and the input of talented musicians whom I know intimately.

The jazz styles that I perform allow and even require that improvisation play a significant role. That means my compositional process is tied to the choices I make concerning who plays in my band. My criterion for hiring sidemen is based on creating the most positive of vibes within the group's

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interactive context. I hire musicians whose company I know I can enjoy, even after several weeks of touring. They are usually friends whose musicality I respect. As I shall demonstrate below, their abilities and personal style become intricately tied to my compositional choices.

When I was first learning how to play jazz in the early 1980s, I would often speak with older musicians, asking advice, taking lessons, or just hanging out. They would say repeatedly, "You can't learn to play jazz in school; jazz is learned on the street." This comment was steeped in their own youthful experiences in a time before jazz was accepted as a legitimate field of study in the academy. It also highlighted the importance of the master/apprentice and elder/youth relationship that has served to perpetuate the "jazz tradition." For younger musicians, the road big bands and after-hours jam sessions where the seminars for the "University of the Street" were conducted during the first 75 years of jazz history barely exist in today's scene. I did learn jazz in school. In fact, I was forced to, much like most of my other thirty-something jazz colleagues. The jazz scene has been transformed by a complex of social and economic factors in which classrooms now replace bandstands, and private lessons in a professor's studio replace the hours spent sitting on a bus during a tour, rapping to more experienced musicians. Us young guys still hang out with jazz elders—just more so in institutionalized settings than in smoky bars. My professors (the seasoned veterans) profoundly shaped my musical identity and their presence in my compositions is like a palimpsest, existing just beneath the surface of every note I write or play.

The first serious jazz I played was at the University of Wisconsin-Madison (UW). When tiring of the regimented practicing of orchestral excerpts, I signed up to study with bassist Richard Davis and to play in his big band. On the first day of class he said, "To play jazz you have to be flexible." He meant being open to spontaneously create and interact with your immediate environment. I understood it as freedom. I never stopped practicing my orchestral excerpts, but relished my newfound liberation in exploring improvisational possibilities. During that class I decided to pursue both jazz and classical trombone performance. While I was at UW, Wynton Marsalis came to perform for the students. Hanging out with the young "master" after the concert, he flippantly remarked to me that he viewed jazz as a black thing and I needed to know that experience to play the blues. He was in his early twenties at the time and his youthful arrogance should probably be forgiven. However, I was young and impressionable, and as a white musician I left the concert feeling as though I had no right to play the blues. As time passed, I realized that it wasn't my skin color that prevented me from using the blues idiom to express myself, just lack of experience. Since that realization, I have focused on developing

my skills for transforming real-life, "feelingful" experiences into real-life musical gestures. The blues is a particularly adept vehicle for that purpose, and consequently I turn to blues expression in some form in many of my compositions. For this insight, I am grateful to Marsalis.

Seeking a graduate program that prized musicians who refused to be pigeonholed as solely jazz or classical players, New England Conservatory's (NEC) Third Stream Department was an obvious choice. The department was founded by Gunther Schuller in 1969 and reflected his attempt to establish a contemporary approach to conservatory training that would cater to the freelance music scene he experienced in New York. With a limited number of orchestral jobs available, the majority of this nation's conservatory-trained musicians were, and still are, forced to seek employment alternatives. Some turn to nonmusical jobs, others to educational positions, and yet others have adapted their skills to an emerging freelance scene in New York and other large cities. Schuller brought with him several key instrumentalists from New York to join the faculty at NEC to assist him in implementing his new educational vision. They included trombonist John Swallow, saxophonist and microtonal specialist Joseph Maneri, and pianist Ran Blake.

These three musicians profoundly changed the way I approach music, and their influence can be heard in much of my work. Swallow, whose diverse career included playing trombone in the New York City Ballet orchestra and being one of the busiest freelancers in the contemporary music scene, taught me to approach every performance situation from the same perspective, namely, that of making music on the highest level. His approach focused on accentuating similarities of styles and de-emphasizing differences, thus avoiding the building of walls in one's mind in order to differentiate playing styles. He taught me to allow my classical playing to inform my jazz playing, and vice versa. This approach enabled me to adapt easily to new musical situations, and I found the demands of freelancing in New York, which frequently includes traversing a wide stylistic spectrum within one day, challenging but manageable. On numerous occasions I have played a classical concert in the afternoon, a jazz gig in the evening, and ended the night with a late performance in a salsa club. This chameleon ability has not only expanded my employment possibilities, but has enriched my compositions by allowing me to draw inspiration from fairly disparate musical traditions.

Joe Maneri taught me to open my ears to the possibilities "in between," to view music as a continuum, in terms of pitch, rhythm, harmony, and musical possibilities. His improvisations would move from Coleman Hawkins–like silky, sinewy tones with phrases extending over many measures, to Schoenbergian gestures with octave displacement and shifting

tonal centers, to Elliott Carteresque metric modulatory phrases, and to Ezra Sims–like microtonal scalar structures. The ease with which he could draw from each approach and combine them within one solo left a huge impression and reinforced Swallow's message about the strength of blending traditions.

Ran Blake developed my taste for "musical spice"—those special tones and serendipitous harmonies that surprise the ear. His textual approach to improvisation on the piano demonstrated how to use in improvisation-based music the timbral developments made in European and American contemporary music. He further encouraged me to listen to world musics for inspiration—not in a Paul Simon– or David Byrne–exploitative and superficial way, but in a Third Stream way.

The term "Third Stream" has changed over the years. In the 1960s it referred to music that combined classical and jazz forms. With its institutionalization, however, it grew to encompass much more, and became associated with a process more than with a musical style. I understand the term in its function as a verb rather than as a stylistic label. It concerns the dedication to immerse oneself in two or more musical styles, to become competent in both, and then to combine the two separate streams to develop a personal style, or third stream. Its emphasis on improvisation and ear-training has prompted NEC to change the Third Stream Department's name to the Department of Contemporary Improvisation. The instruction I received from that program opened the door for cross-cultural exploration, which has played a prominent role in my music-making ever since.

During my studies at NEC I was introduced to Latin music. In my first year, a Latin music ensemble was offered by two Third Stream graduate students. We played a variety of Caribbean and Latin American styles. During the first week of class, a janitor at the Conservatory, who happened to be a trombone player who never quite finished his studies, heard me performing with the ensemble. He approached me and asked if I would be willing to sub for him on the next Saturday night with a Colombian band that played *salsa, cumbia,* and *merengue* (Puerto Rican, Colombian, and Dominican dance music, respectively). Born and raised in rural Ohio and schooled in jazz and classical music, I had little exposure to Latin music and culture. I played my first salsa gig as a complete outsider. Except for the one rehearsal of the Latin music ensemble, I had never listened to salsa (save for brief moments when blasting car stereos passed me by while driving through Boston's Latino neighborhoods), I had only met a few Latinos (classical musicians who were studying at NEC), I had never visited a Caribbean, South or Central American country, and I did not speak Spanish. When I inquired about how to play salsa he responded with the

following advice: "Just show up on time. Smile a lot and have a good time. And most importantly, play really LOUD. They are going to love you!" Much to his demise, he was right. They subsequently fired him and hired me. My continued performance of Latin music in the Boston area culminated in a tour to Brazil. I spent a summer in Rio de Janeiro performing with musicians such as Danilo Caymmi, studying the local musics, and collecting music books and recordings.

In 1992 I came to Columbia University to pursue an ethnomusicology degree because I wanted to continue my musical education by exploring more rigorous academic avenues. My aim was to return to Brazil and write a dissertation on some aspect of *bossa* or *samba.* However, my salsa contacts from Boston, along with the thriving New York Puerto Rican music scene (and the comparatively smaller Brazilian music scene in New York), led to my immediate employment playing salsa. Within a year I was performing five to six nights a week. As my ethnomusicological training progressed, I recognized how limited my knowledge was of the music I was performing nightly. Encouraged by Columbia professors Dieter Christensen and Peter Manuel, I began using my newly acquired field-method skills and interest in analytical and interpretive ethnographic examination to embark upon a systematic study of Latin music. I began collecting recordings and transcribing solos. I learned to play percussion, picked the dance steps, acquired Spanish skills, and observed the dynamics of participant interaction. As a deep love and respect for Latin music's rich historical traditions developed along with my growing understanding of the salsa scene, I noticed how little was written in the scholarly literature on salsa. When it became time to decide on a dissertation topic, my life was enmeshed in the salsa scene, touring throughout the world with the top salsa artists, such as Tito Puente, Celia Cruz, Mark Anthony, and La India, and recording for numerous others. It became clear that I was in a unique position to offer a perspective that had not appeared before in the salsa literature.

While attending classes at Columbia I set out to form a new band that would combine the salsa music I was performing with my past jazz experience. The Latin jazz genre was an obvious choice. With a Third Stream mentality I selected six musicians that had a complete command of both salsa and jazz styles. The name SYOTOS (an acronym for "See You On The Other Side") came from my experience of fighting a bout with cancer that coincided with the establishment of the group. The "Other Side" refers to that which is just beyond our reach, grasp, and touch. Over the last ten years much of my compositional energies have focused on that group.

In 1995 I was asked to perform weekly with SYOTOS at a unique performance space in the East Village called the Nuyorican Poets Cafe.

("Nuyoricans" are persons of Puerto Rican descent who reside in New York City.) Jazz writer Howard Mandel describes the locale as "a hyperactive cultural oasis," which hosts poetry slams, cabaret shows, performance art, satirical plays, and jam sessions. He writes, "It's not chic, but takes no pleasure in being grungy—it's simply real." My kind of place. The management, unlike most New York venues, is supportive of new groups, and prizes those who experiment, seeking to establish their own voice: a bandleader's dream, in other words, and I still view it as a true musical blessing. Over the past seven years (a tenure rare and almost unheard of in today's jazz scene) this weekly outlet has been invaluable to my development as a bandleader, trombonist, composer, and arranger.

From Epiphany to Big Band Chart

One day in January of 1999 I began singing a melodic fragment while strolling down the street, a bluesy pentatonic phrase, exercising my right to sing the blues. It corresponded with the fourth anniversary of my gig at the Nuyorican Poets Cafe. Since I wanted to commemorate that event with a new composition, I began sculpting the melodic fragment into a work that would capture the essence of my Cafe experience and express my deep gratitude to both the Cafe and the Nuyorican musicians who share their musical culture with me. My big band arrangement of this song is included below.

The medium tempo and duple meter of the original inspiration lent itself to the *son montuno* rhythm, a Cuban style that emerged in the 1920s. The son montuno has served as the rhythmic foundation for many Latin music styles popular in the Nuyorican community, including salsa, mambo, and cha-cha. The title *Nuyorican Son* reflects the inspiration of the composition, both culturally and in terms of music structure. After completing the melody of the A section (mm. 9–23, 36–43), I constructed the accompanying harmony by using a variation of the standard vamp progression I–IV–V–I, which is most typical of son montuno. My version included a "bluesified" ♭III chord, thus transforming the repeated progression to I–♭III–IV–V (mm. 4–8)—Cuban music infused with a New York attitude. The key of B♭ minor, a trombone-friendly key that facilitates the use of the most boisterous and forceful notes in the trombone's upper range (B♭4 to F5), was also chosen because of its dark quality, lending itself well to late-night, smoke-filled expressions.

Borrowing from popular music and jazz practices, I chose an AABA song structure where the B section offers a contrast in mood and flavor, a release from the repetition found in the A section. The alteration of angular and chromatic motion of the B melody (mm. 24–31) serves to contrast the pentatonic and linear A melody. Here, Ran Blake–ish spice notes are

incorporated, with E and A♮ used over the D♭^{7} chord in mm. 25 and 29, and the E♮ over the F^7 chord in m. 31. Furthermore, the harmonic shift to the subdominant (E♭) tonal center together with harmonic motion by major and minor seconds contributes to the mood change.

Once this much of the composition was completed, I brought the music in a lead-sheet form to the Nuyorican to be performed. When I saw audience members get up and dance, I knew I was on the right track. It is such a thrill to have my music move people, whether it be physically or emotionally. The compositional process continued over the next few months on the bandstand and with impromptu experiments in tempo, arrangements, reharmonization of the melody, solo form, soloing order, and background figures for solos. During one performance, for instance, SYOTOS drummer Bobby Sanabria inserted an Afro feel on the B section to accentuate the contrast. An *Afro* is another Cuban rhythmic construct, which was popular in the 1960s. His spontaneous decision became a permanent part of the arrangement. This prompted me to add a four-measure, harmonically suspended section that employed a cha-cha rhythmic feel over the dominant F^7 chord (mm. 32–35), in order to smooth out the transition back to the A section. Over time the composition grew, as musicians, using the song as a vehicle for personal expression, pushed its limits to see how far they could take it into deeper realms of interactive communication.

When Sanabria, who is Nuyorican, obtained a contract to do a live big band record at the Birdland jazz club, he asked me to arrange one piece. I suggested *Nuyorican Son* as a tribute to him. His exceptional knowledge about Latin music history was integral in my ethnographic work on the salsa scene. I am indebted to him for sharing so much of his knowledge and culture with me. His commission prompted another step in the compositional process, in which I solidified in notational form the developments made on the bandstand. For instance, the tempo was set at 120 bpm and the soloing over the AABA form was deemed best. I notated background figures that were improvised during performances at the Nuyorican, and whose authorship I cannot verify. I then expanded the orchestration to a big band, embedding the music in traditional jazz-arranging techniques (i.e., chord voicings, sectional writing, et al.) first heard in Richard Davis's class and studied in jazz arranging classes at UW and NEC.

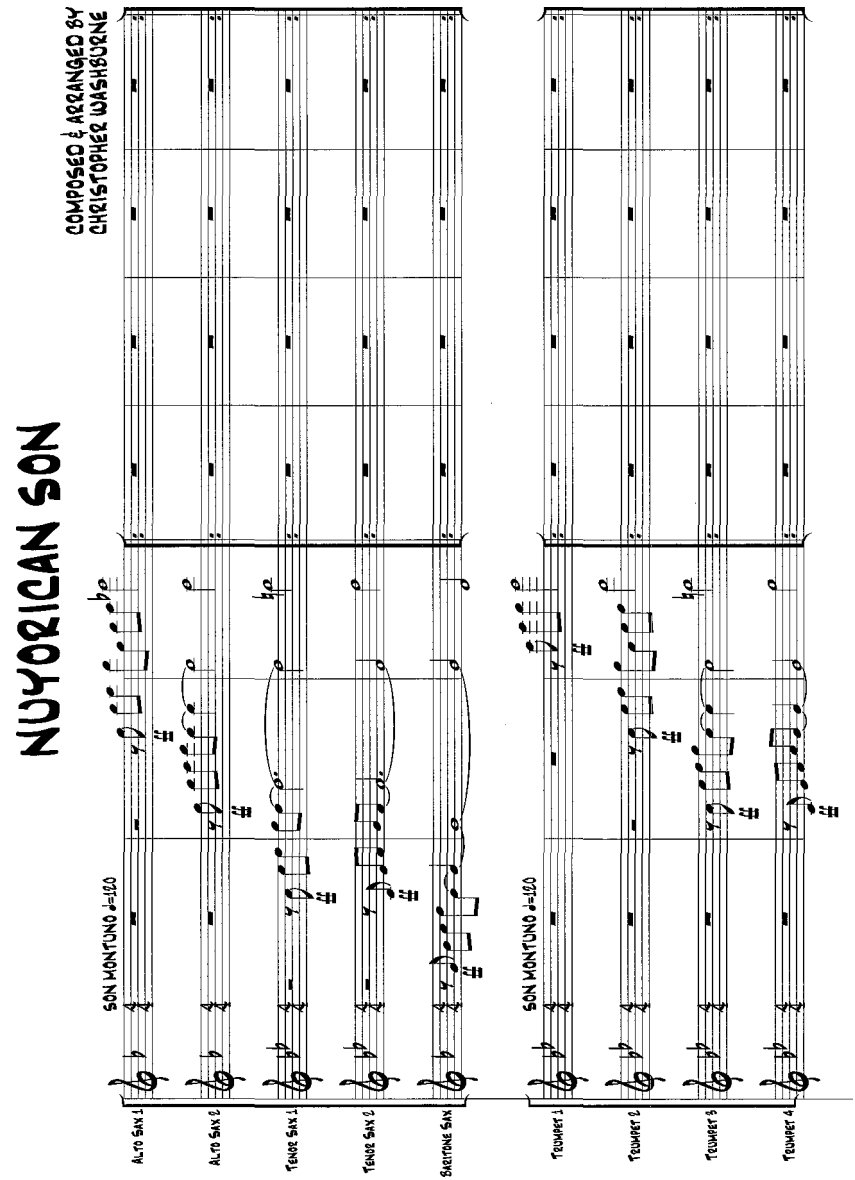
In line with my trombone-centric bent, the first statement of the A section (mm. 8–15) is orchestrated for all four trombones in unison. Furthermore, I take the first solo on the recording. Taking advantage of the larger instrumentation, I employ mutes, contrapuntal melodies, and more extensive use of spice notes to accentuate contrasts between the A

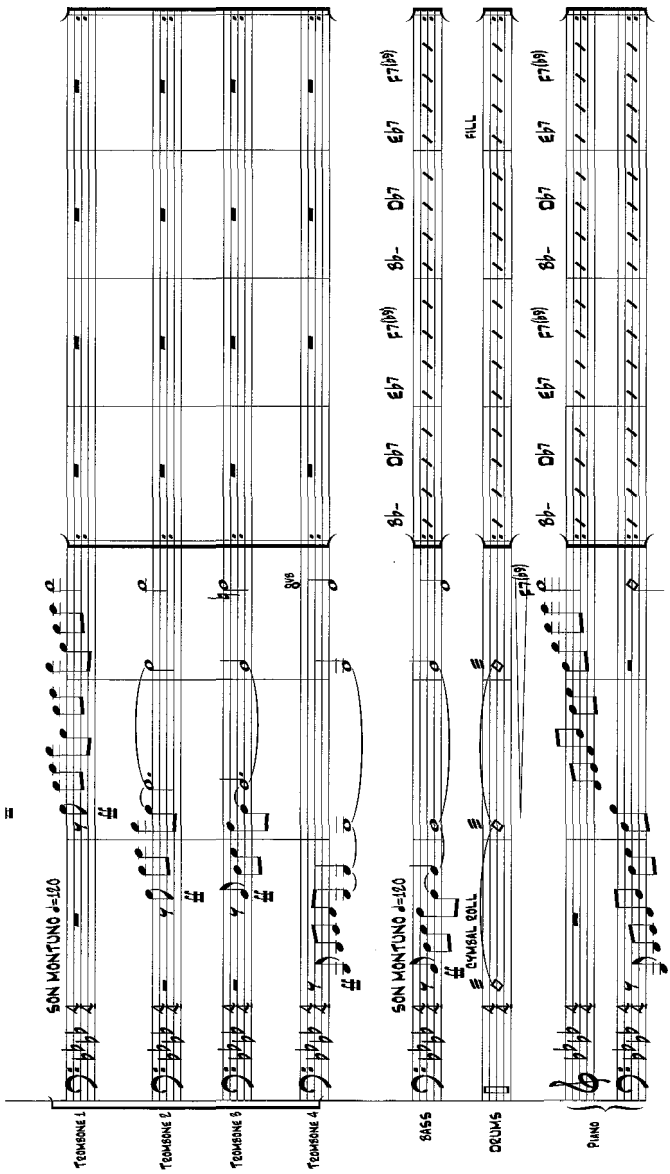
and B sections. And as a way of infusing the arrangement with "rhythmic spice," I insert a 5/4 bar in m. 27. This surprise break from Latin music practice, borrowed from other styles (contemporary jazz practice), posits this version of *Nuyorican Son* out of the dance music realm to a stylistic place somewhere "in between" (Latin jazz).

As a nod to the rich Latin big band tradition and to pay tribute to the most influential Nuyorican musician of the 20th century, Tito Puente, I added a mambo section. The mambo is traditionally an elaborate instrumental section that is played as an interlude between solos or vocal parts. My mambo (mm. 70–77) was constructed in a Puente style that features the contrapuntal layering and rhythmic interlocking of separate instrumental sections. This additive form begins with the saxophones playing a rhythmic figure in octaves, followed by a harmonized trombone counter melody, and preceded by a harmonized trumpet melody. The result is a gradual buildup in dynamics and energy, which propels the music into the final return of the theme and coda.

* * *

Nuyorican Son is a mixture of things from my past. It is a blues-infused, Cuban son montuno mixed up with American big band jazz, Latin dance traditions, contemporary music practice, and my Nuyorican experience. I play Latin jazz because I am innately driven to explore the other side, that which is always just beyond our reach. Richard Davis opened the door for exploration. John Swallow, Joe Maneri, and Ran Blake gave me the tools. NEC introduced me to Latin music. My Columbia experience taught me to conceptualize the compositional process. I am indebted to my fellow musicians. I strive for those moments when my music transcends the smoke-filled bar and becomes larger than its constituent parts. My musical experiences have transformed my real-life experiences, one of which bore me a Nuyorican son. *Nuyorican Son* can be heard on Bobby Sanabria's Afro Cuban Dream Big Band 1999 release entitled *Live and In Clave* (Arabesque Records AJ0149).


NUYORICAN SON
COMPOSED & ARRANGED BY
CHRISTOPHER WASHBURNE
SON MONTUNO ♩=100
ALTO SAX 1
ALTO SAX 2
TENOR SAX 1
TENOR SAX 2
BARITONE SAX
SON MONTUNO ♩=100
TRUMPET 1
TRUMPET 2
TRUMPET 3
TRUMPET 4


SON MONTUNO ♩=120
TROMBONE 1
TROMBONE 2
TROMBONE 3
TROMBONE 4
8va
SON MONTUNO ♩=120
BASS
Bb- Db7 Eb7 F7(b9)
FILL
CYMBAL ROLL
DRUMS
PIANO
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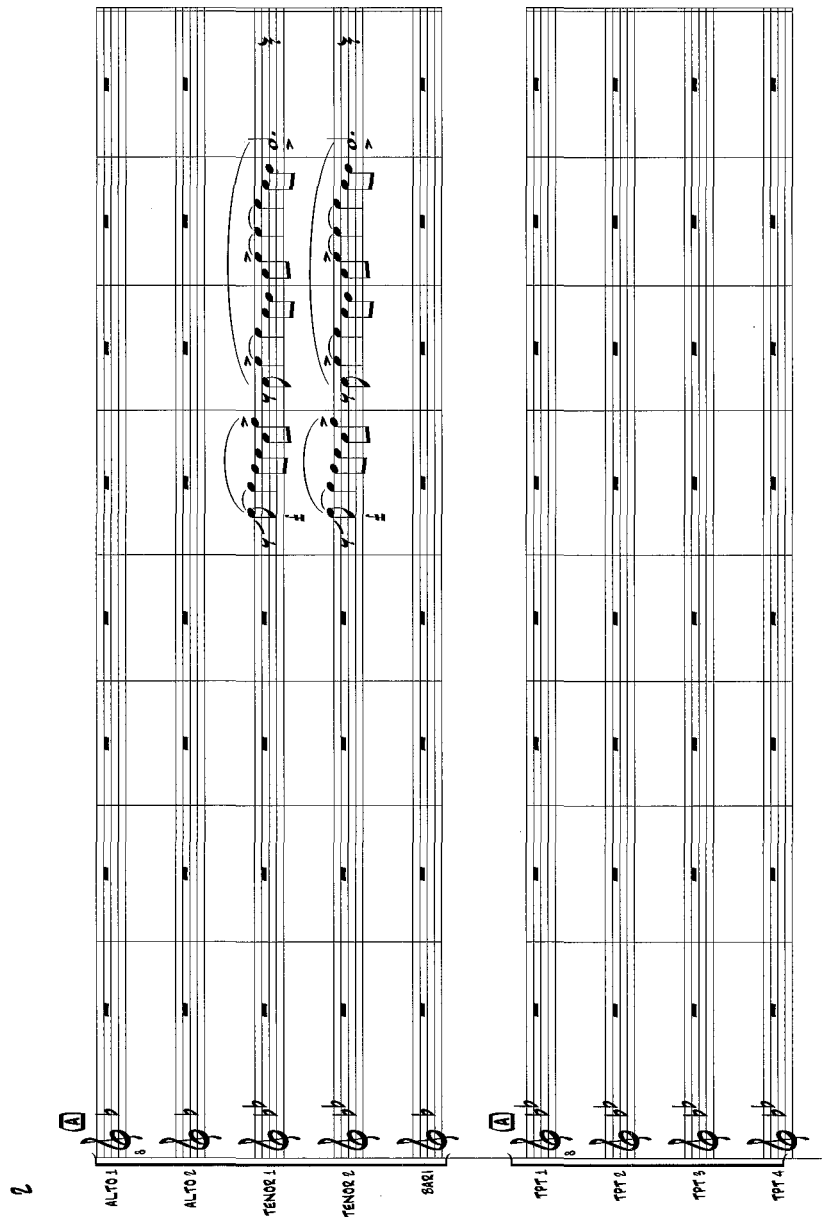
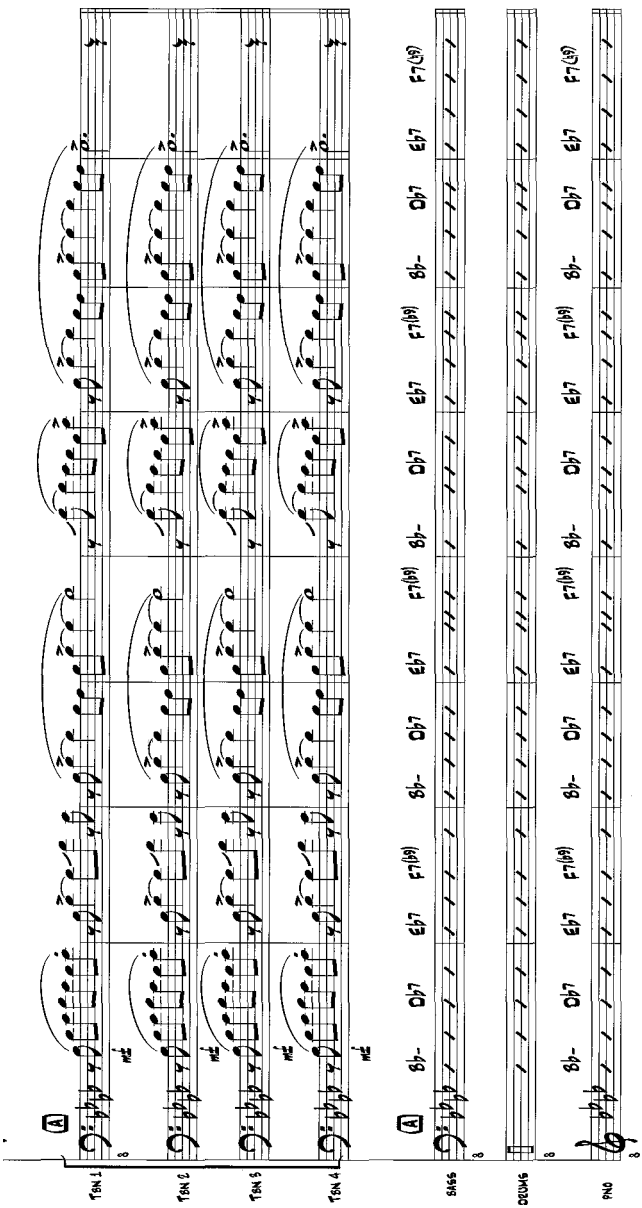
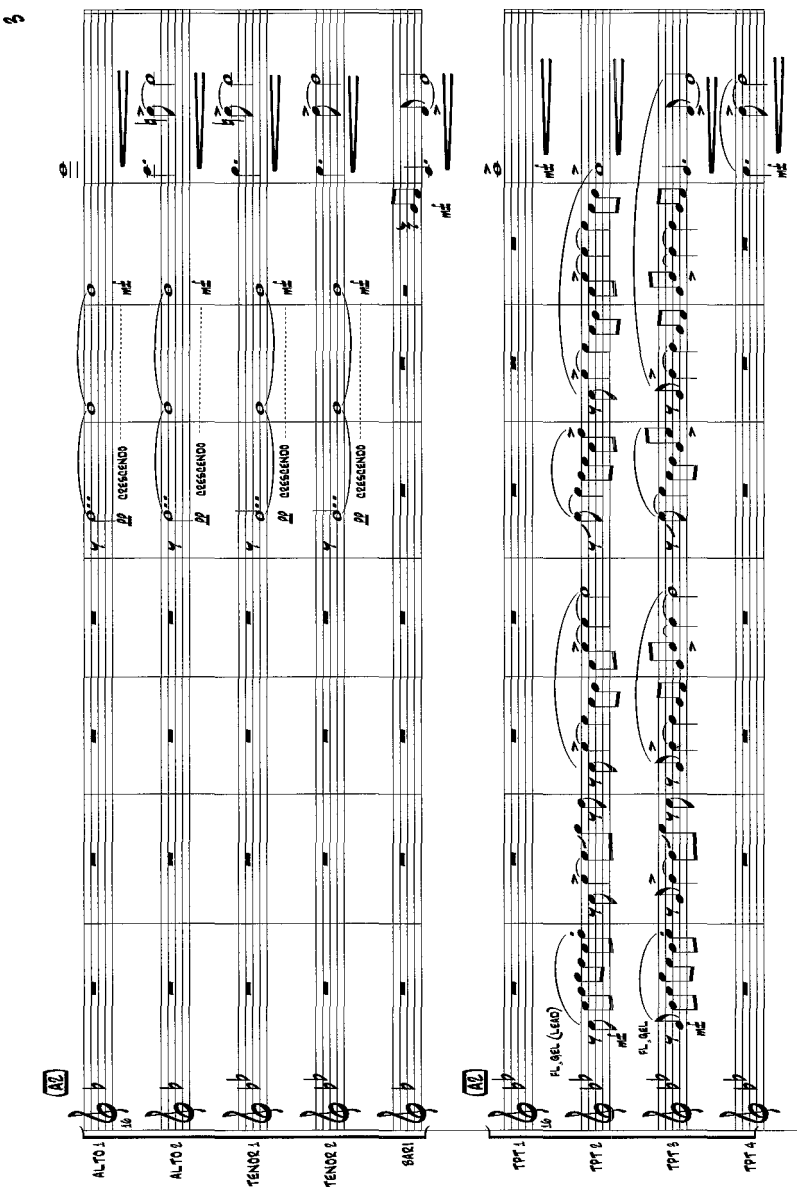
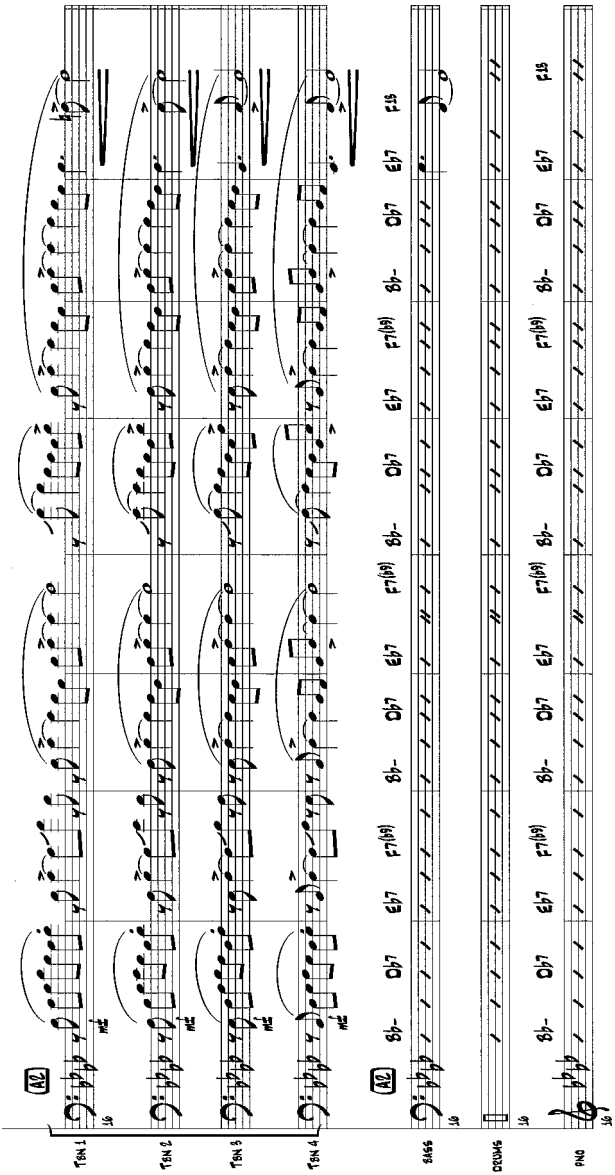
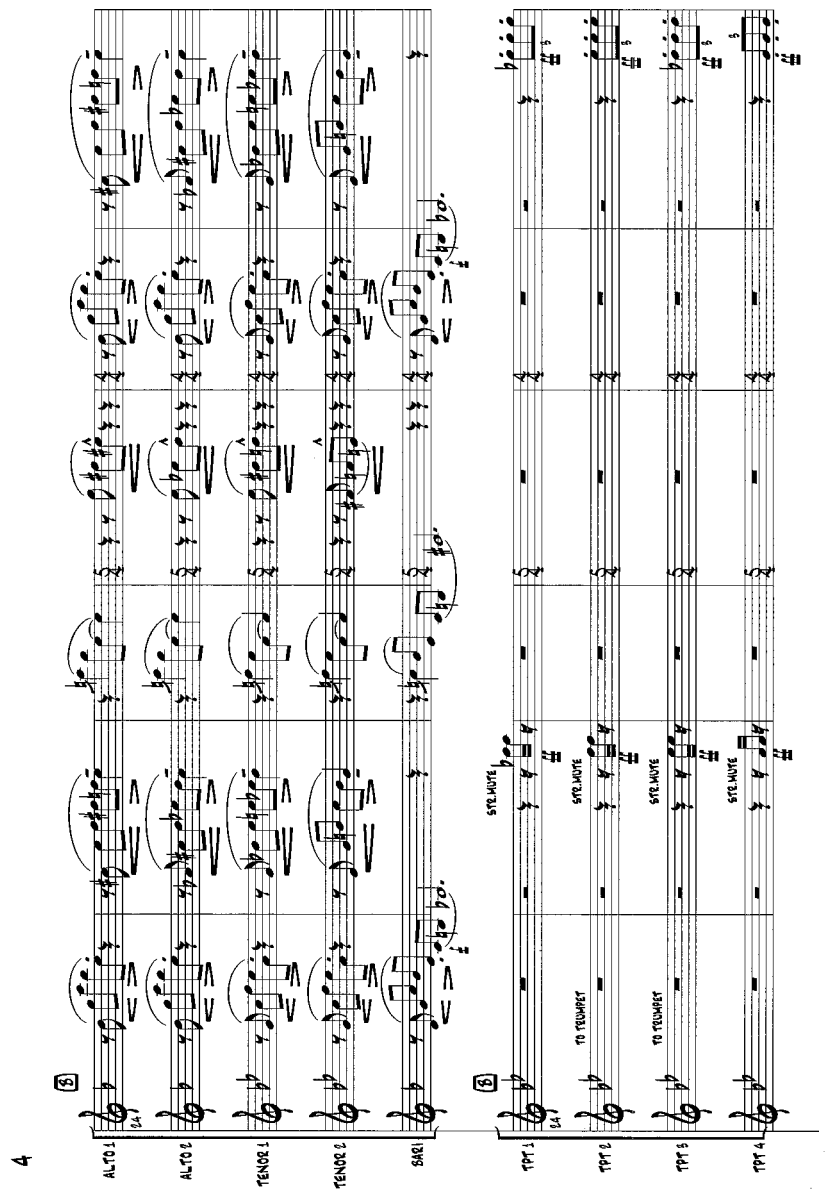
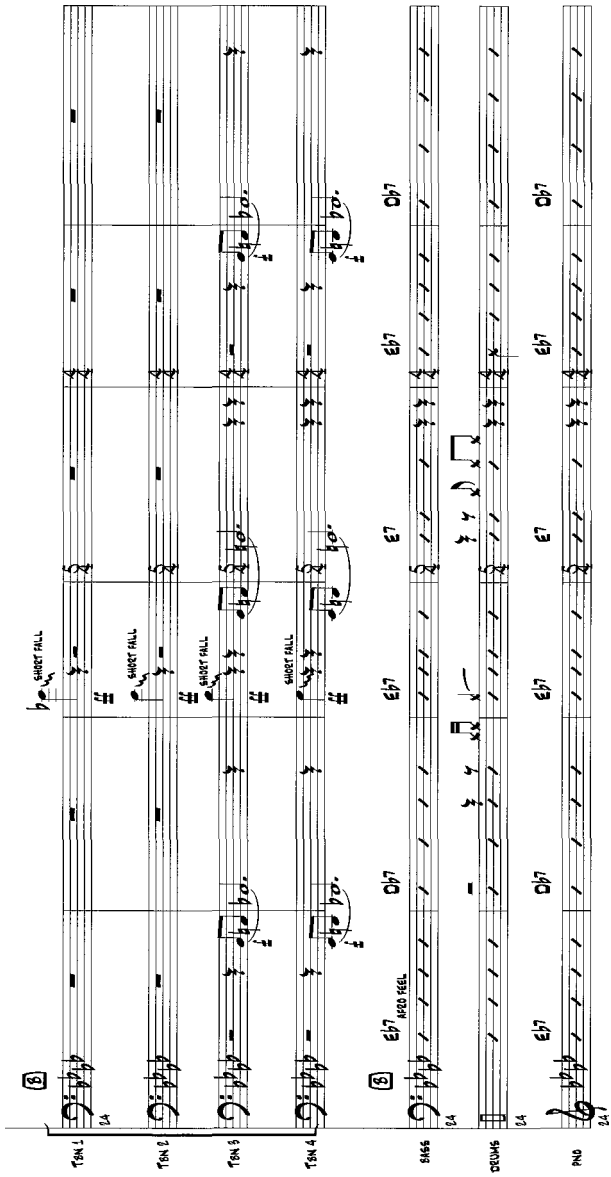

A
ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
A
TPT 1
TPT 2
TPT 3
TPT 4

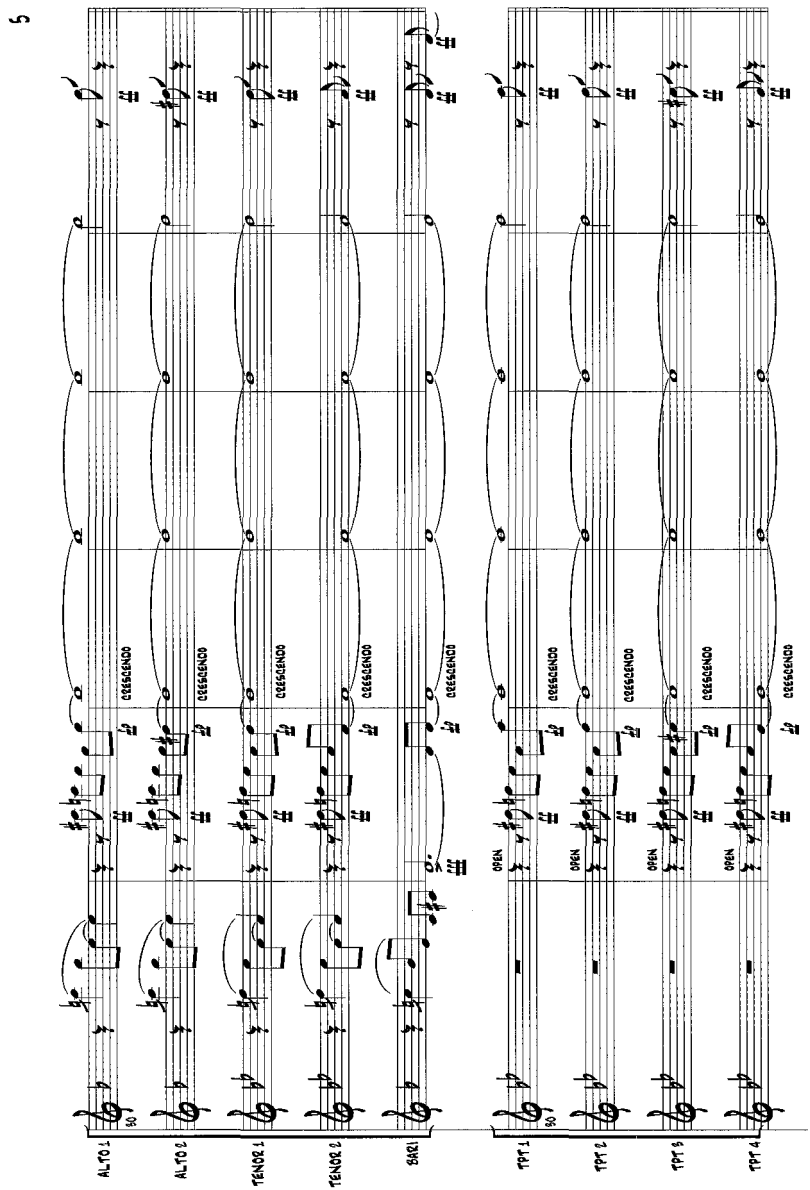

A
TEN 1
TEN 2
TEN 3
TEN 4
SAXES
DRUMS
PNO

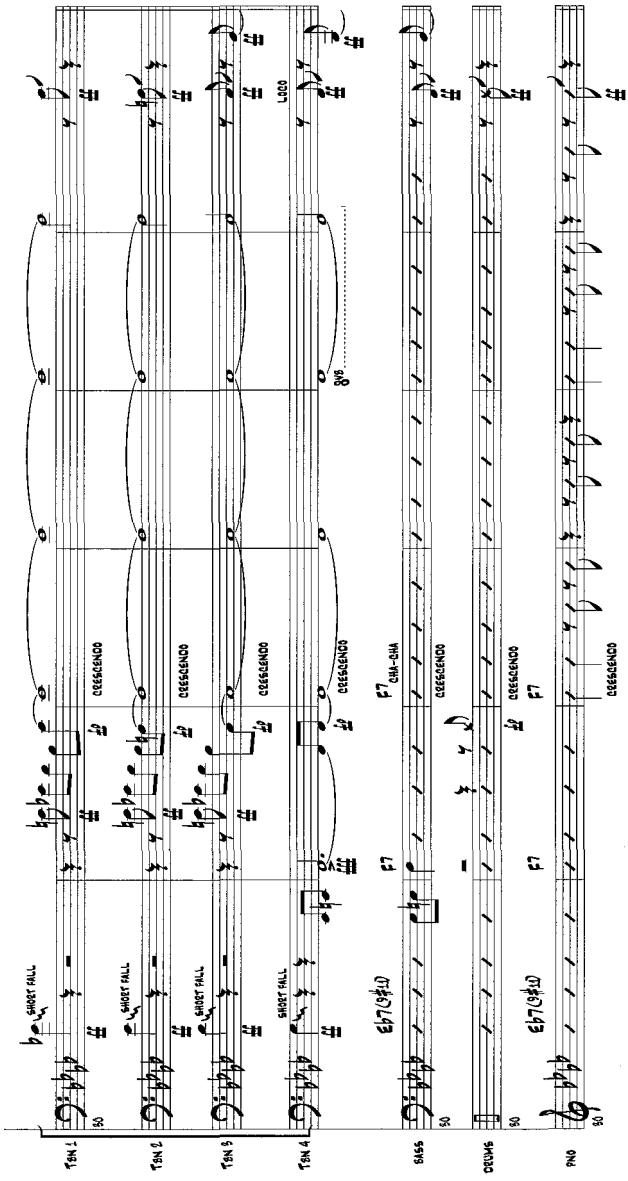

A2
ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
DECRESCENDO
A2
TPT 1
TPT 2
TPT 3
TPT 4
FL. OBL. (LEAD)
FL. OBL.

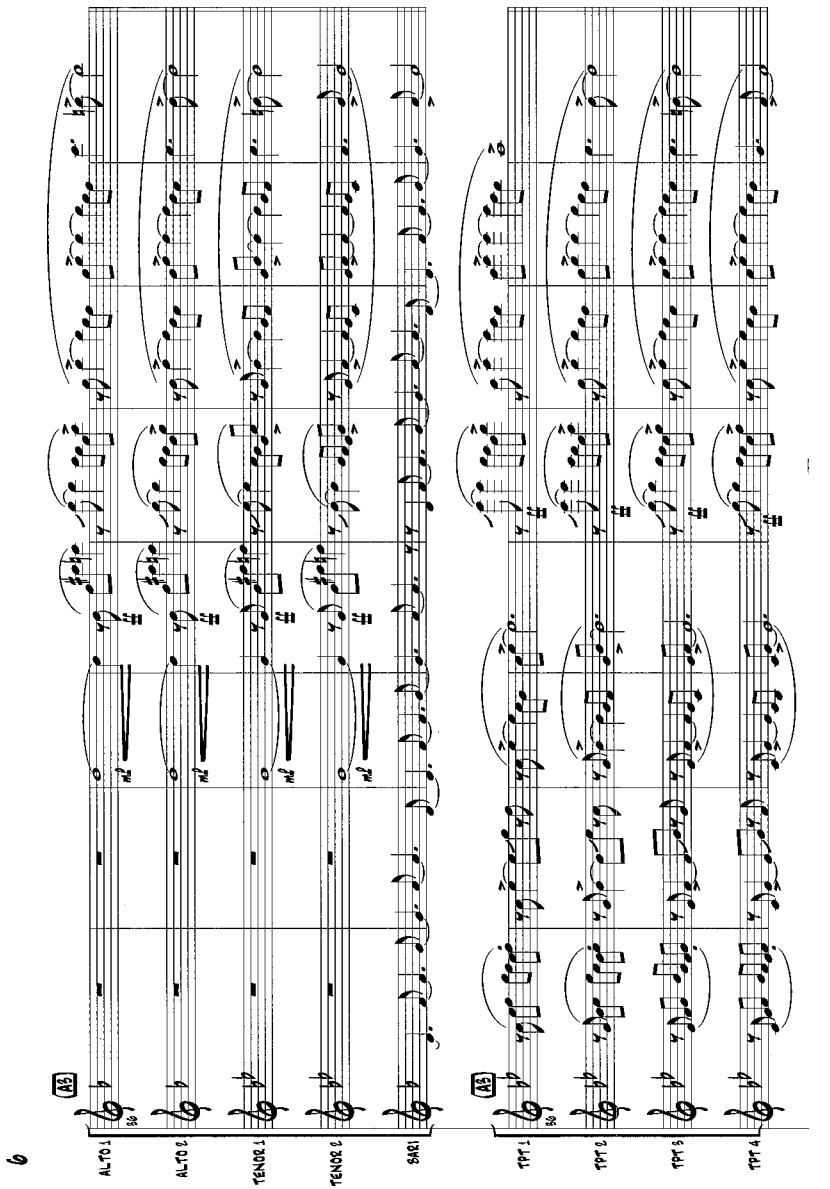

A2
TEN 1
TEN 2
TEN 3
TEN 4
BASS
DRUMS
PNO

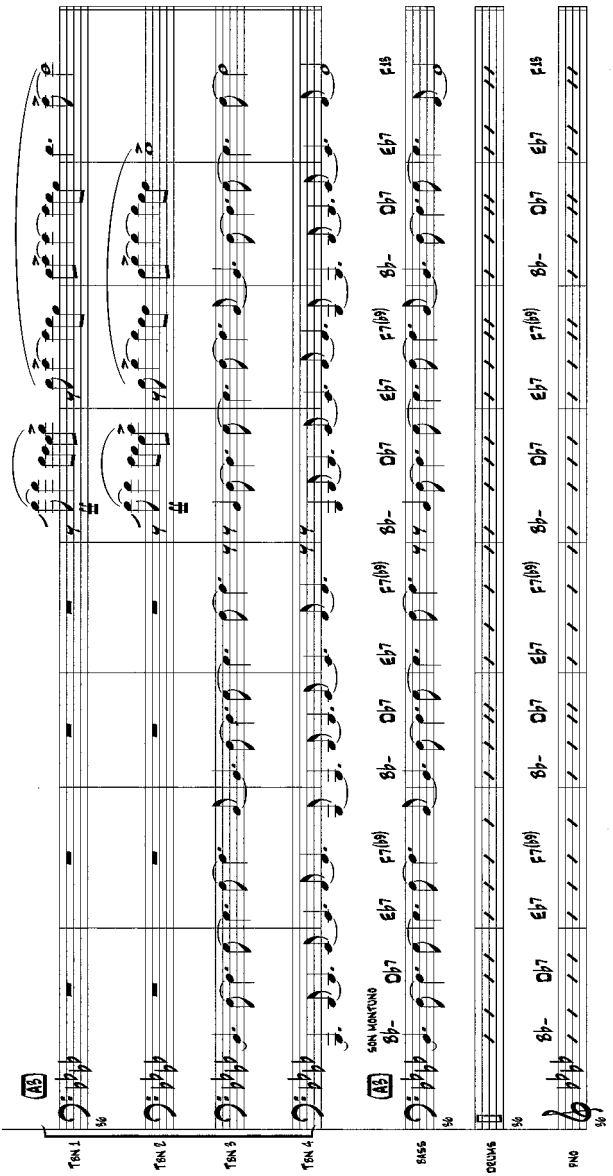

4
ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
TPT 1
TPT 2
TPT 3
TPT 4
TO TRUMPET
STR.MUTE

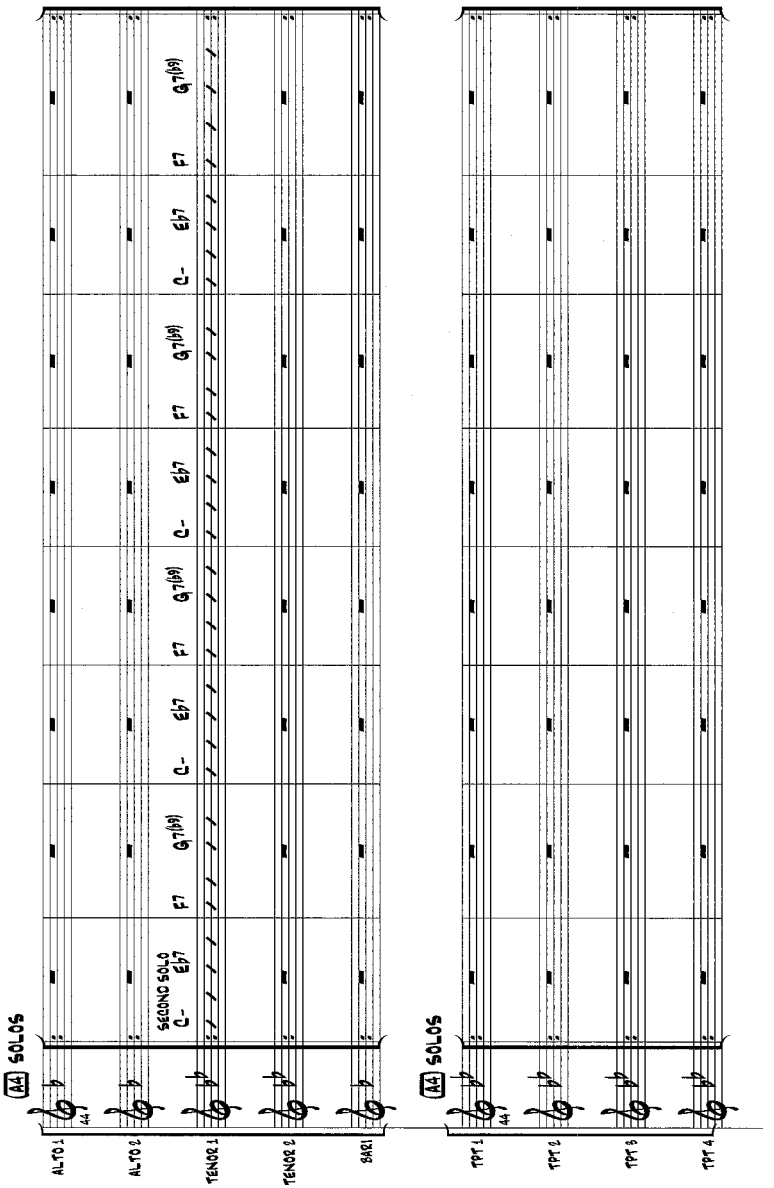

B
SHORT FALL
TOM 1
TOM 2
TOM 3
TOM 4
NEED FEEL
BASS
DRUMS
PNO

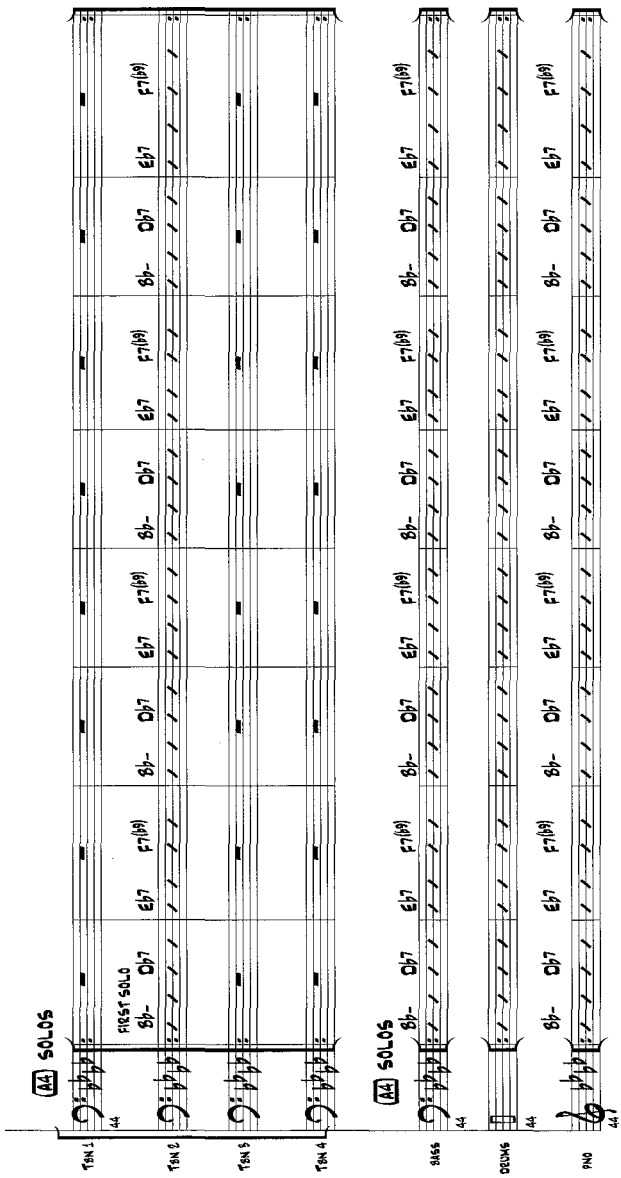

5
ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
TPT 1
TPT 2
TPT 3
TPT 4
OPEN


TSN 1
TSN 2
TSN 3
TSN 4
BASS
DRUMS
PNO
GHOST FALL
CRESCENDO
LOCO
8VB
CHA-CHA

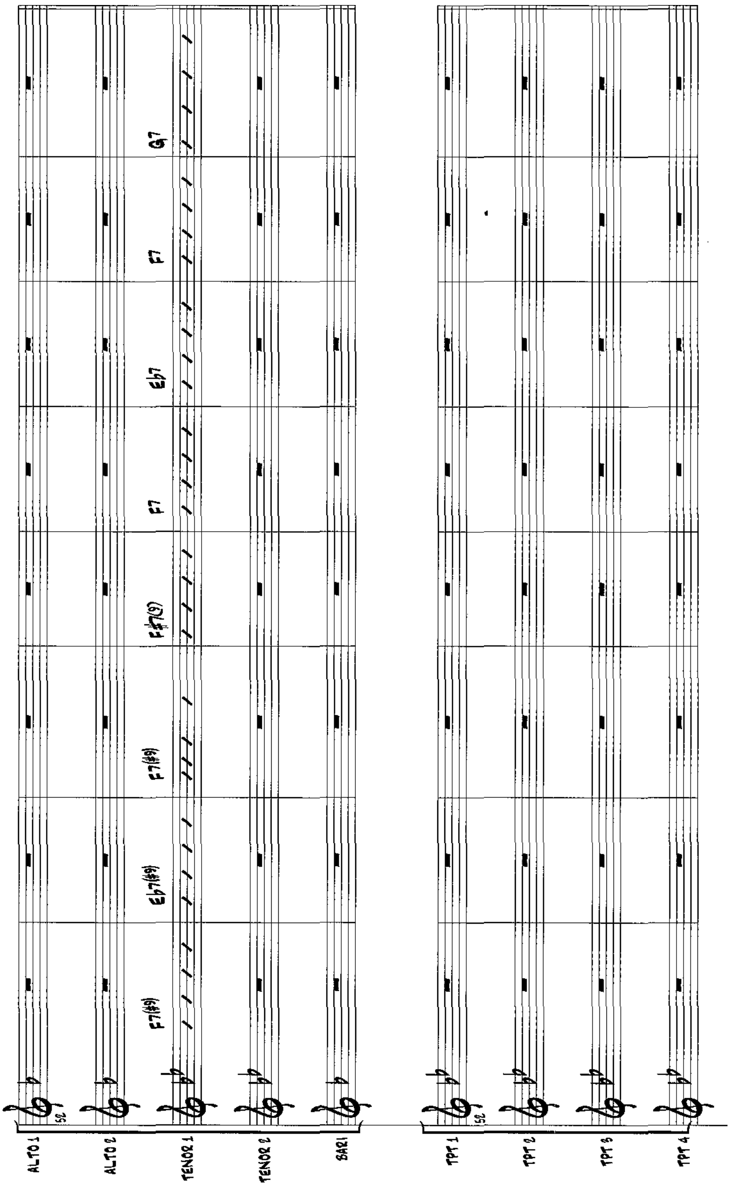

ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
TPT 1
TPT 2
TPT 3
TPT 4

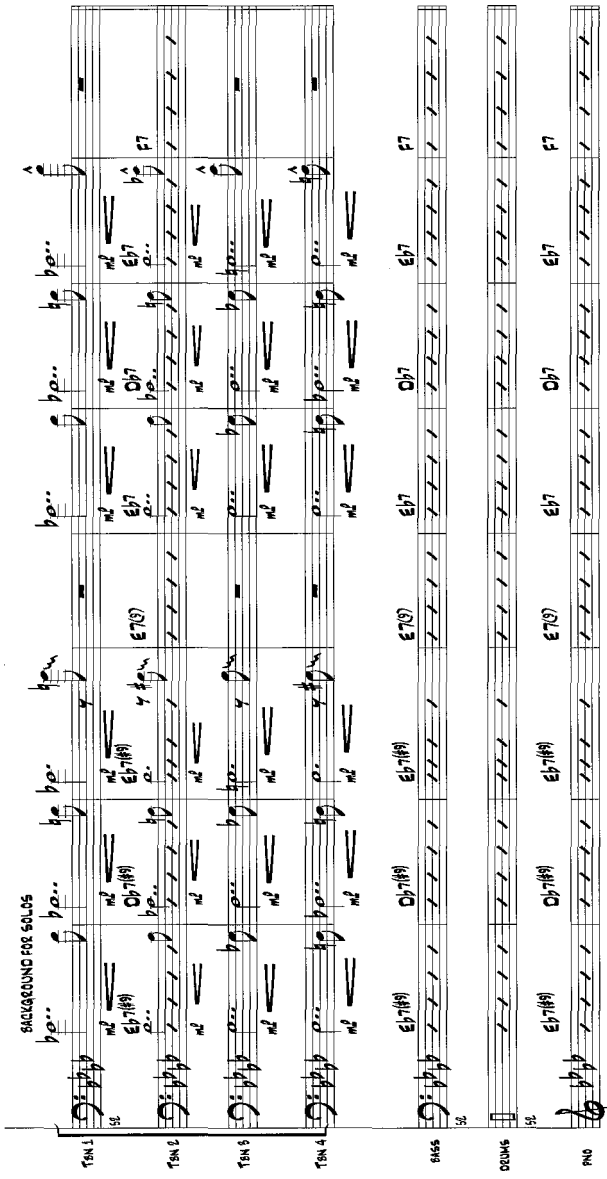

A5
SAN MONTUNO
A5
TEN 1
TEN 2
TEN 3
TEN 4
BASS
DRUMS
PNO

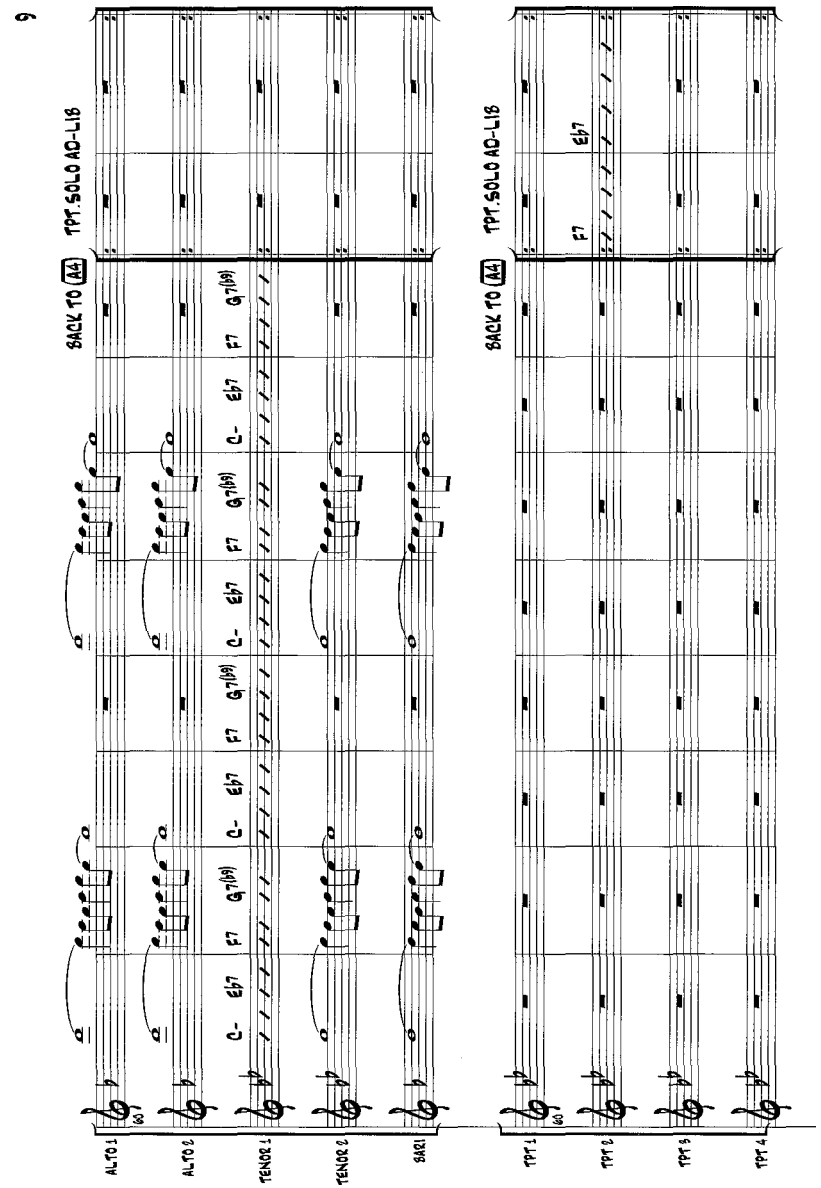

7
SOLOS
SECOND SOLO
C- Eb7 F7 G7(b9)
ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
SOLOS
TPT 1
TPT 2
TPT 3
TPT 4

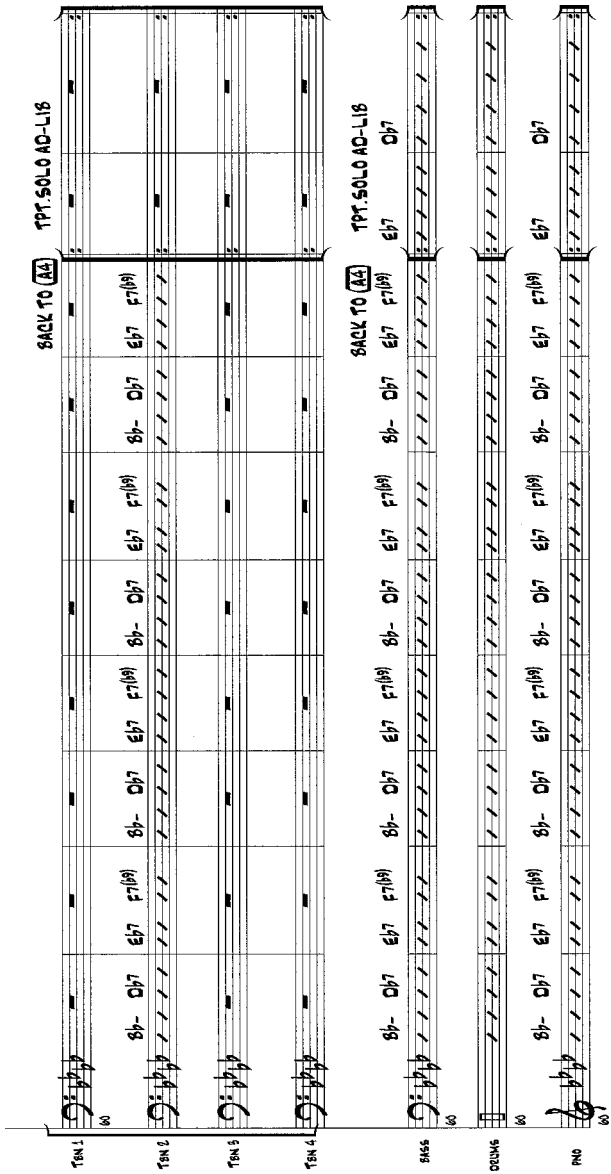

A4 SOLOS
FIRST SOLO
TBN 1
TBN 2
TBN 3
TBN 4
BASS
DRUMS
PNO

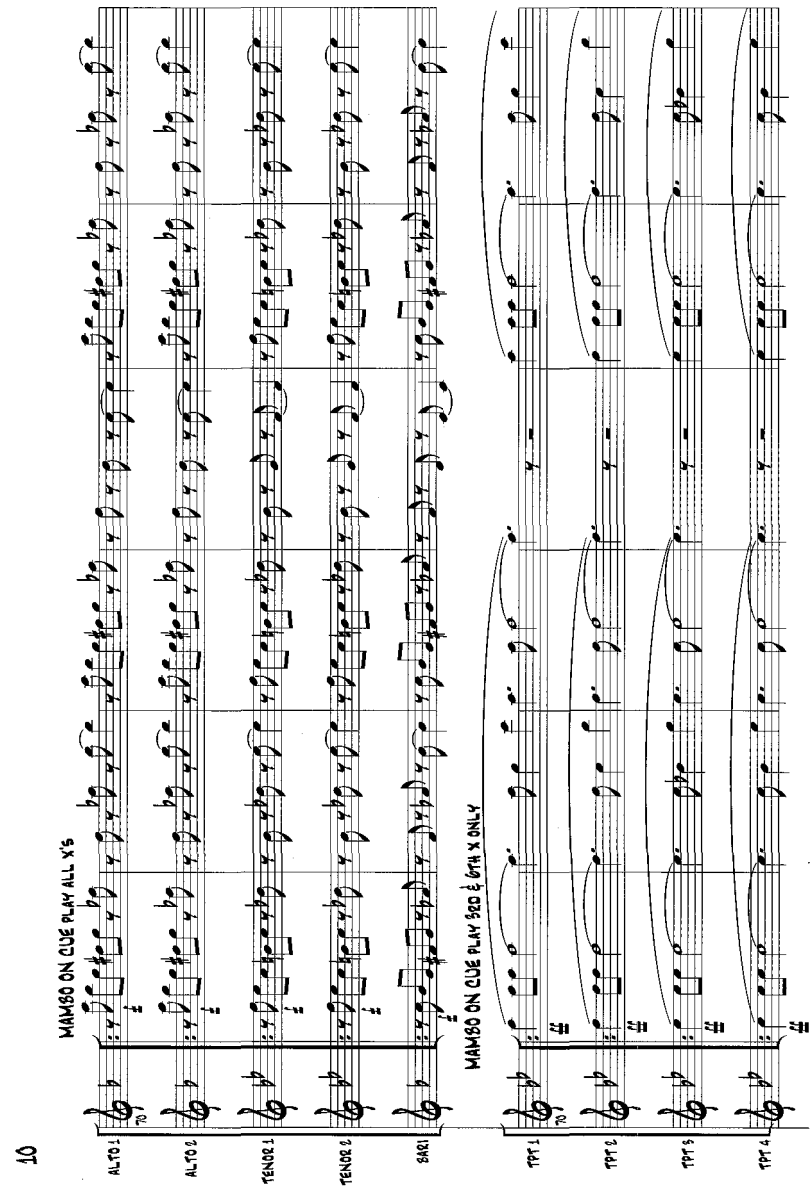
8

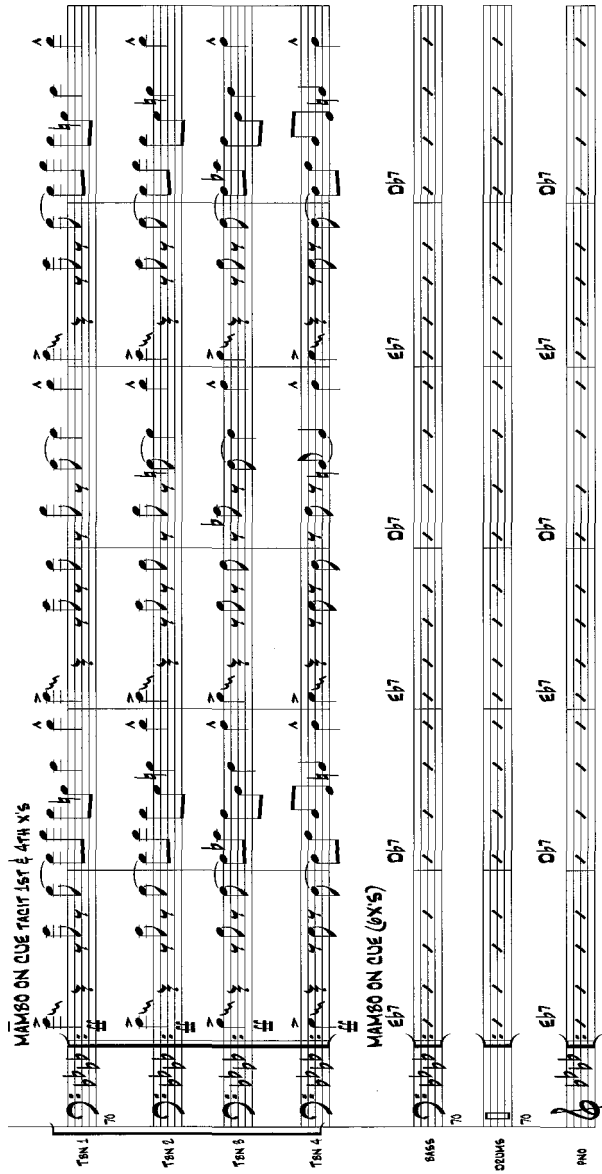

ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
TPT 1
TPT 2
TPT 3
TPT 4
F7(#9)
E♭7(#9)
F7(#9)
F#7(9)
F7
E♭7
F7
G7

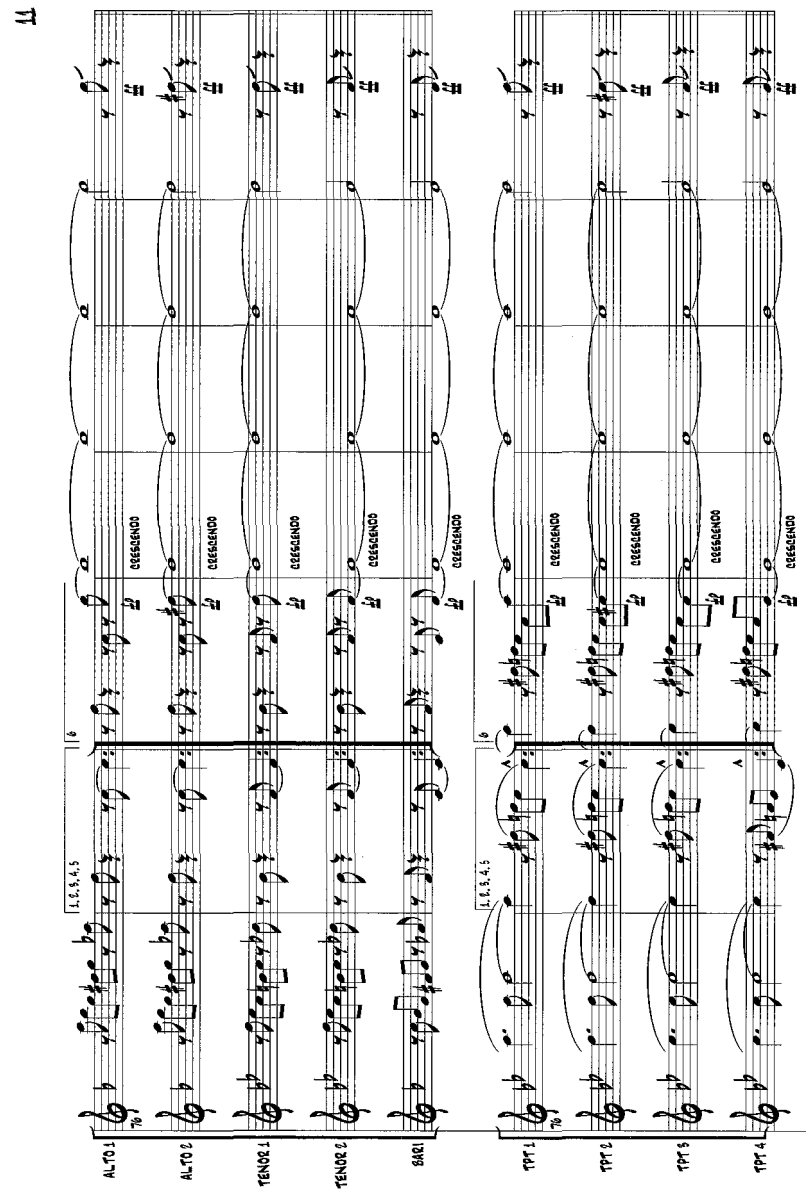

BACKGROUND FOR SOLOS
TRN 1
TRN 2
TRN 3
TRN 4
BASS
DRUMS
PNO

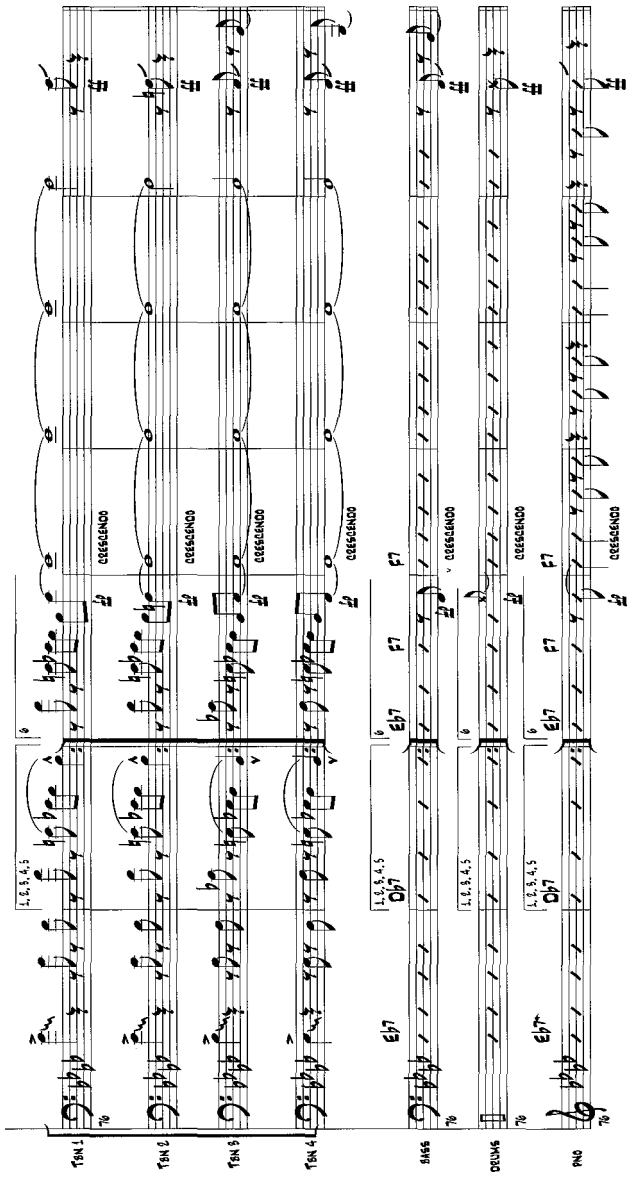

9
BACK TO A4
TPT. SOLO AD-LIB
C- Eb7 F7 G7(b9)
ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
TPT 1
TPT 2
TPT 3
TPT 4
F7 Eb7

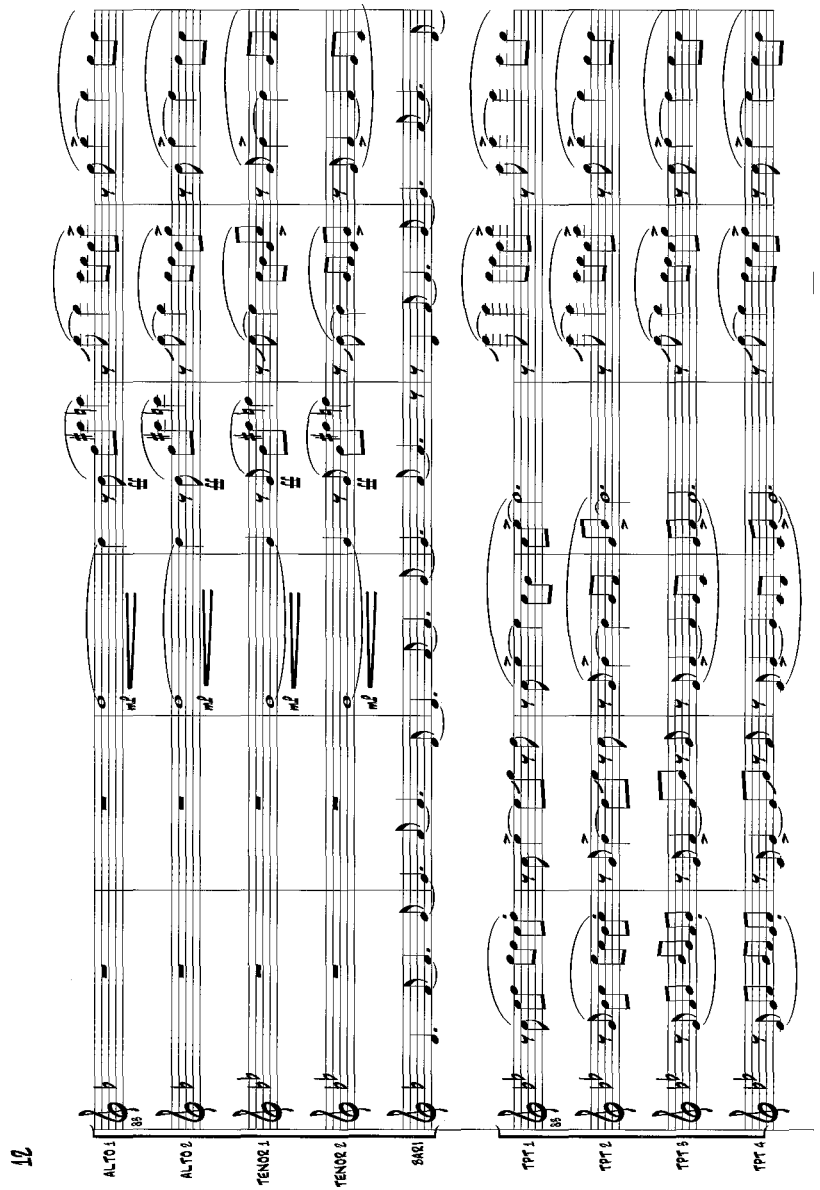

BACK TO A4
TPT. SOLO AD-LIB
TBN 1
TBN 2
TBN 3
TBN 4
BASS
DRUMS
PNO

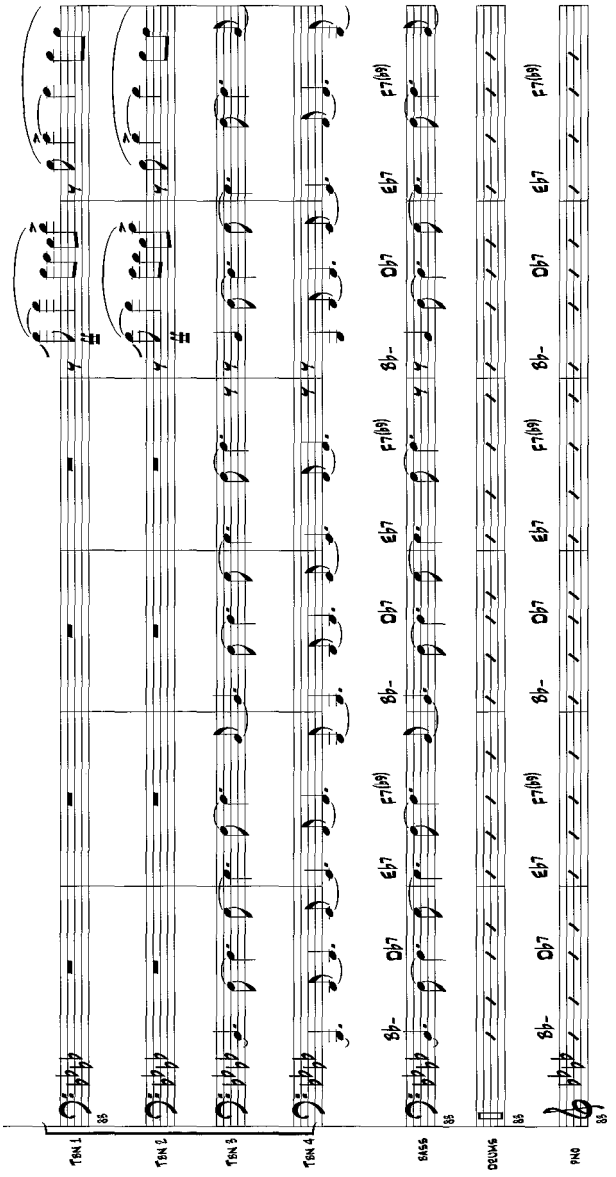

10
MAMBO ON CUE PLAY ALL X'S
MAMBO ON CUE PLAY 3RD & 6TH X ONLY
ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
TPT 1
TPT 2
TPT 3
TPT 4

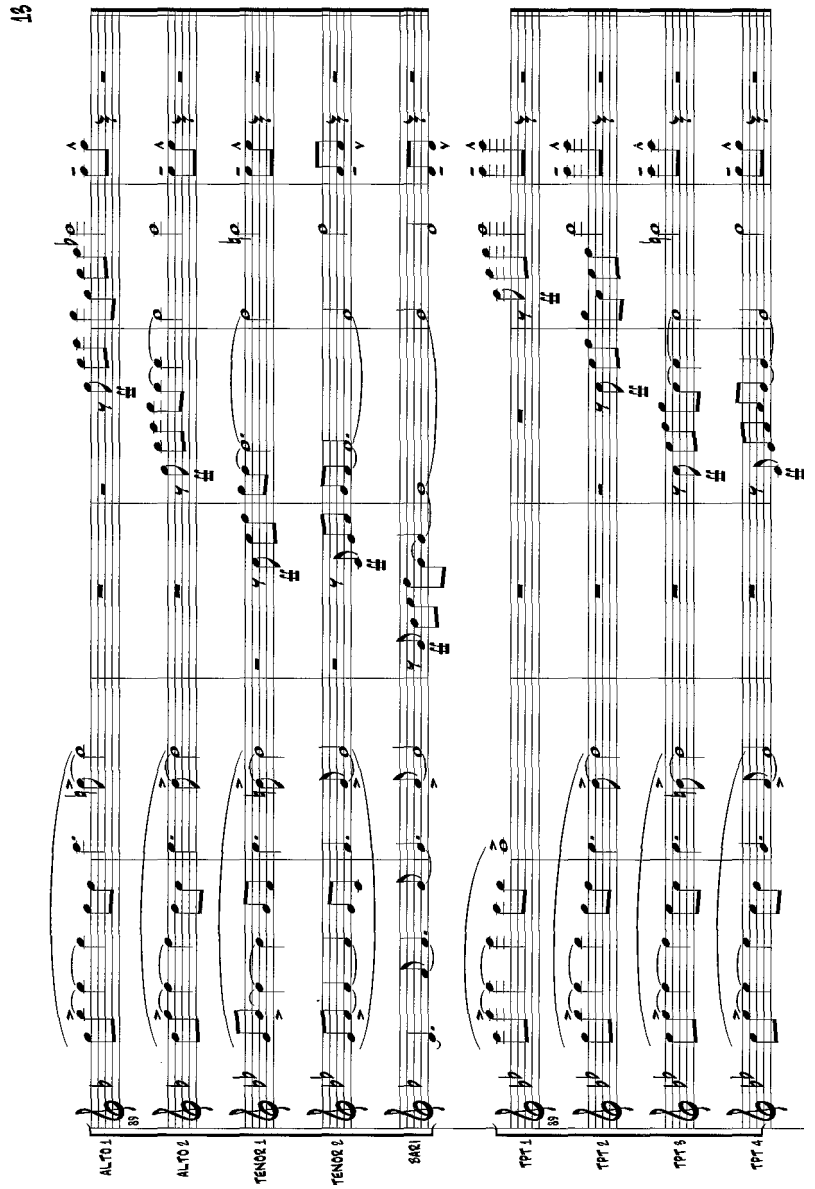

MAMBO ON CUE FACE 1ST & 4TH X'S
TSN 1
TSN 2
TSN 3
TSN 4
MAMBO ON CUE (6X'S)
Eb7
Db7
BASS
DRUMS
PNO

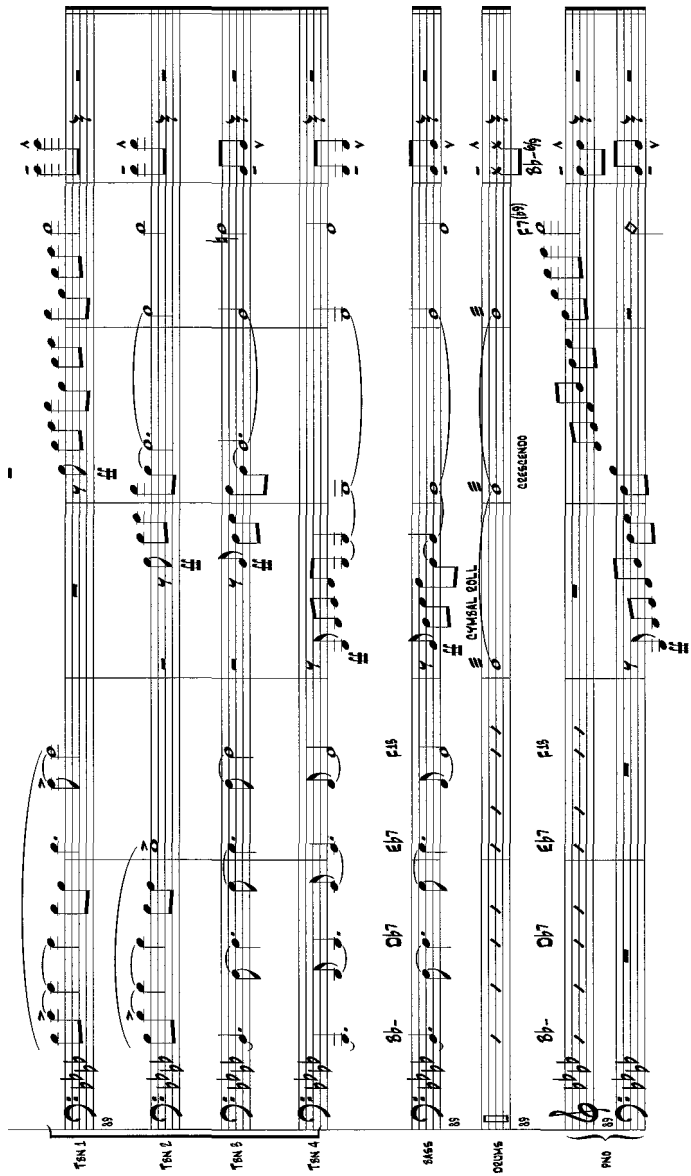

11
ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
TPT 1
TPT 2
TPT 3
TPT 4
CRESCENDO


TSAX 1
TSAX 2
TSAX 3
TSAX 4
BASS
DRUMS
PNO
CRESCENDO


12
ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
TPT 1
TPT 2
TPT 3
TPT 4


TBN 1
TBN 2
TBN 3
TBN 4
BASS
DRUMS
PNO


13
ALTO 1
ALTO 2
TENOR 1
TENOR 2
BARI
TPT 1
TPT 2
TPT 3
TPT 4


TBN 1
TBN 2
TBN 3
TBN 4
BASS
DRUMS
PNO
CYMBAL ROLL
CRESCENDO