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Percussive Arts Society

The Percussive Arts Society is a worldwide organization founded in 1961 and incorporated in 1969 as a not-for-profit corporation under the laws of the State of Indiana and the State of Illinois. Its purpose is educational, promoting through its activities a wide range of musical knowledge, encompassing the young percussion student, the teacher and the performer. Its mission is to facilitate communication between all areas of the percussive arts. PAS accomplishes its goals through six annual issues of *Percussive Notes*, its worldwide network of

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Interview with John Cage

Dr. Stuart Smith, Editor
Percussive Notes Research Edition

John Cage
New York, NY

Dear John
We met a few years ago. I was working on an article "The Early Percussion Music of John Cage." I cam to New York City and you very kindly helped me with it.
I have recently been appointed editor of Percussive Notes Research Edition, a journal devoted to the study of percussion instruments and music. One of my first thoughts was to ask you a series of questions and print your answers. We percussionists feel a great debt to you. You have enriched our world. We would be intensely interested in and further enriched by your thoughts.

Best wishes,

Stuart Smith

Q: In what ways have your attitudes changed about the use of percussion instruments since you wrote on the subject in *Silence*?

A: I remain a percussion composer whether I write for percussion instruments or not. That is, my work is never based, structurally or as an instance of process, on frequency but rather on duration considerations. Within time I write for friends who are virtuosi, strangers who play in orchestras, myself growing old, indeterminately or determinately, always non-intentionally. Since 1968 I have found two ways of turning intention toward non-intention: musicircus (simultaneity of unrelated intentions) and music of contingency; improvisation using instruments in which there is a discontinuity between cause and effect.

Q: Did your early involvement with percussion music in some way influence you *in* composing with 'chance' methods and *to* compose with 'chance' methods?

A: Variation in gongs, tom toms, etc. and particularly, variation in the effects on pianos of the use of preparations, prepared me for the renunciation of intention and the use of chance operations. Study of the philosophy of Zen Buddhism with Daisetz Suzuki was substantial to these steps.

Suzuki gave a lecture on the structure of the mind. He drew an oval on the blackboard. Halfway up the left-hand side he placed two parallel lines. "They are the ego which has the capacity of flowing with its experience—out through the sense perceptions to the world of relativity; in through the dreams through the collective unconscious of Jung to the Ground of Meister Eckhart—or closing itself off from that experience by means of its likes and dislikes, its memory. What Zen wants is that ego flow full circle." Needing a musical discipline as strict as sitting cross-legged, I chose chance operations.

Q: What are the special responsibilities, as you see it, that we percussionists have in the world today?

A: I still believe what I wrote in 1939 (*Silence*, p. 87). "Percussion music is revolution." New music: new society. I don't think, as some seem to be thinking, that the percussion should become like the other sections of the orchestra, more expressive in their terms (overtone structure, frequency). I believe that the rest of the orchestra should become as noisy, poverty-stricken, and unemployed as the percussion section (or at least grant its acceptability in musical society). I do not mean anything hierarchical. I just mean accepting the fact that noises are sounds and that music is made with sounds, not just musical sounds. Hopefully, new society based on unemployment. Why have labor-saving inventions otherwise?

JOHN CAGE, composer-conductor of "organization of sound" music, has written the score for today's Columbia Workshop drama, "The City Wears a Slouch Hat," which will be heard on WBBM-CBS at 2 o'clock this afternoon. He conducts from a regular score—but uses percussion or rhythm instruments exclusively.

THAT'S A TAM-TAM—not a tom-tom—that Ruth Hartman is striking. Ruth, a violinist with the University of Chicago orchestra, beats this percussion instrument for special sound effects in the John Cage score and production on Columbia Workshop today at 2 o'clock, WBBM-CBS.

SOUND INSTRUMENTATION is pretty spectacular and unusual in John Cage's compositions. On Columbia Workshop this afternoon you'll hear Stuart Lloyd, Claire Oppenheim and Celia Amidon, left to right. Stuart, trumpeter with the University of Chicago orchestra, beats Chinese gongs; Miss Oppenheim, violinist with the U. of C. orchestra, holds a Siamese rattle. Mrs. Amidon, piano teacher, plays various sound instruments.

RADIO

News and Programs

THE CHICAGO SUN

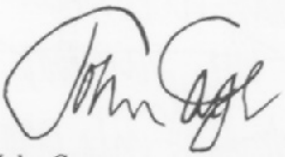
SUNDAY, MAY 31, 1942 ★ PAGE 3

Photos courtesy of the John Cage Archive, Northwestern University Music Library.

Q: Would you speak about the Sonic/Philosophic issues you were exploring in "Child of Tree"?

A: The use of plant materials as instruments brings about a continual change of instruments. Obsolescence leads to music of contingency (see first answer). An example is "Inlets" which uses conch shells filled with water. They must be tipped in order to 'make' them gurgle, but sometimes they gurgle and sometimes they don't.

Best wishes,



John Cage

1

Child of Tree

~~solo for~~
percussion solo

~~Instruments~~

Find 10 "instruments", one of which is a pod (rattle) from ~~the~~ a poinciana tree ~~which~~ ~~these grow~~ ~~growing~~ in Mexico (e.g. in Cuernavaca). Any of the 10 (including the pod rattle) may be ~~a~~ several (of different sizes) ~~rather than~~ a single one. Several pod rattles or other "instruments" may be counted as one "instrument", ~~they may be counted~~ accord. to their or ~~as the number they actually~~ actual number ~~separated~~ fall into groups or they may be ~~grouped~~ (~~e.g.~~ i.e., 5 = 5 or 2+3, etc., or 1 or 5, or 2+3, etc.)

V

Another (preferably several) of the instruments shall be a cactus (or part of one) (live or dry) or a genus having a solid body and spines which are relatively free of other spines, so that when one spine is plucked (by means of a needle or toothpick, etc.) it issues a single pitched sound. These instruments require amplification by means of cartridges or cartridge-like means involving an "alligator" connection, the needle connecting the needle inserted at one end in the plant material and at the other end in the cartridge.

A single such instrument provides a gamut of pitches, sometimes quite extensive. Therefore cactus cacti will be counted acc. to their actual number.

The Garden of Delights

Jean-Charles François, percussionist, composer, conductor, studied at the Paris Conservatorium and with the Australian composer Keith Humble. He has served as the co-director of the Centre de Musique, at the American Center for Students and Artists in Paris (1966–68), and as principal percussionist with the Melbourne Symphony Orchestra (1969–71) in Australia. He joined the Music Faculty of the University of California San Diego and served as the Director of the Center for Music Experiment from 1979 to 1982. Extensive activities as a soloist and composer in Europe, Australia, United States and Mexico. He is a founding member of KIVA.

I.

When John Silber invited me in 1975 to participate in the improvisation project KIVA, I had many doubts about improvisation. Even now that the work in KIVA has been undoubtedly the most significant musical event of my musical career, very strong reservations remain on the subject of what musicians generally mean by improvisation. The idea that improvisation involved a process of conquering a certain freedom over the tyranny of a fixed structure seems very naive. At best it can constitute only a circumstantial moment of a simplistic dialectical model in which destructions of structures engender new structures in an endless chasing game. My main objection to the idea of improvisation as a "free" music is that it falsely draws our attention to the problem of non-fixed immediate articulations played upon a background of a strong "linguistic" structure or tradition which is inscribed somewhere on paper or on the collective mind of a cultural group. Strictly speaking, since notation cannot describe sound in the absolute, there is always a non-fixed area (called interpretation) which provides "freedom" to the performer.

Oral cultures, as a matter of fact, very often present far more constraints and stricter rules than our democratic society regulated by print and written planification. And in improvisation, the raw manifestations of the body too often are the expression of educational habits, uncon-

scious belief systems, "clichés" and fragmentary remnants of old pieces: the prejudices of performing musicians seeking pleasure in directly playing personalized sounds are deep-seated written marks more difficult to "erase" than the innocent pencil traces of a composer. It is only to be expected that asking any musicians to play whatever they want on the spur of the moment will inevitably result in the most conventional and obvious combinations of sounds. Only the long reflection of the composer working and re-working the score seems to guarantee the originality of a musical language. The permanence of the written signs allows the composer to study in an objective manner what has been written yesterday, to analyze it critically and thus to imagine the future accordingly.

II.

Prior to my involvement with KIVA I was preoccupied with the problem of contemporary notation and its corollary music making situation. The questioning consisted in pondering why in our society such strong emphasis was put on the use of notation for the production or perception of sonic events in which the eye, seemingly, ought to play very little part. Why in our educational system, are performers never allowed at any time to produce sounds not predetermined by some notational sign?

The main paradox of notation is that abyss of chaos, oral communication and improvisation, is opening before our eyes at the precise moment that notation is being taken seriously. The paradox is easily explained if one thinks that the wish to control the sonic world in its *totality* (the ideal of the contemporary musician), leads logically to the direct manipulations of musical material through instruments or electronic devices. Improvisation can be thought of then as a *total writing* performed immediately in the acoustic reality without intermediary; the gestures of the instrumentalist are the expression of this notion of "notation."

But before this ultimate catastrophe occurs many cracks appear on the wall of the logic that has up to now governed the contractual relationships between the composer and the performer. This contract seemed to function well under the premises that:

(a) notation is limited to a very approximative representation of sound like a formal grammar (combinations of pitch over time) which is the realm of the composer, and

(b) that which is not notated, the actual sounds themselves and products of the performers' interpretation, is governed by an oral tradition perpetuated through long-established educational institutions.

Under this model the role of the composer is strictly limited to a formal re-arrangement of a *given* situation (tradition), and the performer can interpret easily signs that articulate a common internalized context. The romantic concept of a close identification of the work with its author through the score (each work different from every other, each author different from any other) has been the origin of the very rapid evolution of musical language in the XXth Century, away from tradition. Notation has become an absolute tool that has to reflect not only certain combinations of sound within a unified music theory, but the ideology of the author himself, a theory in itself, a particular sound world separated from other sound worlds. The retention of the past through libraries of scores, the access to world musics through travel, translations (transgressions!), have multiplied the different cultural and theoretical contexts in which music is practiced today.

Concepts of notation which consider its main function to be the storage of sound in its pure form create the illusion that the authenticity of tradition can be now inscribed on paper. Theoretically the universal characteristics of our notational system allow us to play within the same concert music of different styles, eras and places. According to these precepts the detached reading and playing of the score would produce an exact rendering of the musical ideas of the composer. But we are well

aware that tradition is a long learning process not easily rationalized by some analysis. The concept of "swing" for example can only be grasped (and realized musically) if one has grown up in a certain environment and proper explanation of this world would be an infinite discourse/notation.

III.

The objectivation of notation to ensure that the work of the composer be self-contained in the absolute of the score, tends to work against tradition. The precepts given to performers of contemporary music, as articulated by Stravinsky, deny interpretation (emotion, romantic tradition), and require the performer to play strictly what has been written. The score can be viewed as a set of arbitrary instructions prescribing a certain number of performing actions. The player is only a connecting belt between the composer and the public, a string puppet without feelings or emotions. In order to articulate the "silence" of writing the performer has to be completely detached from any worldly desires and levitate in the ecstasy of an insubstantial mist.

Unfortuately the difficulty lies in the continued presence of tradition through educational institutions which gear the performer towards old music. The result is that performers are mainly responsible for the alienation of the public towards recent music in two ways:

(a) they never (rarely) play living composers and/or
(b) they play living composer's works without any deep understanding of the context in which they are inscribed.

For performers, tradition is not an element objectified on a piece of paper out of contact with the body (as for the composer); it is, on the contrary, a given factor inscribed directly in their mentality, beliefs, instrumental gestures and attitudes. Tradition is deeply rooted in their unconscious, internalized as a "natural" state that is not to be questioned.

In the "play strictly what is written" precept of the Stravinsky-Cage linkage, tradition has to be set aside, the sound purified from a collective authentic song: let the sound structures be themselves. The project seems simple enough: keep your head cool, play with an abstract detachment, the nose high. But the actual performance of these disarticulated objects requires in fact a very slow conceptual practice, a strict discipline, and an intimate acquaintance with the sound combinations, none of which can be achieved in circumstantial instances. The rapidity of sight-reading is only a dangerous illusion. Another complication lies in the fact that the mechanisms and ideological elements of tradition, embedded mostly in what notation really "means" beyond that which it actually represents and also embedded in the social structures of music making itself, are still per force (performance has to take place) present in these arbitrary scores. Consequently, tradition has to be ever present in the mind of the performer and at the same time must be absent and disincarnated.

However, most contemporary music still springs from a tradition in which a musical discourse is unfolded with a formal identity and an ultimate signification. Tradition is ever present but the language itself is changed from piece to piece, composer to composer. In this context each piece of music creates a tradition in itself, plated over older sediments of tradition. Each piece contains a different "Song of Origin" that needs to be discovered. The performer needs to learn the language of each composition until it becomes second nature, and the sound can be articulated without conscious effort. For example, Webern's language has long been (and still is) considered as a disarticulated discourse: "let the structures speak for themselves." The fact is, that Webern is at one and the same time a re-incarnation of Mozart. His musical language requires from the performer a total dedication to the discovery of Mozart behind Webern until the music speaks as fluently as Mozart itself. The contemporary work which determines its own context through a very detailed notation is like a fortress that needs to be beseiged until it surrenders its hidden "swing."

IV.

Why make all these detours through notation and the enigma of its performance in an article on improvisation? The attempt is to displace the debate away from the conflict between the deferred text and the immediate presence of the sound, away from the conflict of a fixed structure versus a spontaneous free play, in favor of a discussion on depth, involvement and authenticity in performance.

The contemporary music scene is an endless drama: notation, by deferring the musical concepts of the composer to a later date, also creates a situation in which the "proper" performance is deferred until all parties have a chance to assimilate the particular context. And when finally the deferred performance really occurs, the music no longer resonates with the historical circumstances in which it took place. Mahler, who cannot be considered as a revolutionary musician in his time, only recently received the performances he rightly deserved. With some luck we will have the same bright opportunity to hear the second Viennese school as it should be played ten years from now!

Meanwhile the performance of contemporary music is mostly a matter of polite theatre where all parties only pretend to play, make believe that indeed the sounds on the score are realized in the acoustic space. The surface messages are always colorful and fascinating, the actual sounds are all grey. Is this a better explanation rather than the imperialism of the eye in our society, for the proliferation of visual imagery and theatre pieces in the recent repertoire at the expense of any strong interest in the acoustic universe? The simulacrum played before our eyes, the theoretical writing about it, the journalistic "packaging," are more important than the sounds themselves.

Of course, the recent production of theatre-music pieces needs to be taken seriously as it punctuates the end of a unity of the sounds, their significations and their representations. By using all the richness and ambiguity of textuality (towards a total writing?), by multiplying references in diverse directions, a playful art is created devoid of any primary sense or primary reference. There is no plot to follow as in traditional theatre, there is no formal musical thread, but a world placed between the realm of the ear and the eye in which neither can win.

Theatrical appearances are not absent from many attempts at improvisation: the representation on stage of communication patterns, spontaneity, free play and various reactions are often just a stage play without any deep-seated sonic content. Here, this theatre does have a simple plot, a surface message to be conveyed, enacted before a bemused audience. "See, I improvise" is only a pretense of reality.

The mediocrity of contemporary performance in general has to do with the rapidity with which theatrical structures can be realized, and the incredible slowness in which different sonic elaborations can be assimilated. Recent musical compositions which have attempted to render notation self-sufficient by accounting for all aspects of sound, demand, more than in the past, a long investment on the part of the performer. This long investment is made particularly difficult in most cases because it should never become apparent at the end in performance: the performer has to remain neutral. The rapidity of sight-reading is a dangerous factor because it gives the illusion that the performing contract has been fulfilled by just playing correctly the written notes. Only very few dedicated performers are able to deal with this situation, but for the most part, performance of new music with only a few rehearsals is a terribly uninteresting affair.

Certain composers have sought solutions to the crisis of notation in graphic designs which do not directly or precisely represent sounds or actions, but suggest a certain musical context through visual/metaphoric means. The performer with an increased freedom of translation from written signs to sounds can in theory better articulate the composition through an intuitive understanding of the visual material. Besides the composer (painter?), the performer, as a super-interpreter becomes effectively included in the creative process. In reality graphic notations leave the performer hesitant between:

(a) the need to be even more involved than with normal musical notation in order to discover the deep implications of the score, and (unfortunately more likely) (b) to have a completely cynical attitude in which any sounds whatsoever will do as an interpretation of the graphism, since no one can prove that it is not the case.

Furthermore, if the visual material is effectively separated from the sound result, any visual material can be used as score; the ones provided by composers will do as well as those multiple examples of graphisms in contemporary society. Graphism would even be only one of many solutions providing inspiration for the performer: why not philosophical texts, other musical sources (tapes), mathematical equations, or any other type of notational systems? The deep involvement that such interpretation would need directly points out to the performer that the creative initiative has clearly passed into the realm of realization, and that the matter now has to be tackled outside of any direct visual association. Rather, it must be addressed in the direct performance of the sound themselves.

The illusion again lies in the idea that a performer can react effectively, spontaneously, to any kind of stimulus, visual or otherwise; that a performer can react effectively without a lengthy period of adaption, reflection, and physical practice.

V.

It is with all these problematics of contemporary performance in mind that a project in improvisation like KIVA imposes itself as an absolute necessity. We set ourselves to find out all the implications of making music (within the real context of our society) without the outside programmation of a composer through notation on paper. The main hypothesis is that there is a realm of creativity in performance different from the invention of the composer's eye. This creativity of performance certainly includes interpretation in the traditional sense, but also far exceeds the limits of score realization.

When listening to performing artists who present their own music, Anthony Braxton, for instance, we are struck with the similarity to the concerns of the most experimental and hazardous compositions. There is not much residue from the jazz tradition in which these artists grew up. But there are very important dissimilarities with the *performance* of contemporary music scores; they lie principally in the intimacy between the goals of the music and the way it unfolds in the actual time of the performance. If there might be an intention to produce a certain sound result, the sound result is for certain *intended*. It does not matter how this music is elaborated prior to performance (through writing? instrumental practice? memorization?); the performance itself and the performance creating itself is the main referent to be considered. In Braxton's solo saxophone recitals, there is not much theatre; there is nothing acted in front of our eyes. The extended techniques, the instrumental virtuosity are not "effects"—smart dressing devices for intelligent structures, or brilliant flowers of rhetoric, but they are the basic ingredients—the sonorous mass—on which the music is elaborated/articulated. The most outrageous events are thus always music, that is *not* outrageous at all, outside the realm of an avante-garde which *shows* the world.

How are we to arrive at a similar result—a music elaborated from the performer's point of view—for us, poor souls completely programmed by a long history of playing score after score? How to escape the inevitable presence, inscribed in our bodies, in our gestures, of reminiscences, bits of pieces from the written repertoire? How to escape the endless repetition of clichés, even the most pleasurable ones?

VI.

In KIVA a very long purification process was necessary to create musical materials that can now be considered as our collective identity. The initial period of work was essentially *negative* in its attitude towards the most prominent features of written music. Anything we could readily identify with the repertoire to which we had been most exposed was denied in

our exercises and situations. In so far as it was possible we refused pitch scales (especially equal tempered ones) and greatly simplified our pitch situations to a minimum of possibilities. We tried to eliminate any recognizable patterns, rhythms, periodicities, melodic lines, etc., from our playing. We attempted to create chaos as a condition for the emergence of a new musical context.

At the same time we explored in depth elements that are difficult or impossible to notate: the micro-ornamentations of a single sound, the internal, infinitely small variations from which an isolated sound draws its character and meaning. Electronic amplification became an absolute, indispensable ingredient of our ensemble for the projection of these micro-cosmic aspects of the sounds. We worked also to create superimposition of complex random structures, creating a rhythmic frame impossible to define through notation, a time flow not programmable through the division or addition of a measurable referent unit.

For two years nothing very interesting happened. After this lapse of time the germs of what constitutes our music today started to appear, suddenly it all seemed to make much more sense, an organic music had slowly emerged from nothing. While we tried desperately to un-learn the gestures of prior experiences, slowly a new gestural repertoire was elaborated. Not that patterns, simplistic forms, remnants of traditional instrumental technique and prior musical aesthetics were entirely eliminated in the process, but simply that a collective sound had emerged in spite of the continual presence of these past sediments. The center of interest had been displaced.

In retrospect, there is a suspicion that the important factor of the process was not the details of the exercises and conditions we consciously elaborated, but the lengthy lapse of time during which we pursued our activities. Of course the cleaning out of the past from our minds did set an attitude determinant for the result, but the essential factor was the repetition of the same activity for seven years. A theory of "experiential education" could state that if you put together several people in a certain environment without a precise goal in mind, without a precise reference to follow, after a certain time (2 years?) a certain language will emerge from nothing. In our case there is the feeling that prescriptions, discussions among ourselves, criticisms, did not particularly help or hinder the emergence of this organic musical context which now defines KIVA. Of course the recording and immediate play back of all our sessions provided a useful mirror image of our activities, a feed-back analogous to the score.

VII.

From repetition[1] of the same conditions grows a continuously changing universe. How can we explain this paradox? A criticism often levelled against improvisation is that real change is impossible since the performers always play what they know best, what is most pleasurable to their ears, what is most comfortable to their technique. Nothing from the outside comes to challenge them. On the contrary, the score as an external object, external to the composer, external to the body of the performer, can effectively, consciously affect changing conditions, instrumental techniques, aesthetic concerns, etc. We can see that oral cultures tend to be conservative and change extremely slowly, while the model of our literary society has been to innovate throughout history.

Change made possible by writing or external prescription is very different from the change experienced through the constant repetition over and over again of the same activity. The score can best have access to the macro-structures of music and will chiefly affect the architecture and the general grammar by building artificial languages based on linguistic models, while the details are anchored in the weight of tradition. By repetition we affect the details, the micro-structures of the sound themselves; each inflection is different from the previous one, a whole world emerges to which we were deaf. It is through repetition of the same gestures over and over again that accidents are likely to occur. It is by walking and walking, often for a very long time, that there is a slight

chance of tripping and falling on the floor. The world of the small variation, of the accidental physical recovery evolves slowly, but ultimately it can be perceived as much more varied and rich than the infinite prescriptions of imaginative scores.

The blind involvement in the most pleasurable or comfortable sound situation, in spite of the mirror of the tape recording, precludes the participants from having an objective outside view of their own activities. Furthermore, the very slow elaboration of an autonomous sound context independent of surrounding cultural entities eradicates the signification of any critical assessments: what references, what criteria could be used to measure success or failure? In this sense KIVA is an environment that cannot be contemplated from afar but needs to be entered into (or left aside) with some degree of involvement.

VIII.

How does communication take place in these conditions? We have rejected the view that improvisation is primarily a better opportunity (than written music) to establish communication patterns between the musicians and the public, and among the performers themselves. The idea of taking into account the reactions of others and of making them react engenders very simplistic languages. It cheapens communication by reducing it to a mechanistic model in which a set of words or of sounds will correspond to a particular reaction. The result again is to play the theatre of communication rather than to communicate anything, to just pretend that a certain action is the direct result of another.

In our work no attempt at communication was put forward. Each individual in the group was invited to carry autonomously their own thread, keeping their identity and superimposing their personality on the discourse of others. In this way no dialogue or conversation was allowed involving imitation, reaction, commentary or other linguistic devices. The basic concept was to establish the co-existence of forces living in the same space.

This long time co-existence over several years has engendered slowly a very subtle mutual influence and knowledge in which the communication flow is far richer than the immediate surface "I want to tell you." The influence is at the environmental level in which things are not questioned or tyrannized, but lived and practiced in their own contradictions. What happens after a certain lapse of time is that the three distinct environments of the respective members of the group become a single one without any loss of identity on the part of the individuals.

The contact with the public has to be considered in the same context of entering an environment. No surface messages should be expected and a slow acquaintance process might be necessary for any understanding to take place. No easy answers can be given to this difficult problem of public presentation. The only certainty is that no short-cut or simplistic view can be a satisfactory solution to the general alienation of artists and their public.

IX.

When we attempt to escape the spectres that haunt us, through absolute rejection, we can be certain that they will always reappear where we least expect them. Therefore, the question to be asked is where does notation forcefully re-emerge in our KIVA project of notationless music? The notation system of KIVA is a garden of delights. It manifests itself in three distinct fixations.

First it is a physical/topographical space in which we move, made up of a series of selected instrumental elements, special devices, electronic systems and interactive resonances. The KIVA instrumental and electronic set-up grew slowly, parallel to our playing style and contributed greatly in defining a set of possibilities which belong only to the KIVA context and define it timbrally. Each improvisation consists in literally travelling through this space/garden of instruments and devices, each time along a different path, each time exploring new quarters of the garden and leaving others unexploited.

The second aspect of the garden is a set of mental states stored in memory and manifesting themselves through the voice in exercises. The voice, as the privileged human musical instrument, serves as an important model to the series of sound possibilities that delimit KIVA's music. In actual fact the voice only appears in performance generally in its dissimulated form (through the instruments), but one could think of the sound garden of KIVA as an enormous mouth and vocal apparatus exuding non-sense. This fixation in our memory of a set of sound possibilities allows us to recall them in random order during the performance—a walk through our mental states. Notice that exactly as with ordinary language, the recall process from memory is not a self-conscious compositional act, but a second nature automatic reflex action. This unconscious travelling through memory is the condition of a delightful ecstasy.

The third notational instance concerns the mediating link between the second and the first, that is the set of particular performative gestures which translate the mental state into instrumental sounds. These gestures can be thought of as a direct writing on the instruments. They have been learned in parallel to the mental states and literally contain the technical memory of the set of sound possibilities.

The image of the garden of delights suggests a very different notation concept from the usual musical notation. In one way, because it is circumscribed, embedded in physical objects and physical actions, KIVA's musical situation offers a very rigid closed system when compared with the multiple stylistic possibilities of traditional notation. But in another way this fixation in the physical realm of a single musical piece called "KIVA," is more than mitigated by the continual slow evolution of the diverse aspects of the garden. The instrumental set-up is not an absolute frozen fixed concept, but constantly undergoes modifications, often adding new elements, discarding others. The cultivation of the mental garden, likewise evolves slowly into different topographies.

The performances of KIVA consist in walking through this garden of delights which strictly defines the limited context of the group, but always using a different explorative path that cultivates and modifies the aspects of the garden so that no performance is ever repeated. The music in this way is always the same, yet always different and always slowly evolving. This walking is nonchalant, our steps lead us gently to our favorite place and continue round the periphery admiring on the way how these fruits and flowers have developed this spring. Next we will re-arrange this part a little differently. Tomorrow we will visit the little hill. Let's not go this way because of the ghost. But he is a *nice* ghost.

Is this improvisation? The closeness, the strict fixation of the system would suggest that improvisation would be an improper word. How can we *name* that activity? This is not for me to say in this place, at this time[2].

KIVA

The group KIVA, composed of Hi-ah Park, dance, Jean-Charles François, percussion, and John Silber, trombone, was created in 1975 as part of the Center for Music Experiment at the University of California, San Diego. The origin of the name KIVA comes from the Pueblo Indians of New Mexico and Arizona; it is the name given to a central house in the village, generally half underground. It is a place used for political meetings, for building arts and craft objects, for workshops, religious cermonies, poetical and therapeutical rituals, all these at the same time. These multiple aspects and usages of the Kiva in Pueblo villages, sacred and profane all at once, have been the reason for the choice of the name KIVA. This name should not be understood to mean that the group is working in any way in the perspective of an imitation of the art or of the society of American Indians. On the contrary the group KIVA is devoted to the elaboration of completely new gestures, dance and music through experimentations with non-written forms, live electronic music, extended instrumental techniques, coexistence of diverse media-forms.

The group KIVA has performed extensively throughout California notably at the Contemporary Music Festival, California Institute for

the Arts (1979), at the Center for World Music, Fort Mason San Francisco (1979), and on the University of California Campuses (1980). It has participated in the International Computer Music Conference (1977), and the Conference on "Oral Modes in Contemporary Arts and Cultures" (1981), at the Center for Music Experiment, UCSD. More recently the group performed at the Festival/Symposium Teilhard de Chardin, Arcosanti, Arizona (1981), at the Forum of Contemporary Music organized by the CENIDIM in Mexico City (1982), and in Europe (November and December, 1982). KIVA received grants from the University of California, the National Endowment for the Arts, and the California Arts Commission.

The group KIVA has been working in particular on the total elimination of the written score or fixed choreography and on the negation of certain elements directly related to the written tradition of the Western world; negation of rational thought, of a certain grammar, of communication based on the content of the message. The search was for the development of a discipline that would move away from syntactical and analytical models of traditional Western art, but would strive to re-create an oral tradition. Slowly, over a period of seven years, a collective dance/music has been elaborated which belongs in every way only to the context of the group KIVA; repertory of gestures and of instrumental techniques, tuning system, set of new instruments, special electro-acoustic system. The group presents programs of improvised dance/music of about one hour and a half without interruption. The group KIVA offers also workshops.

References

1. By repetition I do not mean specifically *repetitive patterns*, but rather the repetition of a general activity encompassing a set of gestures repeated from day to day.
2. This paper has been developed through many conversations with Hi-ah Park and John Silber (KIVA members), my colleagues from UCSD Aaron Cicourel, Michel De Certeau, David Antin, Frantisek Deak, Jerome Rothenberg and Michael Davidson. I had also important conversations with Vinko Globokar, Carlos Alsina, Jean-Pierre Drouet, Benjamin Boretz and Richard Boulanger. The final English version of this paper was elaborated with the precious help of Nancy François.

The Gesture of Improvisation

(some thoughts, reflections and questions regarding percussion music)

—by Malcolm Goldstein

What does improvisation ask of the performer
that is so different from printed, through-
composed pieces of music?

. . . perhaps, "who are *you*? How
do *you* think or feel about
this moment/sounding?"

Origins of gesture:
percussion: the striking of one object against/with another
with some sharpness; impact.
percuss: to strike (something) so as to shake or cause
shock to.

Extensions:
to strike: hit, smite, beat, thump;
affect, touch, impress, occur to;
collide, bump;
attack.

Nuances:

strike: knock, hit, tap, rap, slap, pat, thump, beat, bang, slam, dash; punch, pound, whack, batter, pelt, buffet, belabor, club, belt, lambaste, clip, swat, wallop, throp, pulsate, bruise;
also, give impetus, impel, push, thrust, prod, elbow, shoulder, jostle, hustle, shove, jolt, bump.

And another aspect:

touch: feel, palpate, handle, finger, thumb, paw, fumble, grope, brush, glance, stroke, caress, rub, scratch, shake, scrape.

Consider the differences between a technique that is unconscious and one where each gesture has an awareness of its own quality.

What would happen to the performer?
What would happen to the music?

Consider the usefulness of a technique that is "automatic" to "do the job," that is, a learned behaviour, and the significance of a technique that is "discovered" or "invented" to realize needs as yet unheard.

What is accomplished with the learned technique?
What is lost?

. . . to experience and feel the impact of each stroke,
to have it reverberate in our own body,
to resonate, in outward thrust, another response/gesture, to continue the dialogue.

Consider the possibility of creating a technique that is the realization of necessity (what is needed to be expressed; what is needed to be done—needs of the performer and the music being done/enacted), rather than only the unconscious physicalities of some other music (time and place).

Improvisation as a process of focus, in touch with the needs of the present music (not a repetition of one's habits—learned behaviour from the outside or even one's own habits); aware of the needs of the moment/sounding: a dialogue of discovery.

Improvisation as a process of defining a technique that is itself always evolving.

Why have certain standard performance techniques evolved?
Could these have reference to specific needs of a specific
time and place?
What do these have to do with *your* specific needs as a
percussionist/player of other people's music?
of your own music?
What is the difference?

The function of a single stroke: to sound something.
The function of repeated strikings: to extend the sounding
of a single stroke; perhaps to modify
and give variety of articulation, dynamic
and, possibly, timbre.

Explore the sound of a single stroke. Hear clearly
the sound—its articulation,
the overtones of its center and
the resonance following—
to experience its particular
presence;
with awareness of the physical gesture
that creates/is at one with
the sound.
Hear the silence after the sound,
with awareness of your body
within that silence.
Then another stroke, etc. . . .

Use various objects/
instruments (wood,
skin membranes,
metal, paper, etc.)
to be sounded
using various objects
to articulate the
sound, including
your own hand(s).

Hear the sound as responsive to/at one with the
energy, of the stroke rooted in the body/needs
in the presence of the person (you) at that moment.

Explore trying to make the sound always the same
(what is necessary for this to happen?); and, also,
always slightly different, as well as radically
different (what choices are necessary in these
changes? what aspects to focus on to alter?
how does the body gesture participate?).

To improvise in this manner one would have to be always responsive to this continuity of dialogue: the quality and duration of a single sound suspended in silence. Improvisation as a process of discovering (though usually it implies inventing and demonstrating of one's own imagination within a more or less given framework); as a process of focus on a sound-texture/gesture and learning more and more of the nuances, details as well as the expanses and horizons to sound out.

Explore the gradual, very gradual transition from the single stroke, with pause, (allowing for the resonance to complete itself and even then some silence after)—to the articulation of a sound repeated as fast as possible (extended by its repetition).

Explore with one hand sounding (left only; right only) and then with alternating hands, to arrive at a "roll," with awareness of changes of nuances of sound—the articulation, the overtones of the resonance, the partials that are evoked by overlapping through repetition—and your own body vibrating in participation of the developing sound.

Consider the differences of a sound evoked (like by rubbing, brushing, etc.) from the sound source (skin membrane, etc.).

Percussion: to strike a stroke: to hit (sound by impact)
to stroke: to rub (sound by friction)
[awareness of the physical gesture]

Explore the gradual, very gradual shifting of emphasis of
a stroke $\longleftrightarrow$ to stroke
being aware of the nuances of change in your body/the sound: they are one.

Perhaps each percussionist should construct their own instrument(s),
to be able to realize what is their own sense of sounding to
them (and that would change, as one lives, also).
Once again, the thought that the choice of material objects/
instruments and the spacial arrangement of the instruments
relates to the music that is desired/needed, as expression of
a particular person, people, place, time. Compare Indonesian
gamelan, Japanese gagaku, Ghanian drumming, European
orchestra, Jazz ensembles, etc.—music of the whole world.
Compare the changes in instruments of the so-called jazz
drum set over the past sixty years and how these changes
relate to the sound of the music/the ensemble, the need
for and, at once, the development of techniques appropriate
to realize the sound expressive of a person or people
in a music making situation.

Consider the marvelous work of Harry Partch.

Images of what an instrument can do:
images from outside of the instrument since it is always
the human being/culture that defines the image form and
makes it to sound and in what manner (technique).
Images as limitation(s) of possibilities;
images, also though, as beams of light to be extended
out into the present moment.

Percussion music as means of communication
of transferring information over long distances.

Percussion music as a dance of one object upon another
and of the percussionist as dancer:
the breathing of the dancer to make for a phrase;
(the temptation of "technique" to keep the music at
our fingertips and not within the core of our body/our being).

The rich and complex vocabulary of the percussionist's body/gesture:

using one hand only,
hands alternating,
using two different kinds of strokes simultaneously,
single or double notes: the stick rebounding and repeating the note,
upward or downward glancing blows,
striking alternately with butt and head of stick, or using different sticks in each hand,
striking near the edge, or center, or . . . . . ,
muffling the sound by touching the head of a drum with finger tips,
by slackening the tension of the heads with and immediately after the stroke,
thumping with fingers,
clashing together with a swinging motion,
a face to face blow,
damping by touching the vibrating object to the chest,
shaking the instrument in the air,
changing the angle of beating with fast alternating strokes,
rubbing objects together to make a shuffling sound, a rustling sound,
jogged by the hand,
struck with the knuckles, fist, fingertips or back of the hand, or struck upon the knee,
clapping together two objects,
scrapping a stick over a series of notches,
throwing one object at another,
turning a crank to make a whirring sound,
pulling an object through or along another,

and all the techniques described in orchestration textbooks:

the roll,
the flam,
the drag or ruff,
paradiddle and
rim shot.

Think about sources of percussion music:
in dance and play,
in military activities,
in language, etc.

How does the percussion element function in these? What does it have to do with you (the percussionist) now?

Consider the pitch ⟷ noise spectrum possibilities of percussion music; the harmonic overtones of each sound ("definite" ⟷ "indefinite" pitch).
It is at edges of the unknown, at moments of transition, that we are enriched with new insights. Difficult times, perhaps, but times of discovery to help clarify/focus in on the manner of articulating a gesture/one's own sound.

The rich spectrum of objects:
hard metal of a vibraphone plate,
craggy edge of a calf skin drum head,
warm glow of a marimba key,
spongy softness of a cotton or flannel beater,
lacquered brightness of wood blocks . . . . . .

. . . to experience a response (the rich complexities of a human being) to the fullness of this variety.

Explore a variety of arrangements of objects/instruments to be played upon/with.
Explore a variety of distances between the objects to be sounded;
hearing the resonances within the room;
moving through the space at varying speeds;
staying at one place for a while, defining that particular space and then, gradually, learning to define the whole space of that room (that day, that arrangement, as you, then);
playing on the run and stationary, for a moment.

Change it some other day as is necessary.

Brookline, Mass.
10/18/82

Malcolm Goldstein, as composer/violinist, has been active in the presentation of new music and dance since the early 1960's as co-founder/director of Tone Roads and participant in the Judson Dance Theater, N.Y. Festival of the Avant Garde, and the Experimental Intermedia Foundation. Since then, he has performed throughout the United States and Europe, including concerts at New Music American festivals and the ISCM Steirischer Herbst in Graz, Austria. His article, "The Politics of Improvisation," will soon be published in Perspectives in New Music. Through his own solo violin improvisations, "Soundings," he has extended the range of tonal/sound-texture possibilities and brought the violin to new dimensions of expressivity.

The Genesis of "Knocking Piece"

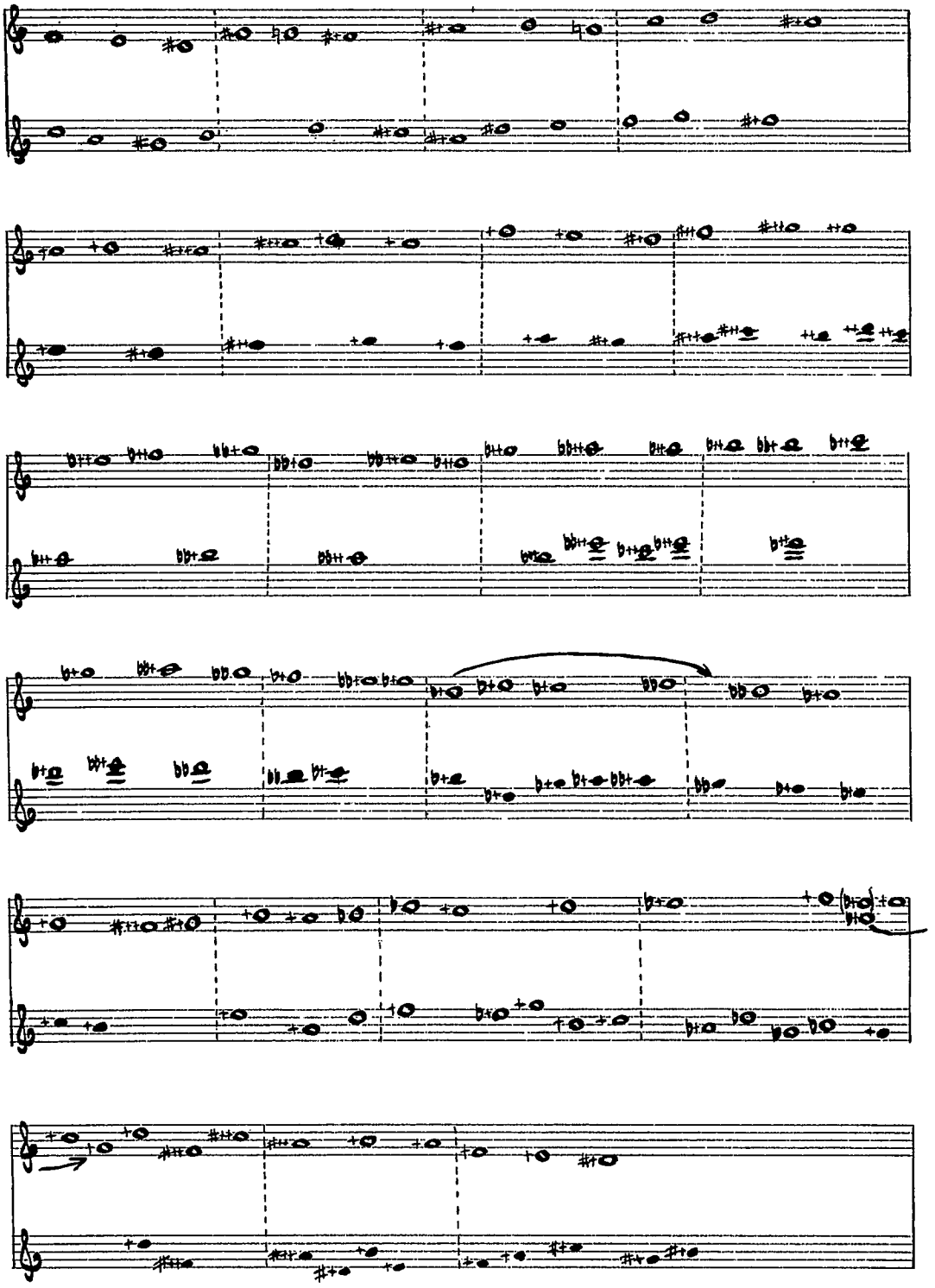
Ben Johnston was born on March 15, 1926, in Macon, Georgia. He is a graduate of the College of William and Mary, the Cincinnatti Conservatory of Music and Mills College. His principal composition teachers were Darius Milhaud, Harry Partch, Burrill Phillips, Robert Palmer and John Cage. Johnston's early compositions use both serial and tonal techniques. His most significant achievements have been his work with microtonality. In addition to "Knocking Piece," Johnston wrote a "Concerto for Percussion Ensemble" in 1952. He retires this year from the University of Illinois where he has taught composition since 1951.

In the early 1960's Wilford Leach, with whom I had collaborated on *Gertrude, or Would She Be Pleased to Receive It!* and was later to collaborate on *Carmilla*, approached me about doing incidental music for his play *In Three Zones*, subsequently produced at Lincoln Center.

I proposed to Leach that the music be composed of every degree of tonal organization from musique concrète shading into literal sound effects, through non-pitched percussion to conventionally tuned instrumental music and just-tuned microtonal instrumental music held together by a microtonally tuned piano. I further proposed that the action be framed by the orchestra and sound-speakers: on one side the just-tuned piano and the pitched instruments, and on the other the non-pitched percussion and noise sources.

The first act of *In Three Zones* consists of a retelling of the same story C. F. Ramuz designed for Stravinsky's *L'Histoire du Soldat*, a variation on the Faust legend. In Leach's version, refugees crowd the bombed out, muddy, rutted roads of a defeated, war-torn country. A young soldier, separated from his regiment falls in with a sinister general, also separated from his troops. Uncertain whether the war is over or not, the soldier feels constrained to obey the general, who proceeds virtually to enslave him. The general is actually an incarnation of the devil.

At a crucial point in the action the two build a campfire and settle for the night. The soldier



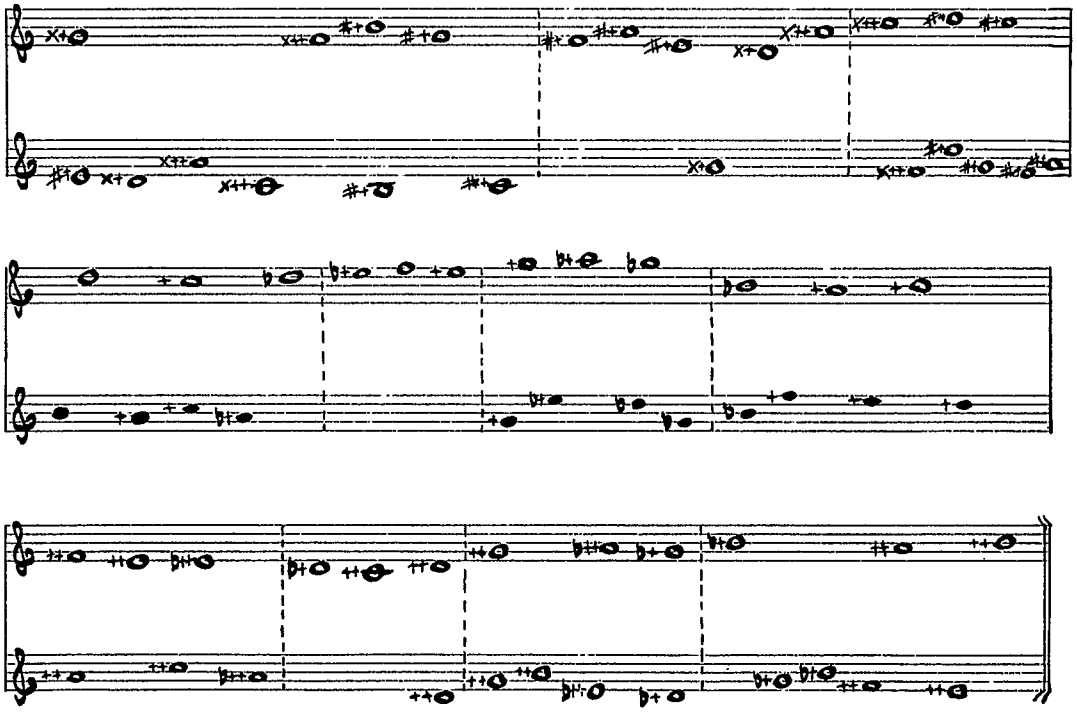


Figure 1. Notation: Uninflected notes indicate C Major just intonation: tonic, dominant, and subdominant triads in 4:5:6: ratio. # raises by 25/24 (ca. 70 cents); ^{b}lowers by 25/24 (ca. 70 cents); + raises by 81/80 (ca. 22 cents); −lowers by 81/80 (ca. 22 cents).

sleeps while the general, who never sleeps, watches. The soldier dreams, and we see his dream as a film in negative print. In the dream he reaches his home village and finds it demolished entirely except for one house, which miraculously is his home. He finds it locked, and climbs all over it seeking to get in.

My idea was to have two percussionists cross the stage to the piano just as the soldier goes to sleep. They would then play on the inside of the piano. For this spot I composed *Knocking Piece*. The idea of a negative transformation pervaded the conception, suggested by the Faust theme, the film in negative, the bitter homecoming. The image of the most elaborate of instruments, and in this context the most perfectly in tune, seemingly violated by two percussionists with sticks and mallets, concentratedly focussing like surgeons, bore out this theme of destruction.

I was interested, moreover, in exploring a transfer of the ratios of the pitches in a just-tuned composition to ratios of superimposed metrical patterns in a percussion piece.

I had recently composed a setting of Shakespeare's *A Sea Dirge* from *The Tempest* in which I used just intonation to control microtonal transpositions of a twelve-tone set which was accompanied by a series of freely varied twelve-tone sets. The principal set, a Webern-like segmented row composed of four trichords with identical pitch construction was subjected to only two types of permutation: rearrangement of the order of the three pitches in each trichord, and rearrangement of the order of the four trichords. Since the principal set's trichords utilized three consecutive half-steps, a chromatic texture was insured throughout. Because the intervals made by the combination of this set with its accompanying free sets were restricted to perfect octaves, unisons, fifths and fourths, and just-tuned major and minor thirds and sixths, a relatively conservative level of dissonance was also insured. Microtonal inflection was limited solely to the transposition levels used from one statement of the principal set to the next (see Fig. 1).

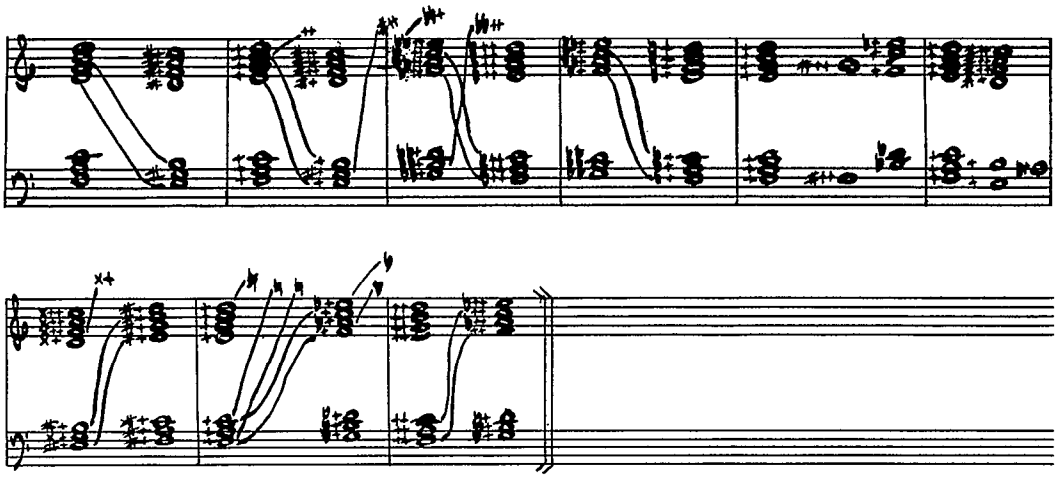


Figure 2.

The pitch levels of the principal set sequence are determined by an interrelated pair of seven-tone diatonic sets, the pitch of which is determined by an interlocking superposition of just-tuned major and minor triads. A few notes have been displaced by a syntonic comma, due to their harmonic context, and in two successive cases flat and sharp enharmonic non-equivalents have been mixed (see Fig. 2).

The conversion to metrical ratios was made using figure 1. Perfect unisons were interpreted as 1:1; perfect octaves as 2:1; perfect fifths as 3:2; perfect fourths as 4:3; major thirds became 5:4; minor thirds 6:5; major sixths 5:3; minor sixths 8:5. There is a metrical modulation in every bar. While one player maintains a constant note-speed, the other fits different superimposed patterns onto this referential base.

The instructions on the score read: "For two percussionists to play on the inside of a grand piano . . ." The sustaining pedal can and should be used, ad lib. Pitch should be used only as color, if at all. Typical piano sounds should be avoided. The same sound should be used for successive notes which have the same speed, but contrasting sounds (to varying degrees) should enter with each change of note speed. The equal marks across bar lines mean that the same note speed should be maintained in spite of a change in notation. In general, specific kinds of sounds should predominate within a given phrase. All sounds should relate to knocking. A general dynamic level is given for each phrase (within boxes, at phrase beginnings). Changes of dynamic level are also indicated. The tempo of the opening is at performers discretion; it is strict thereafter. Not all the notes must be played. Rests are permitted if rhythmic patterns are clear.

"If the unity and simplicity of the knocking sounds are overemphasized, the realization will be monotonous. If the rationally controlled shifting tempos are not mastered, the realization will deteriorate into feigned vandalism. If the marathon ensemble cooperation and concentration required fail, the performance will be impossible to execute. A spirit of competiveness between the performers will destroy the piece. The players must be friends; in quick alternation each must support the other."

In the course of discussing music for *In Three Zones*, Leach decided my ideas were too elaborate for his conception, and *Knocking Piece* remains the only part of that music ever to be written. It has been widely performed, sometimes with a rather theatrical approach, at other times in a "pure music" form. Theatrical versions usually explain the concept of a "ritual attack upon a symbol of tradition," as I described it for Source Magazine, where the piece was first published. The most thoroughly theatrical version was Jocy de Oliveira's. Performing with Rich O'Donnell, she used medical gowns and a film made to reproduce analagous rhythmic patterns with a strobe-like use of light. In Rio de Janeiro this version produced audience riots when it was repeated.

It was easy, in the late 1960's, to make a

startling impact on an audience with a cleverly made theatrical piece. The first impact of *Knocking Piece*, beyond its quite different favorable reception in Champaign-Urbana, Illinois, was as a particularly acerbic example of this genre. When the University of Illinois Contemporary Chamber Players took the piece to Darmstadt, Warsaw, Paris and London, in 1966, I decided to emphasize this aspect of the work. I felt it would not hold its own on the concert with strong examples of the genre by Hiller and Martirano unless it made a bid in the same direction. It held its own, but the result with all critics, was condemnation (and occasionally praise) of its theatrical raising of the specter of vandalism. As a last effort, in London when a critic who identified himself ahead of time as "hostile" asked into the background of the piece I gave him a succinct summary of its genesis. The result was a scathing review which condemned the piece not only as a piece of musical guerilla theater but also as one whose composer had not assumed even elementary responsibility for making it a composition.

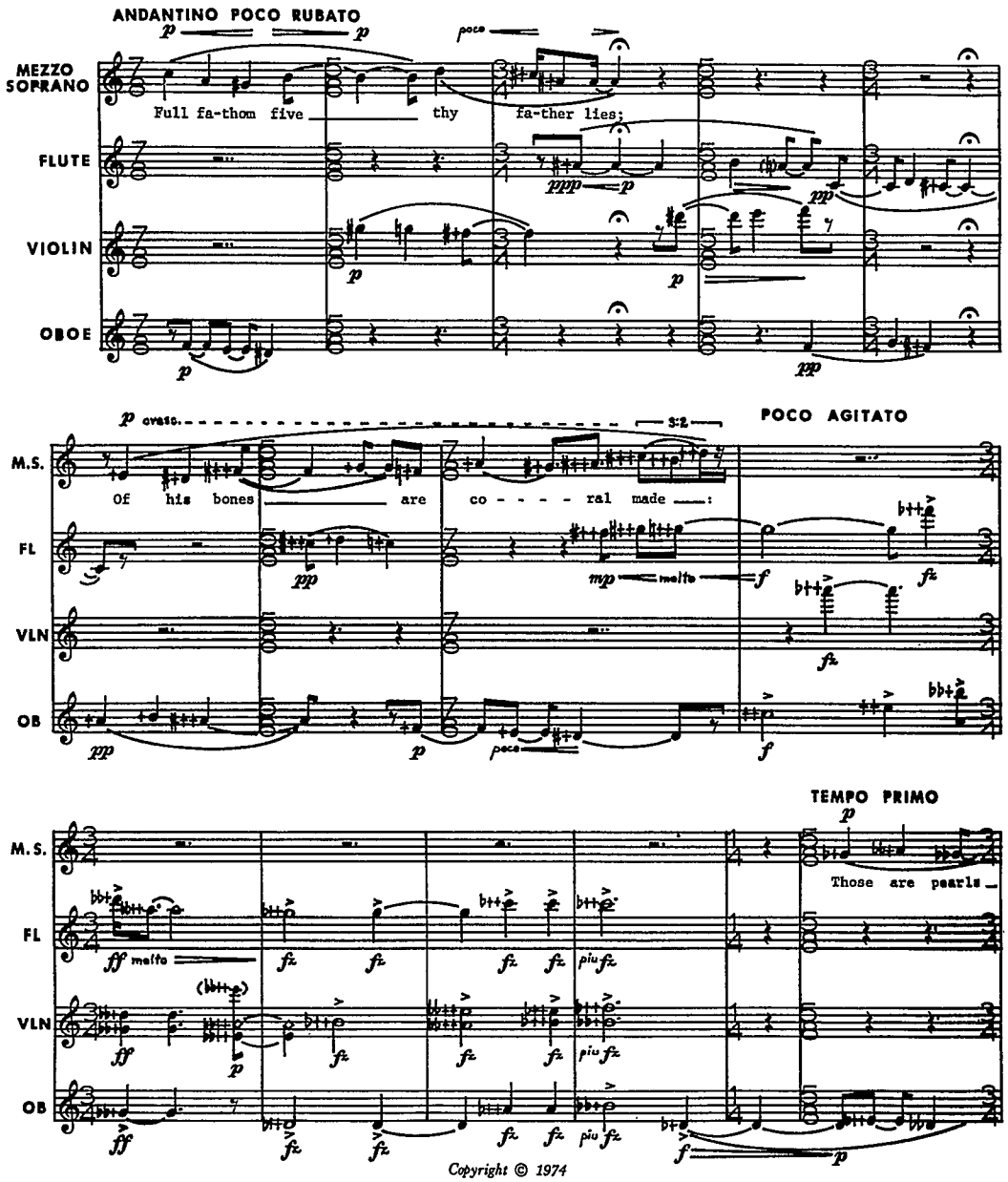
Thereafter, while others continued on occasion to present the piece theatrically, whenever I had any control over performance circumstances I insisted upon a rather austerely formal presentation. It affords an instructive example of the importance—and the difficulty—of presenting the symbolic content of an art work as clearly as possible, avoiding extraneous and irrelevant context, and arranging to project effectively its truly pertinent content. I do not believe verbal program notes are a help. Rather, they divert attention from the music itself which ought to be the most powerful vehicle of meaning.

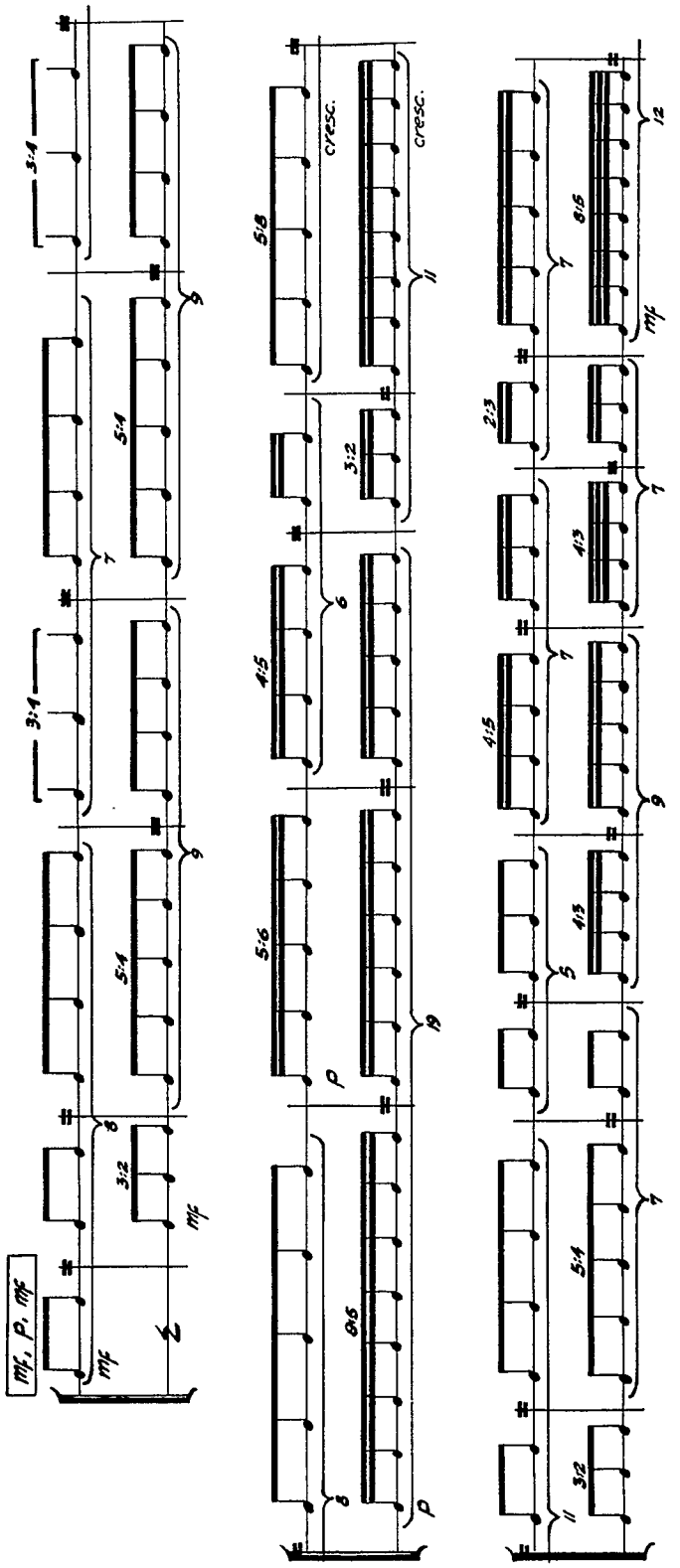
Roger Reynolds in his book *Mind Models* suggests that the most significant interest *Knocking Piece* has is as an example of pushing a kind of formal perception to a threshold. The effort the mind makes to orient itself to the shifting tempi is not quite successful, since the constant metrical modulation almost defeats it, but it is not so unsuccessful as to precipitate a mental rejection. It is this, Reynolds indicates, which gives the work its peculiarly abstract sense of drama. It is also this which counterindicates a too theatrical presentation.

As a basic etude for percussionists, a study in superimposed meter and metrical modulation, it has a firm place in repertory. As an example of proportional organization it has a staying power which thoroughly vindicates for me the original experiment: to transfer a proportional scheme that works for pitches to the domain of rhythmic organization. It can validly be regarded as a minimalist work, since its construction is stripped almost bare of extraneous elements which would distract attention from its structure. It remains the most thoroughgoing use I have yet made of proportional rhythmic structure.

A SEA DIRGE

TEXT BY SHAKESPEARE for Jantina BEN JOHNSTON





"Knocking piece," piano interior (two players).

Performing Ben Johnston's "Knocking Piece," Then and Now

Thomas Siwe is Director of Percussion Studies, Chairman, Percussion Division and Professor of Music at the University of Illinois in Urbana-Champaign. He has performed widely as a soloist, recorded both solo and ensemble music and has played with such diverse groups as the Chicago Symphony, Boston Pops and the University of Chicago Contemporary Chamber Players. A former member of the Chicago Lyric Opera Orchestra, the U.S. Marine Band, Camp Pendleton, his background also includes television and radio studio experience in both Chicago and Los Angeles.

At Illinois Professor Siwe teaches Percussion Literature and private lessons, plus directs the University of Illinois Percussion Ensemble, Marimba Orchestra and Steel Drum Band. He is currently the Percussive Arts Society First Vice-President and Treasurer.

The first performance of Ben Johnston's *Knocking Piece* took place on December 14, 1963, in Urbana, Illinois at the Round House Concert No. 1. The performers were University of Illinois percussion instructor Jack McKenzie (currently Dean of Fine and Applied Arts) and myself. I was a graduate assistant at that time working toward a Master of Music degree. The concert was sponsored by a group of local composers looking to showcase their works in an environment conducive to viewing and hearing intimate contemporary chamber music. The University of Illinois music department's growth in the late 1950's had exceeded its capacity to accommodate the demands of various school ensembles and recitalists. Prior to the completion of a proposed performing arts complex new events had to look elsewhere for hall space that provided adequate rehearsal time. A spacious contemporary home located in Urbana and rented by one of the staff composers could seat 100 to 150 people in a large, round, sunken living room that housed a small stage with an old "baby" grant piano at its center. The event was planned as a social occasion, as well as a concert, with refreshments served at the conclusion of the program. The evening was a success, the audience was very receptive to *Knocking Piece* as well as other works programmed that evening and future Round House concerts were planned. The series continued for a number of years featuring excellent performances of new music, including many local and world premiers.

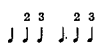
Preparing a new work for its premier performance is always a difficult task. I find it much easier to improve on a previous performance whether it be my own or someone else's. *Knocking Piece* with unique notation, many different superimposed rhythmic patterns and its constant metric modulation presented my teacher Jack McKenzie, and myself, with a formidable task. We were not really prepared for this, then new, concept. The polyrhythmic music of Charles Ives had not yet gained entry into the standard orchestral repertoire, the percussion method books and excerpt studies, as it has today. Only the *Two Pieces for Kettle Drums*, Recitative and Improvisation by Elliot Carter were published (AMP, 1950) and available. Knowing them had at least given us some experience with metric modulation. Solving the difficulties of polyrhythms found in the extant percussion ensemble literature such as Harrison's *Fugue* (1942), an early work that also transcribed pitch rations into their metric equivalents, were child's play when facing the brave new world presented by Ben Johnston.

Since I was renting a room in the basement of the McKenzie house, it was decided that we would practice at home. With mallets, on padded chairs, we began to first learn the six basic polyrhythms, plus their inversions, found in the work; i.e., 3:2, 5:4, 3:4, 5:6, 5:8 and 5:3. The ratio 12:5 occurs only once so we left it until last. To begin we graphically charted the polyrhythms and learned to play each one by ourselves at a very slow tempo. Later, with the help of a newly acquired *Trinome*, a polyrhythm and metronome device, we would spend hours passing the rhythmic patterns back and forth while listening to and following the Trinome's different timbred 'clicks.'

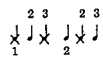
Frustration eventually turned to enjoyment. I think we both realized that having a command of these basic patterns, we would now be able not only to perform *Knocking Piece*, but any similar passage found in contemporary music. Unfortunately, the constraints of time made it necessary for us to make a short 'cut' for the first performance. But, later the following spring (Feb. 1964), we performed it again as part of my graduate recital and subsequently thereafter on tour.

After dozens of performances and after teaching *Knocking Piece* to many students these past 20 years, I have found a methodology that seems to work. Learning the basic patterns visually and aurally, and being able to perform them by yourself, right hand vs. left hand, at various tempi is step number one. To graph the polyrhythm simply take the basic pulse (in *Knocking Piece* this is the part that has the equal signs across the bar line) and subdivide it into the other given number. Then keeping the basic pulse just play on every subdivision according to the first number. For example 3:2 would look like this: basic pulse is two —

subdivide each beat into three —

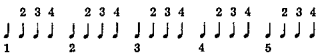


play every two subdivisions —

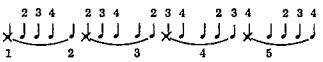


or 4:5 where the basic pulse is five —

the subdivision is into units of four —



and one simply counts and plays every fifth subdivision (indicates by x's) —



This is a very accurate way to visualize and count polyrhythms. It is not only useful in learning Johnston's work, but notating two (or more) superimposed rhythms in a visual (proportional) notation can be extremely helpful when performing with a conductor, or for any lyric passage where the tempo is likely to fluctuate. You know for sure that, at least, you will play the beats correctly in relation to the basic pulse. You can always "smooth it out" later.

Of course *Knocking Piece* moves along too fast to count and one must learn the composite sound of the two rhythms being played together at faster speeds. To help you learn the sound of the resultant rhythmic unit, and yet keep the two lines separate as well, there are

on the market a number of electro-mechanical as well as electronic devices. All of them appear to do the job well. An individual can also repeatedly record the polyrhythms at a slow tempo using a variable speed tape recorder and then gradually increase the speed. An effective, though not recommended, method is to scratch the appropriate number of equidistant marks on an old record and play it back at various speeds. Whichever way you choose to aurally learn, using an electronic device or an ono-monopoetic phrase (3:4 = "pass the g___ d___ butter"), first visualizing and counting each polyrhythm will insure accurate memorization and help you later when you begin to rehearse *Knocking Piece* with your partner.

During the early ensemble rehearsals I recommend that both individuals play on drum pads, or something similar, and that each player remembers to alternate right and left hands for each measure. This latter process will give you flexibility, useful when you get into the piano interior and need to change mallets, turn pages, and play in different interior locations. Also, spend some time early on by yourself with the piano, selecting the sounds that you want to produce and the mallets, hammers, etc., needed to produce a wide variety of colors. Observe the dynamic markings when making your mallet selection. Plan to use heavy or hard beaters for louder sections, perhaps yarns for sections with rapid intensity shifts, and so forth. As the composer indicates stay off the piano strings as much as possible, avoiding the normal piano sound. To insure that you do not injure yourself I recommend that safety goggles be worn by both performers. During the work's second performance at my graduate recital a string broke sending an eyed end-piece into the balcony at a high rate of speed. Also, following that performance the school's piano technician turned in his resignation. After that episode we used an old piano that was used primarily for teaching piano repair. It is the performer's responsibility to insure that he or she does not damage the piano, or in fact, any instrument. Check with your piano technician before starting to rehearse.

The notation used for *Knocking Piece* is efficient and does not require a great amount of special study. Unfortunately, it does not give an accurate visual realization of the tempo changes caused by the metric modulation. The performers might like to add some special performance notes, e.g., slower, faster, as well as indications of when and how to use the sustaining pedal.

My final performance recommendation is that you not try and overwhelm the audience with sound volume but rather seek out the subtle dynamic and timbral changes. This duet can be played on other percussion instruments or a multiple instrument arrangement of non-pitched percussion. It can also be, and often is, performed as a solo.

Performing *Knocking Piece* in the early 1960's was always an adventure. The audience response included those who loved the work as well as a few who were truly upset with what seemed like an unnecessary attack on the most sacred symbol of the music establishment, the piano. Today's sophisticated music audiences accept the fact that music can be produced without relying upon a pitch organization for its structure. The vast percussion ensemble and solo literature continues to grow at an incredible rate. I believe that Ben Johnston's *Knocking Piece* will always be an important work in our literature, deserving of performance, now and in the future.

Three Dance Sketches

Karel Husa, Pulitzer Prize winner in Music is an internationally known composer and conductor and the Kappa Alpha Professor at the Cornell University. An American citizen since 1959, Husa was born in Prague, Czechoslovakia, on August 7th, 1921. After completing studies at the Prague Conservatory and later the Academy of Music, he went to Paris, France where he received diplomas from the Paris National Conservatory and the Ecole normale de musique. Among his teachers were Arthur Honegger, Nadia Boulanger, Jaroslav Rídký and conductor André Cluytens.

Three Dance Sketches for percussion were commissioned by the National Association of College Wind and Percussion Instructors (NACWAPI) for the Music Educators National Conference (MENC). The work was written during the second half of the year 1979 and first performed at the MENC 27th National Biennial Meeting in Miami Beach on April 12, 1980, by the University of Tennessee Percussion Ensemble (William Lutz, Keith Brown, Tim Huesgen and Monte Coulter) conducted by F. Michael Combs.

I have been concerned with writing for percussion for numerous years: the *Concerto for Percussion* features five soloists in front of a Wind Ensemble, *Music for Prague 1968* contains an *Interlude* exclusively written for five percussionists, *Mosaiques* for orchestra starts with the first mosaic for Percussion, Celeste, Piano and Harp. Other works use extensively the percussion instruments, such as the *Apotheosis of This Earth, Fantasies, Two Sonnets from Michelangelo, An American Te Deum* and others. I have always been intrigued by the immense possibilities of color, rhythm, melodic expression, as well as technical, virtuosic qualities of the percussive instruments, not only in large ensembles, but also in chamber groups and solo performances. The varieties of sounds on a Cymbal or Snare Drum are surprising, not to speak of Timpani, Marimba, Vibraphone and many others.

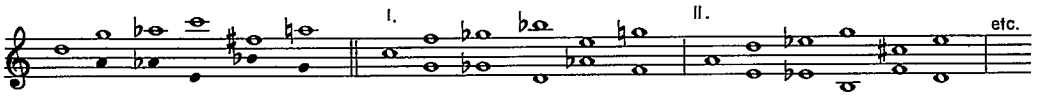
I have attempted to compose in the *Three Dance Sketches* a virtuoso piece for a quartet of

percussion players. At the same time I thought, they may be of interest to dancers and choreographers too. In some ways I thought of the old (perhaps even primitive) dances as practiced in the past here in the U.S. (mostly by the Indians), in Europe, in the Orient, Indonesia and Africa; perhaps the closest to my mind is the combination of a gamelan ensemble and Indonesian masked dances called *topeng*.

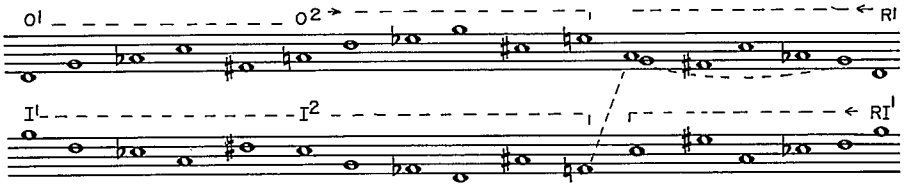
Although the titles of the three sketches are simple—*Love*, *Death* and *War*, the music and dance should not be considered as a light entertainment, but rather a sort of spiritual ceremony. All three sketches are meant to be dramatic, powerful, tragic evocations. The first, *Love*, would be close to tragic heroines such as Electra or those twentieth-century women portrayed by Garcia Lorca. The second, *Death*,

reminisces on the "last hour" followed by the old type of solemn procession behind the coffin to the cemetery. The third sketch, *War*, has no time limit—it could have happened a few thousand years ago, or it could be today's war, as man has not changed in this respect.

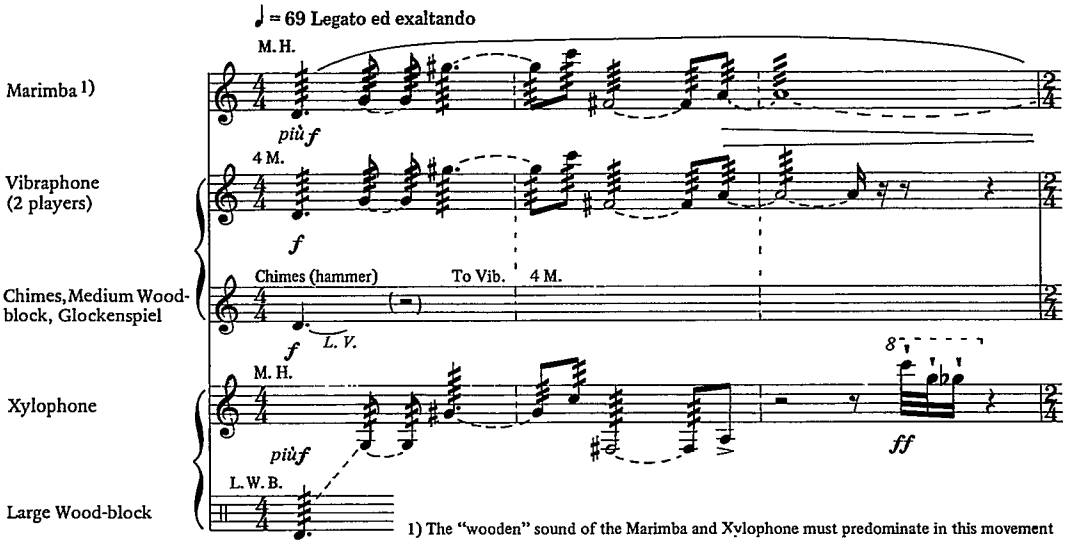
Love. The piece is divided into two sections, first a slow introduction and second (starting at letter *a* twice as fast. The melodic and harmonic construction is based mostly on the "mirror" principle. The basic series contains six pitches, *d, g, a-flat, c, f-sharp* and *a* (natural); the intervalic inversions are exact, and so are also the transpositions (I and II):



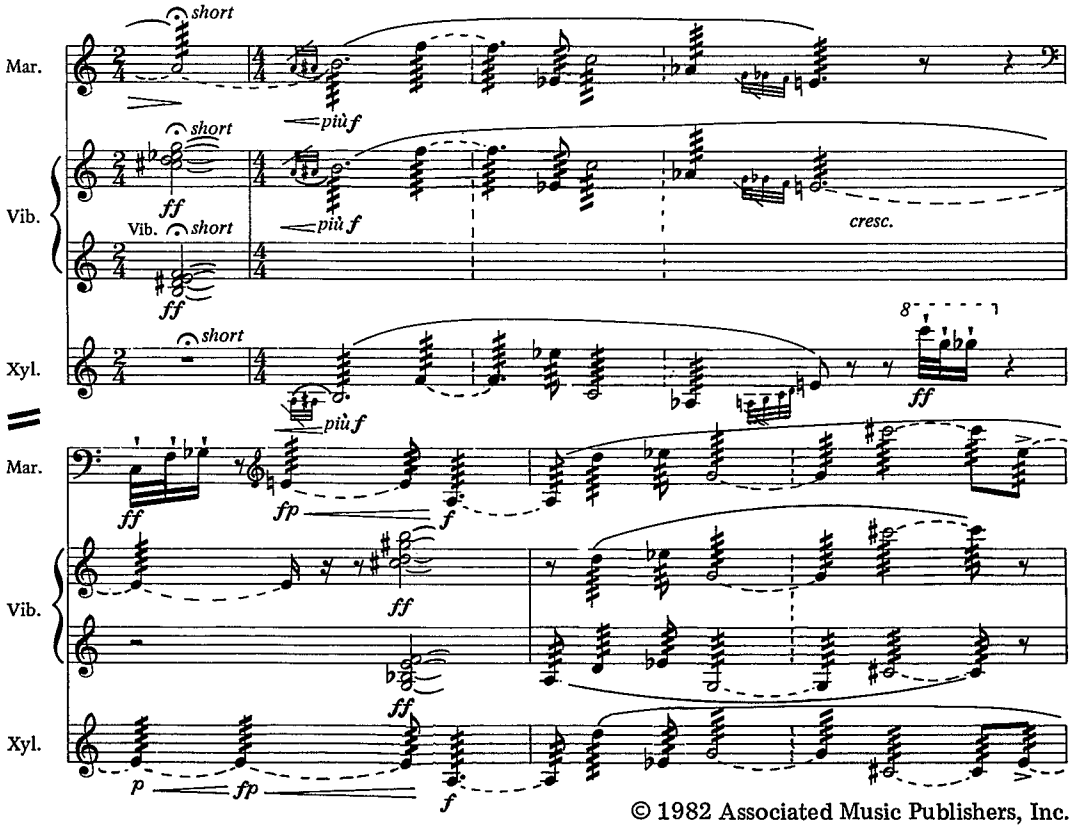
When mirrored exactly and with the accidentals the series, transpositions and retrograde form with its inversion will appear as follows:



The first phrase (measure 1-3) played in unison by the Marimba, Xylophone and Vibraphone will come from the original form (O^1):

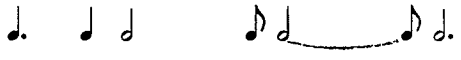


1) The "wooden" sound of the Marimba and Xylophone must predominate in this movement



Second phrase (measures 5-7) is constructed from I^1 form.
Third phrase (measures 9-11) is constructed from O^2 form.
Fourth phrase (measures 12-15) is constructed from I^2 form.
Fifth phrase (measures 16-18) is constructed from R^1 form.
Sixth phrase (measures 21-24) is constructed from RI^1 form.

The duration of the pitches of these phrases is based on the following organizations:
Measures 1-3:

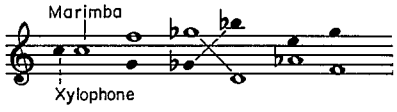


= 3-2-4-1-5 and 6 eighth-notes

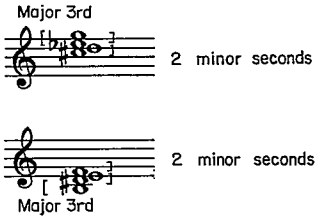
The duration patterns for the following sections will then read the following way:

measures 5-7: 6 5 1 4 2 3
measures 9-11: 3 4 2 1 6 5
measures 12-15: 1 5 6 3 2 4
measures 16-18: 6 1 5 3 (2 4)
measures 21-24: 2 3 4 5 1 6

The above phrases are interrupted by very fast motives in Xylophone and later Marimba, and by "mirrored" chord in Vibraphone. The Xylophone pitch organization comes from the transposition and inversion I (c, f, g-flat, b-flat, e, g / c, g, g-flat, d, a-flat, f) in the following manner:

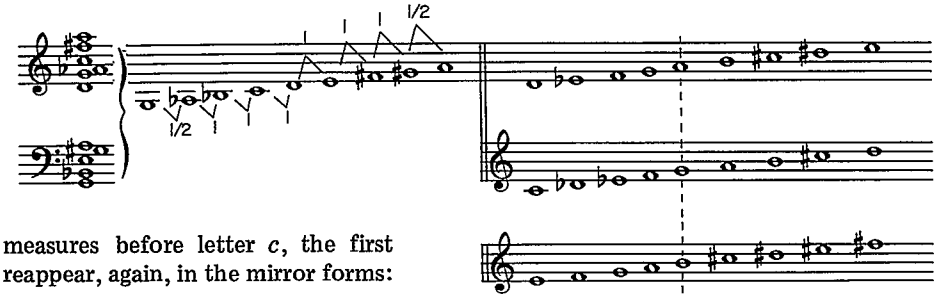


The chords in the Vibraphone are built from the same pitches: they mirror each other exactly:

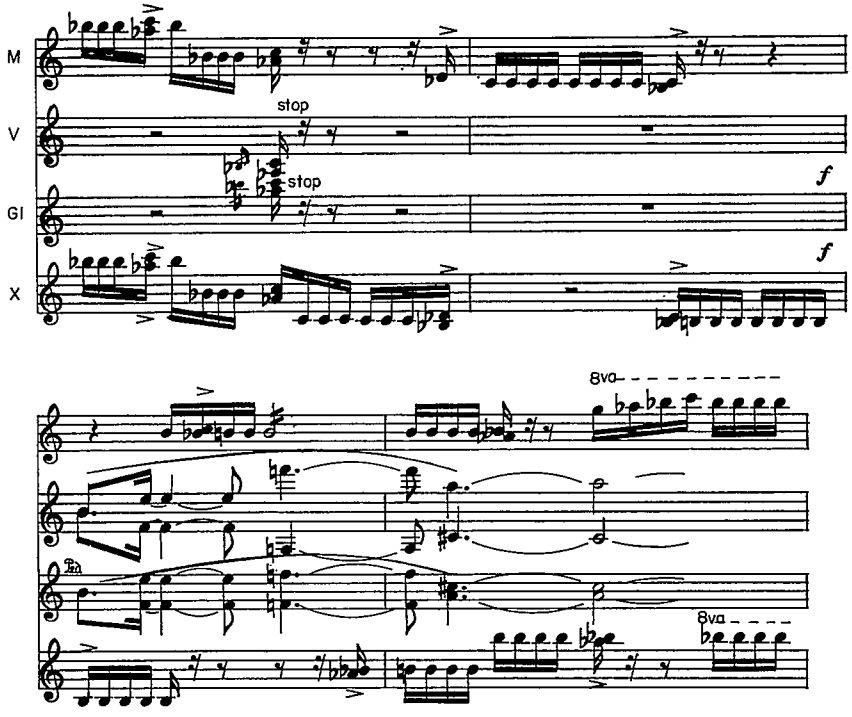


The same procedure is used in future chords, in measures 8, 12, 15, 19, etc.

The fast, second section, starting at letter *a* is constructed on a scale, resulting from the pitches of the original series and inversion (note, that the series is also symmetrical, horizontally):



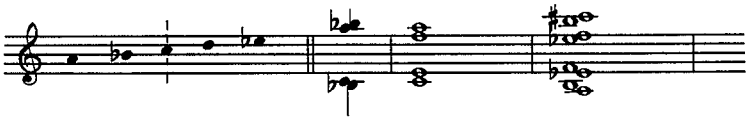
Later, 11 measures before letter *c*, the first theme will reappear, again, in the mirror forms:



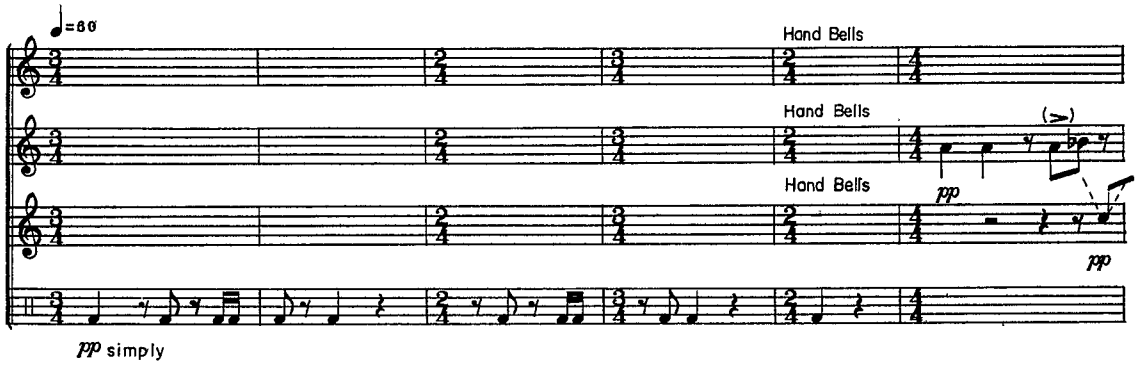
Love is written for keyboard percussion, i. e. Marimba, Vibraphone (at times two players), Xylophone and Glockenspiel, with occasional use of two Woodblocks and one opening note on the Chimes. The predominant color of this dance sketch is the "wooden" sound.

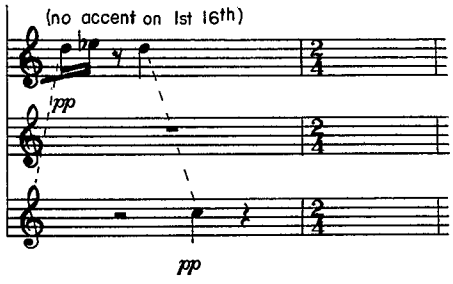
A short *Interlude* leads directly into the second sketch, *Death*. A hollow sound of a Tenor* Drum begins the funeral march, followed by a melodic line taken from an old Bohemian song, "The Last Hour is Ringing." Here too, the mirror symmetry is used extensively in the melody, in dyads and chords:

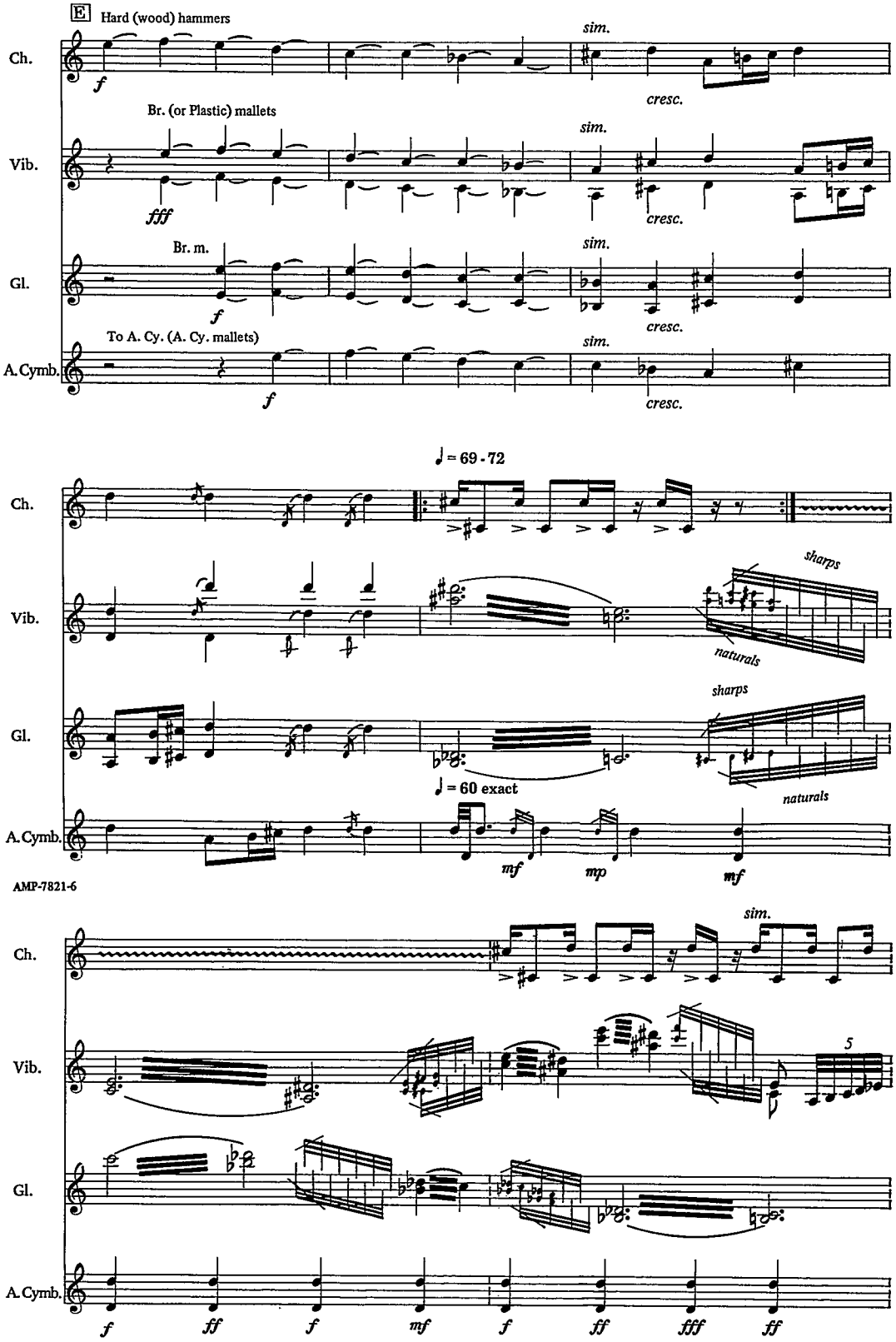
*Another type of drum may be used: Indian, Chinese, Tom-tom or other, which can give a simple, hollow sound.



The melodic line is divided among three players (see measures 6 and 7 and following, 13-14, etc.) which adds to the difficulty of execution. The players use Hand (Church) Bells: although it is possible to strike these with soft mallets, I prefer they be shaken, as it is usually done.

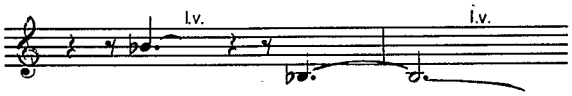






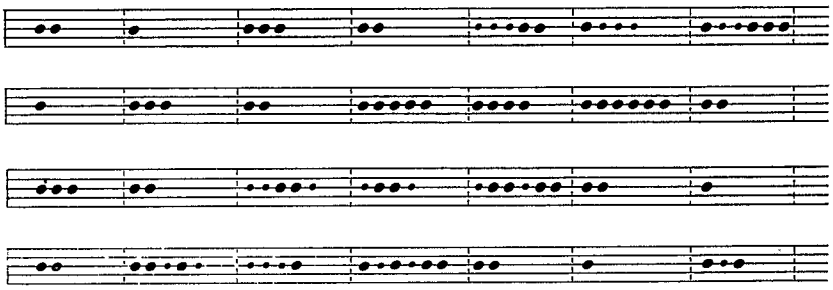
This movement consists of three sections; the middle one, begins with a climaxing crescendo, in which the melodic line appears as stretto, with Vibraphone, Glockenspiel, Antique Cymbals and Chimes, producing a brassy color (at letter *e*). The third section echoes the first.

Toward the end, the Vibraphonist is asked to bend two notes; as we do not have yet an established sign for this effect, I have used the following notation:

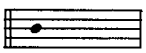
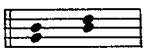
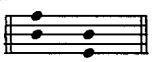


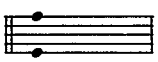
Instruments used in the *Interlude* and *Death* are Marimba, three Gongs, three suspended Cymbals, Chimes, Antique Cymbals, Glockenspiel, Vibraphone, Tenor Drum, Wind Chimes and Hand (Church) Bells *a, b-flat, c, d, and e-flat*—or, same pitches one octave lower.

War, the third dance is a perpetuum based on several progressions. First, each player with five drums, will use only one drum in the opening phrase, two, in the second phrase, three, in the next, etc. The entrances of the other three players will start after six measures, then five, four, three, until they reach a rhythmical unison. Two types of notes are used: without stems and with. Notes without stems will have certain freedom; they are rhythmically free within the measure (usually these measures are dotted). They are to be played as fast as possible, and, as indicated by position in the measure, either at the beginning, or middle, or toward the end of this measure. There are four series of patterns. The different sizes indicate the strength of the attacks (bigger notes will be stronger and louder):

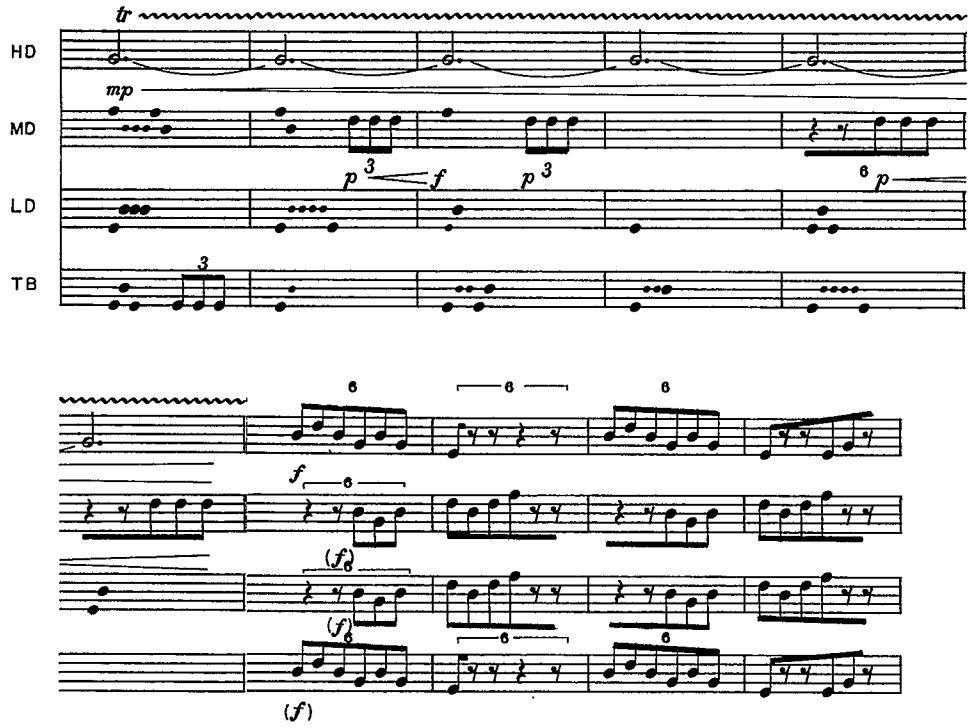


Organization of these patterns is as follows:

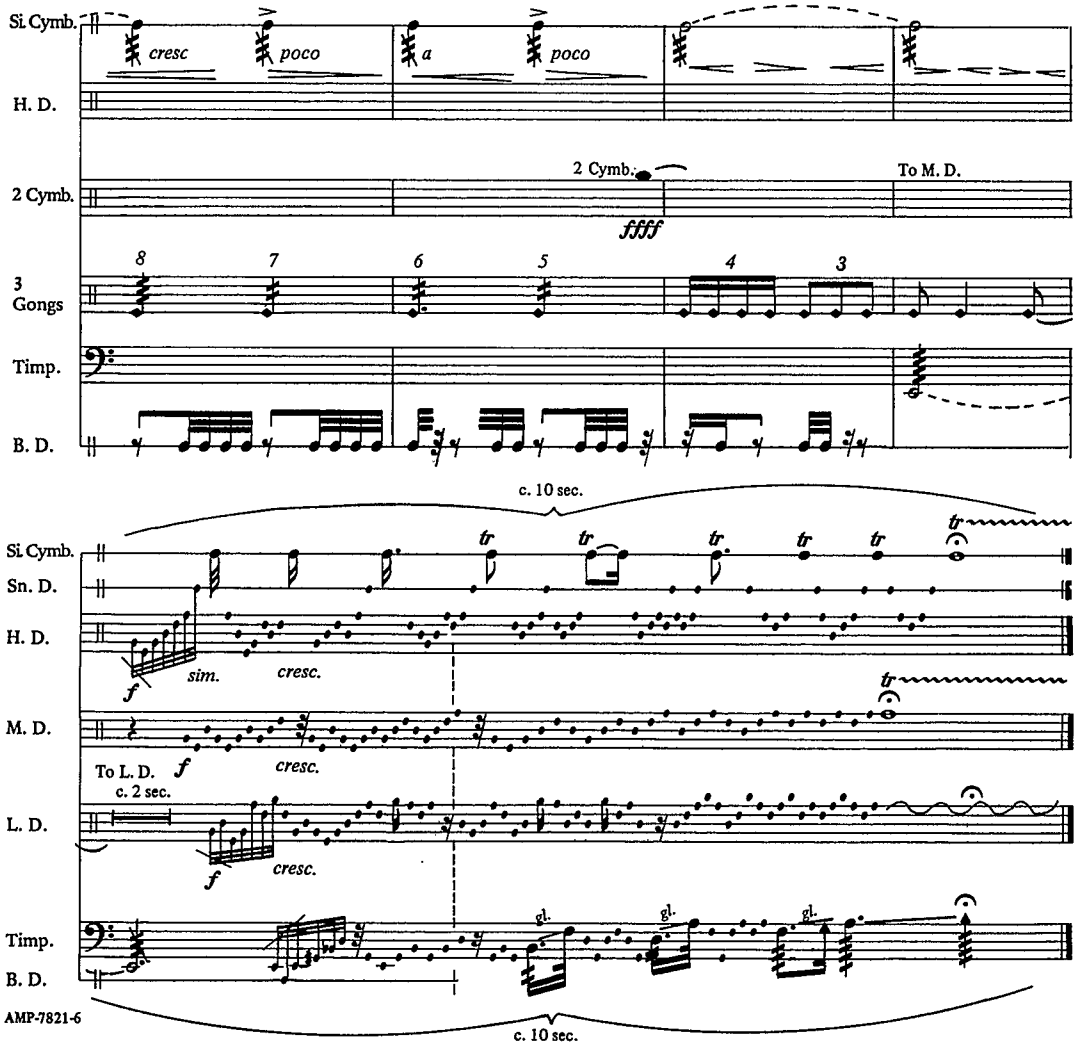
from begin. to letter *g*		meas. 14 after *g* to *h*		17 before *i* to *i*		13 before *k* to *k*	
Perc. II.	1st pattern	IV.	4th	III.	2nd	II.	3rd
Perc. IV.	3rd pattern	III.	1st	I.	4th	I.	2nd
Perc. III.	4th pattern	I.	2nd	II.	3rd	IV.	1st
Perc. I.	2nd pattern	II.	3rd	IV.	1st	III.	4th
Pitches used by all players		 or		 or		 or	

Finally, all players will use: 

The rhythms indicated with stems are to be played exactly. They also start with one or two notes, but later all five drums are used; the following example is approximately from the middle of the dance (letter *i*):

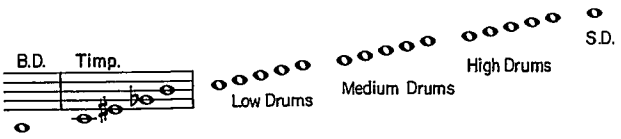


In the last measure practically all instruments are being struck by all four players in a similar way the jazz percussionist improvises on the trap set:

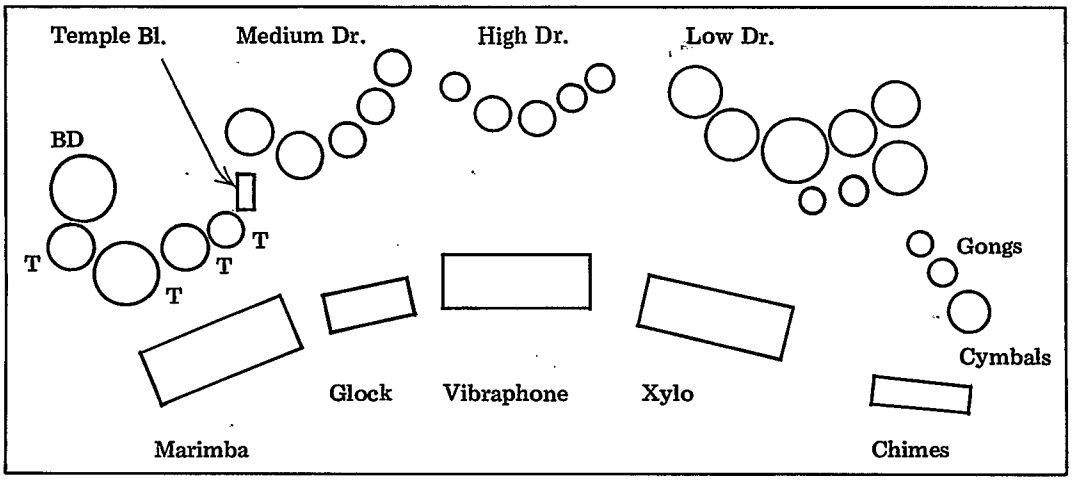


This movement has a distinctly "drumming" character, very different from the "wooden" first and "bell-like" second. The instruments used in this movement are: *Percussion I*: 5 high Drums, Sizzle Cymbal and Snare Drum; *Percussion II*: 5 medium Drums and 2 Cymbals; *Percussion III*: 5 low Drums, 3 susp. Cymbals, 3 Gongs; *Percussion IV*: Temple Blocks (5), Timpani and Bass Drum.

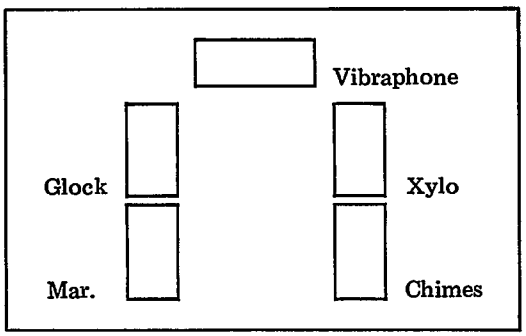
Drums, including the Timpani, should be tuned in progressive pitches:



Following is my suggested set-up of the instruments:



The above set-up seems practical when a conductor is used. In the case of four soloists without conductor the instruments should be placed in an area for visual cueing.



Mallets: Five degrees of hardness are indicated: S-soft/M-medium/MH-medium hard/H-hard/VH-very hard. In addition, W-wooden, F-felt and MF-medium-felt are suggested.

Sound and Idea in "Soundscape"

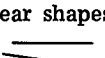
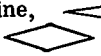
Dary John Mizelle born 6/14/40 in Stillwater, Oklahoma. Early musical education in midwest school bands, orchestras, and choruses. Extensive experience playing jazz trombone. Higher education in California University systems (B.A. Sacramento State University, M.A. University of California at Davis, Ph.D. University of California at San Diego). Compositional studies with Larry Austin, Richard Swift, Jerome Rosen, Karlheinz Stockhausen, Roger Reynolds, Robert Erickson, and Kenneth Gaburo. Electronic music studies with David Tudor and Pauline Oliveros. Performance experience with New Music Ensemble (Davis), Center for Music Experiment (San Diego), and Prima Materia (Rome). Lively interest in ethnic musics as well as early music. Prolific composer with works for all media, including: piano, various chamber ensembles, chamber orchestra, chorus, strings, full orchestra, percussion, electronic tape, computer, live-electronic, theatre, dance and mixed media. Recent activity includes producing music for solo contrabass, shakuhachi, and language pieces as well as conducting contemporary chamber music (Austin, Maschayecki, Mizelle, Schoenberg, Varese), orchestral music (Mizelle), and tape plus vocal and/or instrumental music (Gaburo, Olive). One of the original group producing SOURCE magazine.

I composed *Soundscape for Percussion Ensemble* during the summer of 1976 at the request of Michael Rosen, director of the Oberlin Percussion Group.[1] My intention was to create a piece which would incorporate a multidimensional approach to music, in which many different musical elements configured in various parameters would interact in complex ways. I was also interested in integrating several different approaches to rhythm in one composition and working with a very large soundworld, as well as taking advantage of the skills of an expert performance ensemble with virtually unlimited rehearsal time.

The compositional theory I had been evolving was an outgrowth of my reflections about the nature of musical form and the different ways in which musical elements could either exist in aimless configurations or cohere into structures with recognizable shape. My inkling was that the idea of basic shape or pattern (grundgestalt) could be applied to any musical parameter in an open-ended system which would not preclude the use of *any* materials. I had long been fascinated with Cage's ideas about freeing sound from structural tyranny by randomizing various parametric controls, and had for some time been composing pieces which were involved with the strategy of crossing and recrossing the threshold between music which was organized sonically and music which was organized structurally.

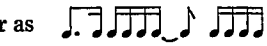
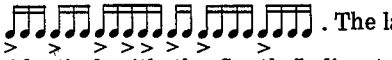
I had also been studying various musical traditions and had become interested in ideas

from nonwestern cultures, not so much from a fascination with "exotic" sounds or methods, but out of a search for universals—which might be true of all musics: past, present, future, from other planets, etc. My aim was to postulate a system which would be universal rather than exclusive and provide the possibility of relating and interacting all kinds of materials invented from an awareness of any area of musical language.

The Chinese idea[2] that the timbre of musical instruments should be associated with the materials out of which they are constructed, and the South Indian idea[3] about simple musical shapes called *yati* entered directly into the composition of *Soundscape.* The *yati* represent five linear shapes and one nonlinear one; they are:  = straight line,  = river,  = cow's tail,  = mrdangam,  = hourglass, and the irregular shapes, which may be considered as composed of segments of the other five, or an infinite number of unique forms. My compositional studies with R. Erickson, K. Gaburo, and K. Stockhausen also influenced my ideas about sound and idea which underlie the composition of *Soundscape.* Certain ideas about the perception of configuration and pattern in language, developed by B. L. Wharf, also had a great influence on my compositional thinking. I found very compelling the idea that microforms (which may even escape conscious attention because of the speed of their variation) could generate gestalts which are perceived as wholes rather than as sums of microelements; and that these gestalts would in turn generate new forms at higher levels of perception through cross patterning . . . and that this process could continue in an unbroken chain up to the higher mental functions of cognition and intuition.[4] In addition to this hierarchical approach to musical perception, I had become interested in a statistical approach to sonic organization—a technique establishing varying degrees of order or disorder, "outside time" characteristics, and global movements of sound masses. I was indebted to Xenakis' writings for these conceptions.[5]

A serious consideration of these ideas and other, related ones led me to the conclusion that musical content (sound) and musical idea (structure) were not two separate things, but in fact, one thing, which operates at all levels of awareness. And furthermore, that universal principles of organization could be discovered which would be valuable in planning all areas of compositional strategy. I undertook the composition of *Soundscape* against the backdrop of these considerations.

Soundscape is conceived in six movements. The first five are scored for sounds associated with just one substance. They are: metal, skin, wood, earth, glass. Each movement employs a different approach to rhythm and a different macrostructure, based on the *yati.* The sixth movement integrates the sounds and ideas of the other five.

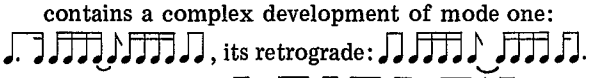
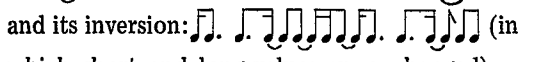
Movement one, *Metal,* used a modal (cyclic) approach to rhythm and explores two different-lengthed rhythmic cycles: 18 beat units organized as 3,1,1,1,1,3,1,1,1,1,2,2 which are set in 4½/4 meter as  ; and 21 beat units organized as 3,3,5,2,4,4 which are set in 21/16 meter as  or  . The latter cycle is identical with the South Indian tala *Kaippidi.*

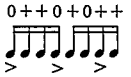
The pitch materials are derived from the set: c,b,f#,g,e^b,e,b^b,a^b,a,d,c#,f and its permutations. Since the pitch parameter is less important in *Soundscape* than in many of my other compositions, this set is not treated exhaustively and does not appear in many transpositions; it is simply present to provide an unifying principle for the pitched timbres when they appear in pitched instruments which are divided into semitones.

Movement one is a realization of the  (river) form which is applied to the parameters of timbre, loudness, and *temporal texture.*[6] The changes in these parameters do not occur in a gradual strictly linear time functions fashion but change in a more general, statistical way—since *Soundscape* represents one example of the integration of deterministic and statistical methods. This procedure gives rise to the paradox of unpredictability within predictability. In other words, while the outcome (or temporal

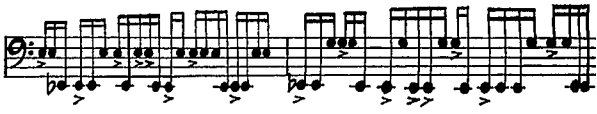
goal) of a particular musical form may be known in advance, attention may be focused in any one of several different directions at any moment within the macrostructure. In this way surprises will occur on a moment to moment basis even though the outcome of the movement is known. For example, the loudness parameter changes from pppp to ffff over the course of the movement; however, this motion is not accomplished in one long crescendo in which the music at any moment is louder than at every previous moment, but rather by a series of crescendi at the "period" level. Thus, there is a general crescendo from the beginning to letter B (ppp-f), another from letter B to letter C (mp-f), etc. A similar motion was composed for the timbral parameter through the choice of instruments and excitation devices, with pitchlike tone colors predominating at the beginning and more complex, noiselike sounds predominating at the end of the movement.

Contrast this unpredictability within predictability with a compositional strategy in which there is an equal probability of any dynamic level, timbre, or temporal texture occurring at any moment. The result of the latter strategy is a music in which the microstructure is highly unpredictable, but the middle level structures and higher level structures become essentially static, one dimensional and without any interaction between levels. This is a similar phenomenon to the "glass of water" example of G. Gamow, in which all the water molecules inside the glass are moving in random directions, but the behavior of the body of water is perfectly predictable because of the law of entropy.[7]

The movement falls into two main sections with respect to the rhythmic cycles. The first cycle is used from the beginning up to letter D (meas. 40), and the second is used from letter D through the end (meas. 68), while an integration of the two modes appears in measures 49–54 and measures 63–68. The first section contains a complex development of mode one:  , its retrograde: . and its inversion:  (in which short and long values are exchanged) as well as various augmentations and diminutions. See appendix. The second section contains a similar expansion of mode two and integration of the two modes.

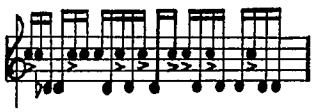
There is a good deal of composed unity in the rhythmic domain because of the large number of different statements of the two modes in various augmentations and diminutions, and the relative lack of other rhythmic material. One exception is the tag motive: 

(appearing in measure twelve) which presents a musical "double image." The accent pattern is the familiar 3+3+2, while the timbre changes in the configuration 3+2+3, as the performer tilts the pan to allow the water inside to cover the bottom for a muted sound or uncover the bottom for an open sound. A similar double image occurs in the almglocken part in measure 67 and following. The configuration in Ex. 1 presents contrasting patterns of emphasis when

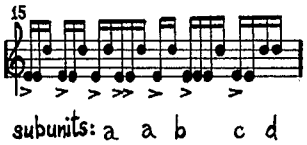


Example 1

analysed for patterns of accent and pitch. The melodic curve of the first measure is inverted in the second measure of this example. A more complex kind of double image is present in the attack and melodic curve configurations of the cowbell part in measure 66 (see Ex. 2). The melodic curve and accent configurations are retrogrades of the glockenspiel pattern at measure 65 at the subgroup level (see Ex. 3), and

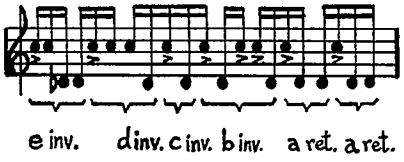


Example 2



Example 3

within the subgroups, there are the following permutations of the original: inversion,[8] inversion, inversion, inversion, retrograde and retrograde, respectively (see Ex. 4). Likewise, there are many different realizations and rerealizations of the same basic material. See appendix. A careful hierarchical analysis of this passage from the note level up to the macrostructural level will reward the musical scholar with some interesting discoveries.



Example 4

An integration of mode one into section two occurs in the rivit cymbal part at measure 49. It is stated seven times against six statements of mode two (7X18=126 and 6X21=126). Mode one is reintegrated at the end of the movement simultaneously in the tam tam part (in the same 7:6 statement as in measure 49) and also in a X7 augmentation in the tubular chime part. This latter statement nicely subdivides the 21-beat measure into three equal parts of seven beat units each for the beat unit of mode one (126/18=7). See appendix.

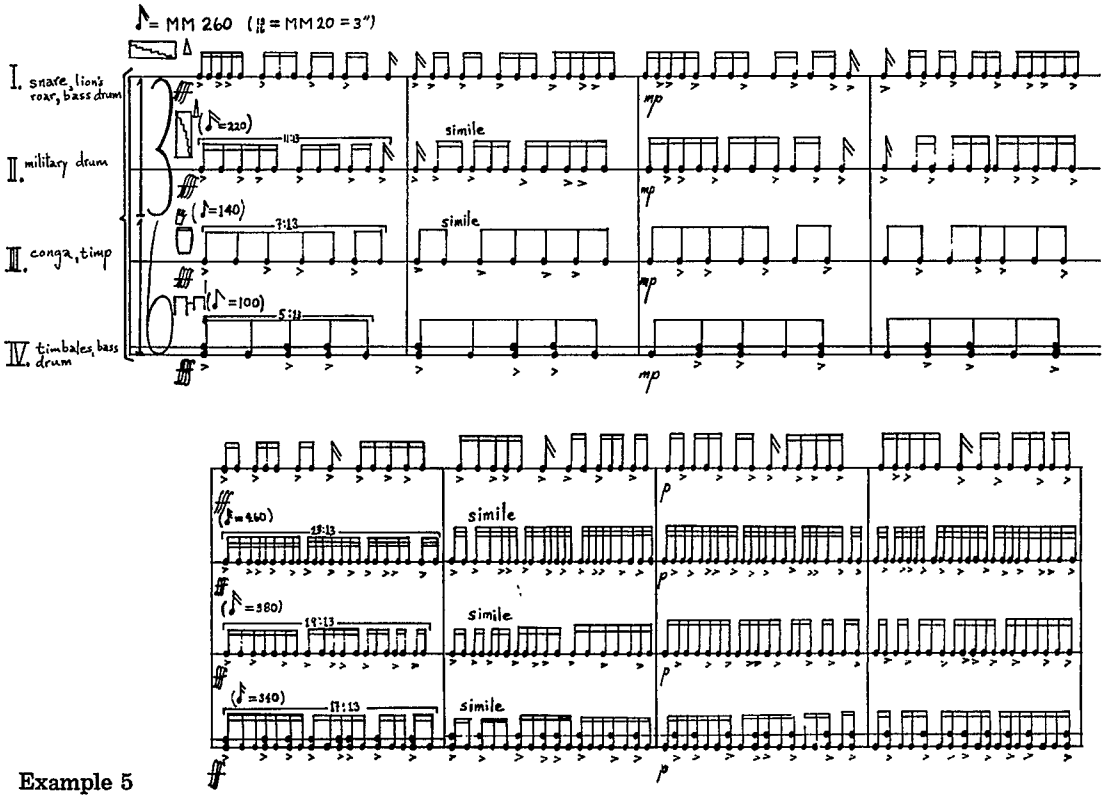
This last passage of movement one also contains the fastest statement of mode two (X.5 diminution) in the rivit cymbal part in meas. 63-64, clipping along at MM660 (11 beats per second). The slowest statement of mode two occurs in the Chinese opera cymbal part (meas. 66 to the end) in a X3 augmentation. This statement also nicely subdivides the 21-beat measure, this time into seven equal beat units. See appendix.

The glockenspiel wind chime is present as a background from meas. 65 to the end, and performs a slow crescendo which has the function of adding to the temporal texture and sonic texture. While all the metallic sound is ringing at the end of movement one, the skin movement begins *attacca.*

Movement two uses the opposite form:  (or cow's tail) and explores cross rhythm in a manner which integrates two different number series. The prime number series (in which every element can be divided evenly only by one and itself): 1,2,3,5,7,11,13,17,19,23, etc. and the Fibonacci series (in which each element after the second equals the sum of the two previous elements): 1,1,2,3,5,8,13,21,34,55, etc. were used to generate the form, the meter, and the rhythm. The prime number series is interesting for the generation of cross rhythms because when played simultaneously, they coincide only at the beginning and each rhythm retains its unique subdivision of time. The Fibonacci series is interesting for several reasons, one of which is that as the series is carried out, any two adjacent numbers will more and more closely approximate the golden section, or so-called "perfect proportion" of 1:1.61803. The second value of this proportion less the first value is equal to the reciprocal of the second value (1.61803—1=.61803=1/1.61803). This self-referential quality generates a beautiful logarithmic spiral found in many natural objects.[9] Some of the numbers which are common to both series (1,2,3,5,13,89,etc.) determine middle-level structures of this movement (see Ex. 5).

The 13/16 meter serves as the basis for the cross rhythms 13:11:7:5, all of which are played ffff on snare drum, military drum, conga, and timbales. In measure one the rhythms are divided into subgroupings of :13=5,3,2,2,1; 11=5,3,2,1; 7=5,2; 5=2,1,2 as are all the subgroupings of five, which is the same as the five subgrouping from cycle two of movement one. Measure two contains three retrograde microforms of measure one (snare, military drum, and conga) and one repeat configuration (timbales).

A macrostructural diminuendo is realized over the course of the movement by means of terraced dynamics in pairs. The first two pairs (measures 1 through 8) consist of ffff/mp and fff/p. (Throughout *Soundscape* I worked with a scale of ten dynamic levels—ffff through pppp.) The first two pairs could be notated as 10/5 and 9/4, which average out to 7.5 and 6.5 —a clear diminuendo of average values. Just as with the macrostructural crescendo of movement one, the motion is not a strictly linear



Example 5

function of time, but a statistical one.[10] Since all the forms in *Soundscape* are clearly and definitely composed, there is an integration of deterministic and statistical methods of composition—this is a different approach than those which were used in many of my other compositions.

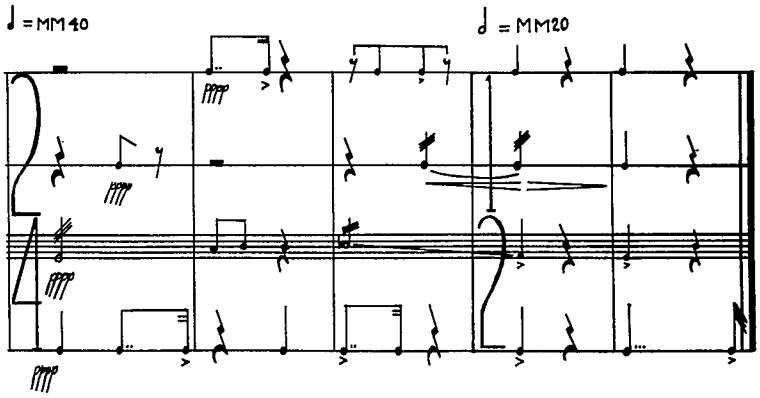
All the dynamics of movement two are terraced except for one ◇ at the end of the movement, which is a seed form for the macrostructure of movement three (wood). (See Ex. 6).

The composite timbre of movement two generates a macrostructural > from bright to dark timbres, also in a terraced manner. This is accomplished by removing snares, switching to darker sounding instruments, and using larger-headed and softer excitation devices as the movement progresses. The temporal texture gradually thins from over 60 events per measure (three seconds) to two events in the last measure. The sonic texture generally remains static at four throughout the movement, although there are some moments near the end of the movement where there are less than four (most notably the quasi-canonic passage beginning at measure 28). (See Ex. 7.)

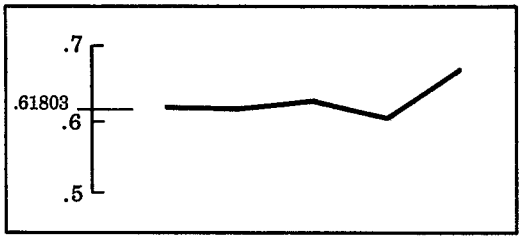
An examination of the macrostructural map of movement two will show the Fibonacci

Macrostructural map for movement two

Meter	Number of measures	Duration	Proportion of successive dur.
13/16	21	63″	.61904
8/8	13	39″	.61538
5/8	8	24″	.625
3/4	5	15″	.6
2/4	3	9″	.666
1/2	2	6″	



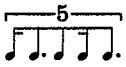
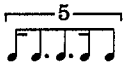
Example 6



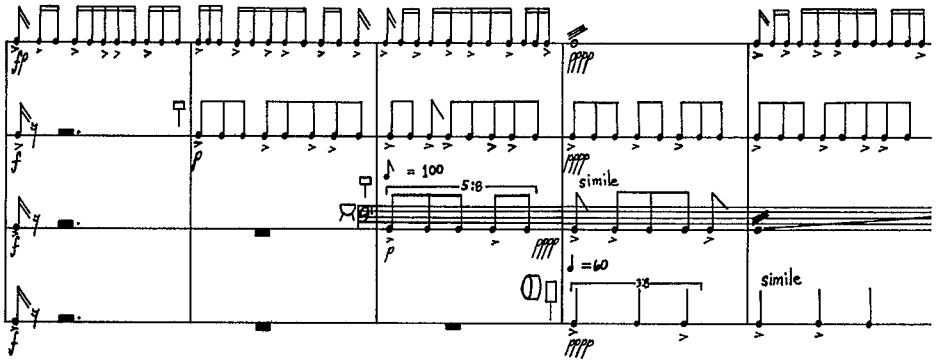
Example 8

series realized in the meters and number of measures, and a motion from a close approximation of the golden proportion to 2:3- by means of a zig zag time function (see Ex. 8).

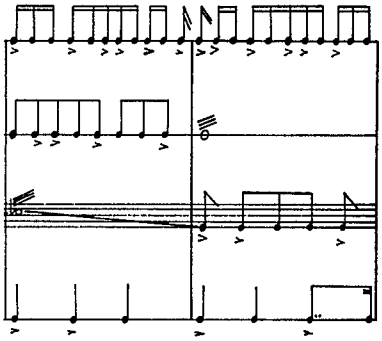
If movements one and two could be considered to be realizations of body rhythm, movement three could be considered indicative of speech rhythm. Or, using another analogy—metered poetry and free verse. There is no meter or rhythmic mode in movement three and time is measured only generally by the spatial indication of one musical system being equal to about 30 seconds. The rhythm of individual motives is to be interpreted intuitively in a gestural sense, with a general "time equals space" performance practice. Performers generally avoid periodicity in this type of music (as in spoken prose) except where the notation reflects an assumed periodicity indicated by the use of brackets over individual motives (see Ex. 9).

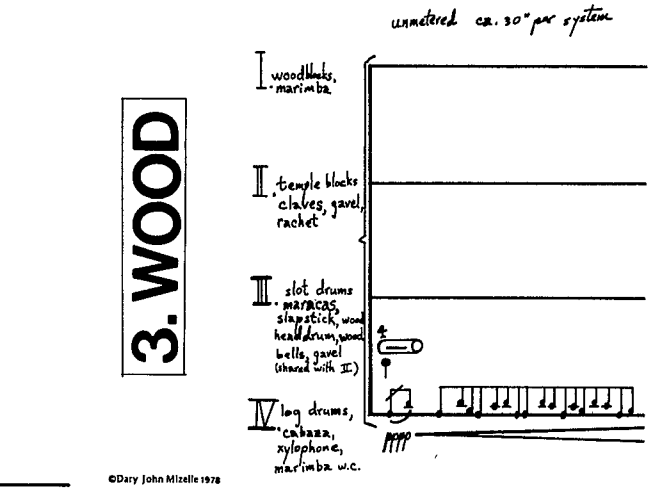
The presence of measured microrhythms such as:  and  within nonmetered music represents an integration of rhythmic procedures from other movements in an attempt to "fill in" some of the conceptual spaces between the different approaches to time measurement and rhythmic practice in *Soundscape*. Of course, irrational time values such as:  are the most characteristic rhythmic practice used in movement three.

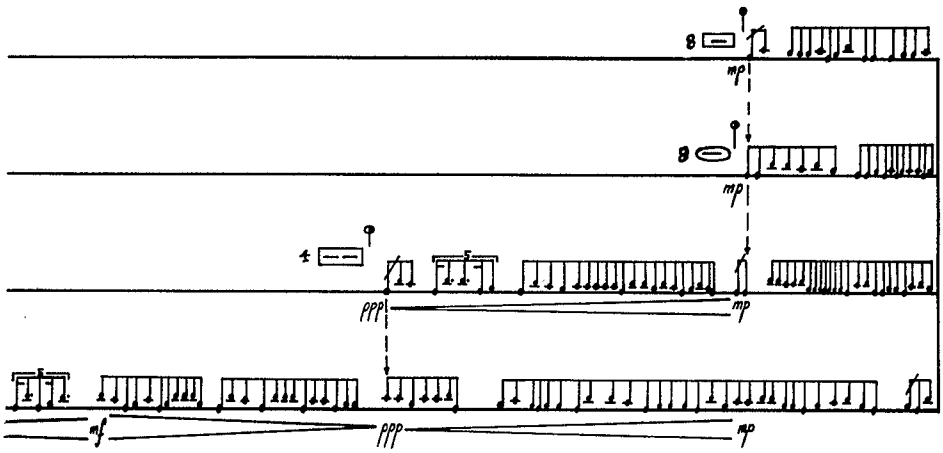
The parameters of temporal texture and loudness are the ones most directly affected by the macrostructural shape . The central



Example 7

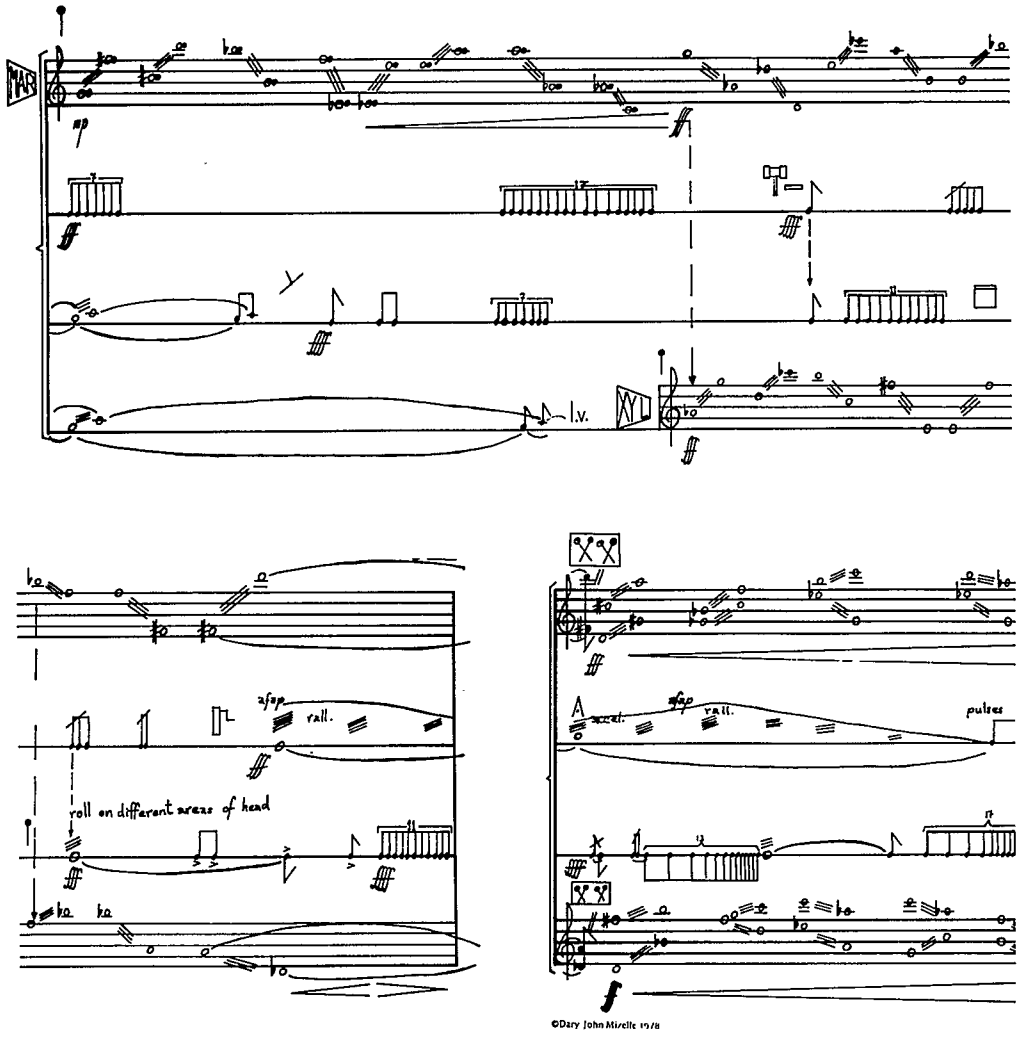






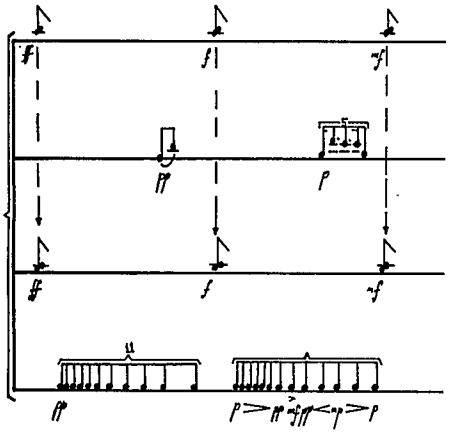
Example 9

Example 10


MAR
l.v.
roll on different areas of head
rall.
accel.
rall.
pulses
©Dary John Mizelle 1978
possible

passage of the movement contains a very large number of sound events which are realized by means of rolls and tremoli on marimba, rachet, guiro, slapstick, and gavel—all performed fff or ffff. This extremely thick temporal texture corresponds with the thickest sonic texture and timbral texture of the movement (see Ex. 10).

A further example of the analogy between speech and movement three occurs in the "dialog" passage which forms part of the final diminuendo. The log drum (line 1) and slot drum (line 3) have a dialog with temple blocks (line 2) and wooden headed drum (line 4). The one "voice" (lines 1 and 3) performs a terraced decrescendo of individual events while the other voice performs a statistical crescendo from pp to ff. The decrescendo voice has the "last word" (see Ex. 11).

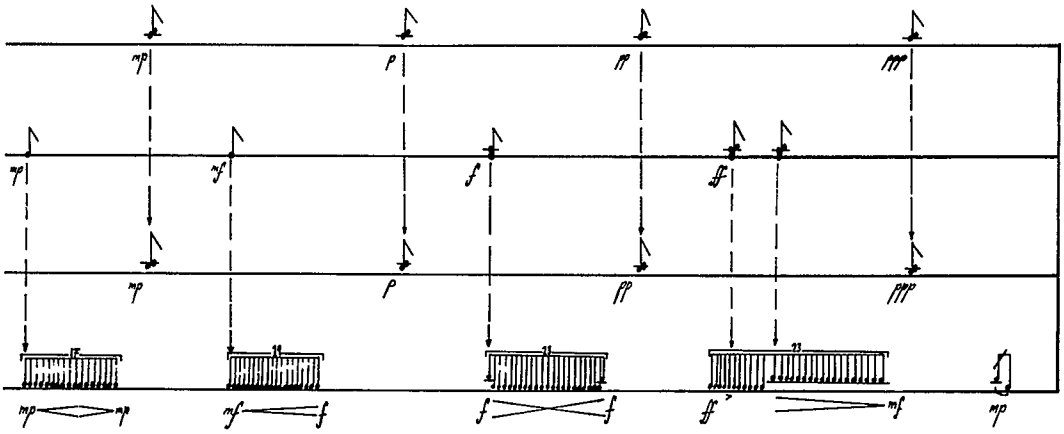


The dynamic structure for the six main microstructures of line 4 reflect in microcosm the main forms of all six movements in permuted order (——— , irregular, ◇ , ◁ , ✕ , and ▷ , respectively). Furthermore, the numbers of events in each microstructure reflect the prime number series in a rising periodic function, e.g., 11,13,17,19,29. Although this passage is statistically balanced between loud and soft, the overall shape will be heard as a decrescendo since it begins loud and ends soft with a decrescendo. This fits in with the macroform.

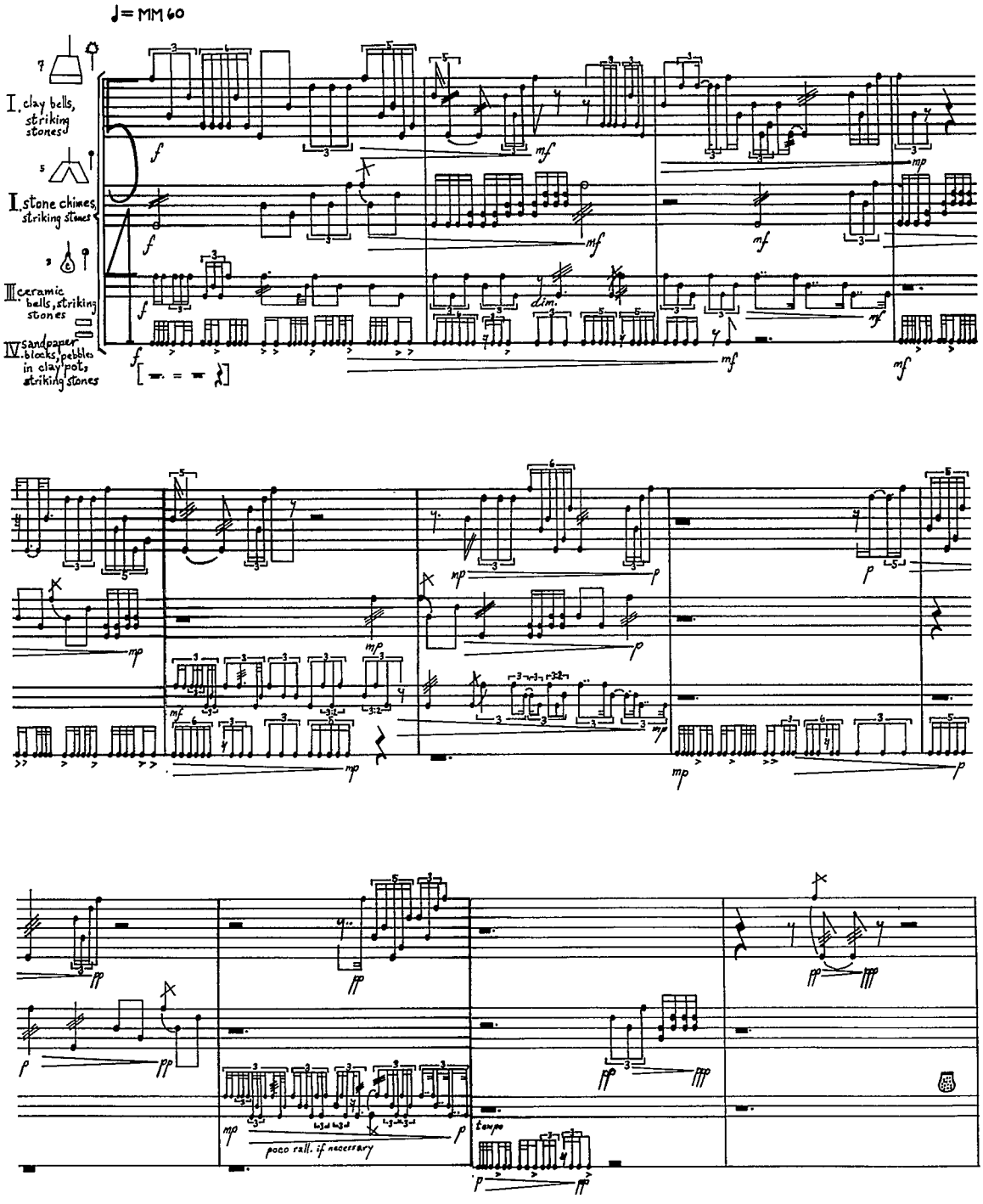
The looser approach to microtiming in movement three is also reflected in the expanded use of crescendo and diminuendo, which allow for many intermediate dynamic values, while changes in discrete values (terraced dynamics) would be more analogous to a more distinct approach to rhythm through the use of meters or modes. If there had been the possibility of wooden instruments with the capability of making glissandi, they would have probably been used in this movement—since this would also be an analogous method of working in the pitch domain.

Movement four (earth) is scored for the pitched sounds: clay bells, ceramic bells, stone chimes; and the noise sounds: striking stones, sandpaper blocks and pebbles in clay pot. The macroform ✕ (hourglass) is realized and

Example 11



Example 12


♩= MM 60
I. clay bells, striking stones
I. stone chimes, striking stones
III. ceramic bells, striking stones
IV. sandpaper blocks, pebble in clay pots, striking stones
poco rall. if necessary
tempo

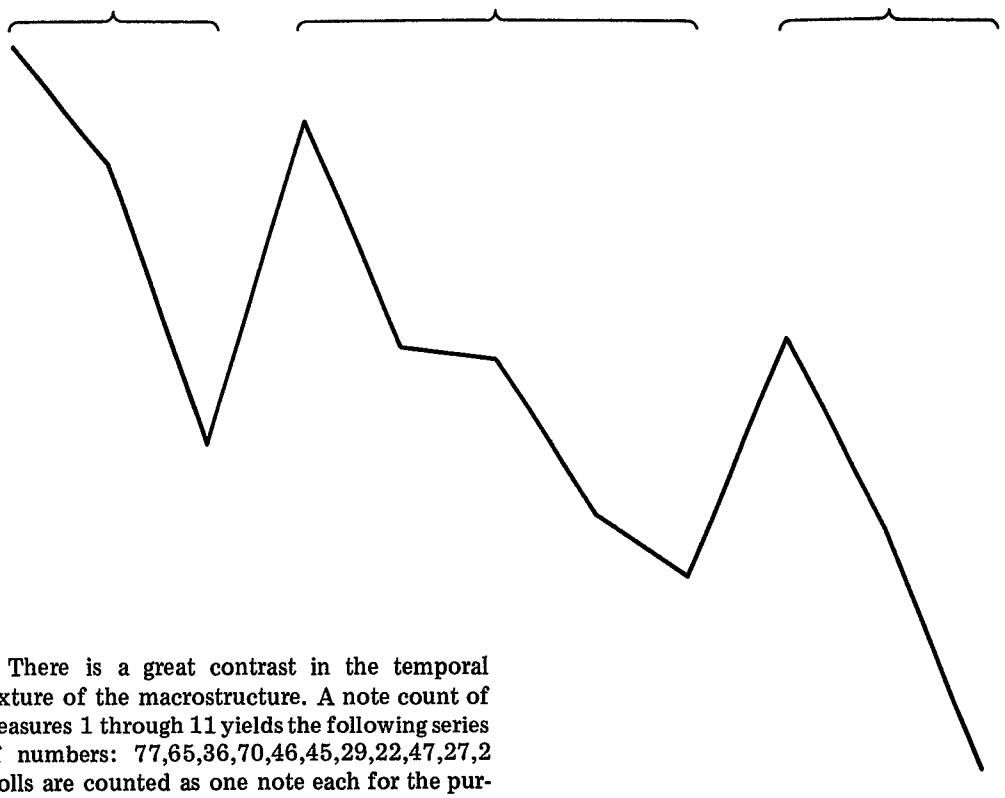
rhythmic cells are used in a structural manner. There are three main sections: the first which moves systematically from a thick temporal texture and loud dynamics to thin temporal texture and soft dynamics; the second which is a cyclic piece for striking stones and noise drone; and the third which is a retrograde form of the first.

The first section (measures 1 through 11) consists of four different-lengthed rhythmic cells which are all repeated in shortened forms as more material is subtracted or telescoped with each repetition, thus thinning the temporal texture. The lengths of the cells are:

Part	Number of beats per repetition of cell
one (clay bells)	8, 7, 8 (internal silence), 4.25, 3.75, 2.125
two (stone chimes)	10, 8, 6, 4, 2
three (ceramic bells)	15, 10 (X.66 diminution), 5 (X.33 diminution)
four (sandpaper blocks)	12, 9, 6, 3

(Parts one, two, and four are shortened by subtraction while part three is shorted by diminution.) (See Ex. 12.)

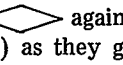
Example 13



There is a great contrast in the temporal texture of the macrostructure. A note count of measures 1 through 11 yields the following series of numbers: 77,65,36,70,46,45,29,22,47,27,2 (rolls are counted as one note each for the purposes of this analysis). When plotted in two dimensions this series reveals the form seen in Ex. 13.

When this form is analyzed into its component parts, there are three differently-shaped decreasing structures revealed (labelled as subforms 1, 2 and 3), each of which begins and ends at successively lower levels. The contrast in qualities of change between dynamic values and temporal texture values is the difference between linear change at one level and statistical change at the next higher level, since all dynamic values are moving in one direction (lower) by means of decrescendi. An analysis of the sonic texture will also reveal a change from four to one moving in a nonlinear, but goal-oriented manner. This change is a result of the process of shortening (by subtraction and telescoping) mentioned above.

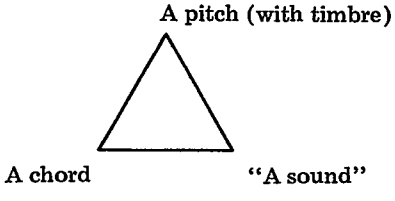
The noise drone consisting of the sound of tumbling pebbles inside a clay pot and the slow, circular movement of sandpaper blocks, is intended to fuse timbrally into one sound.[11] It is present during the entire second section and functions as a sonic backdrop for the cyclic stone music.

The stone music consists of four parts of different-lengthed periodicities (4 beats, 4 1/3 beats, 5 beats, and 3 3/8 beats) beginning in staggered entrances, and coming together in measures 22 and 23 in a new periodicity of 2½ beats, and then separating again in time, in a retrograde form using the same periodicities. The dynamics in this section form an inversion of the general macrostructure ( against  in the temporal texture) as they get louder when the periodicities occur closer together in time (see Ex. 14).

If the individual struck stone events combine to form temporal gestalt units[12] when sufficiently close together in time, then a fascinating study can be made by analyzing the various groupings into temporal and spatial configurations. The stereo recording of this passage is particularly interesting since the transient nature of the percussive sound events makes them much easier to localize in space than more continuous-wave vibrations. Of course, there is no substitute for hearing this phenomenon in real space. The stark, noiselike quality of the sonic materials in this section often gives rise to the experience of focusing the attention on the purely perceptual (noncognitive) aspects of the listening experience and contributes to the multidimensional nature of the piece as a whole.

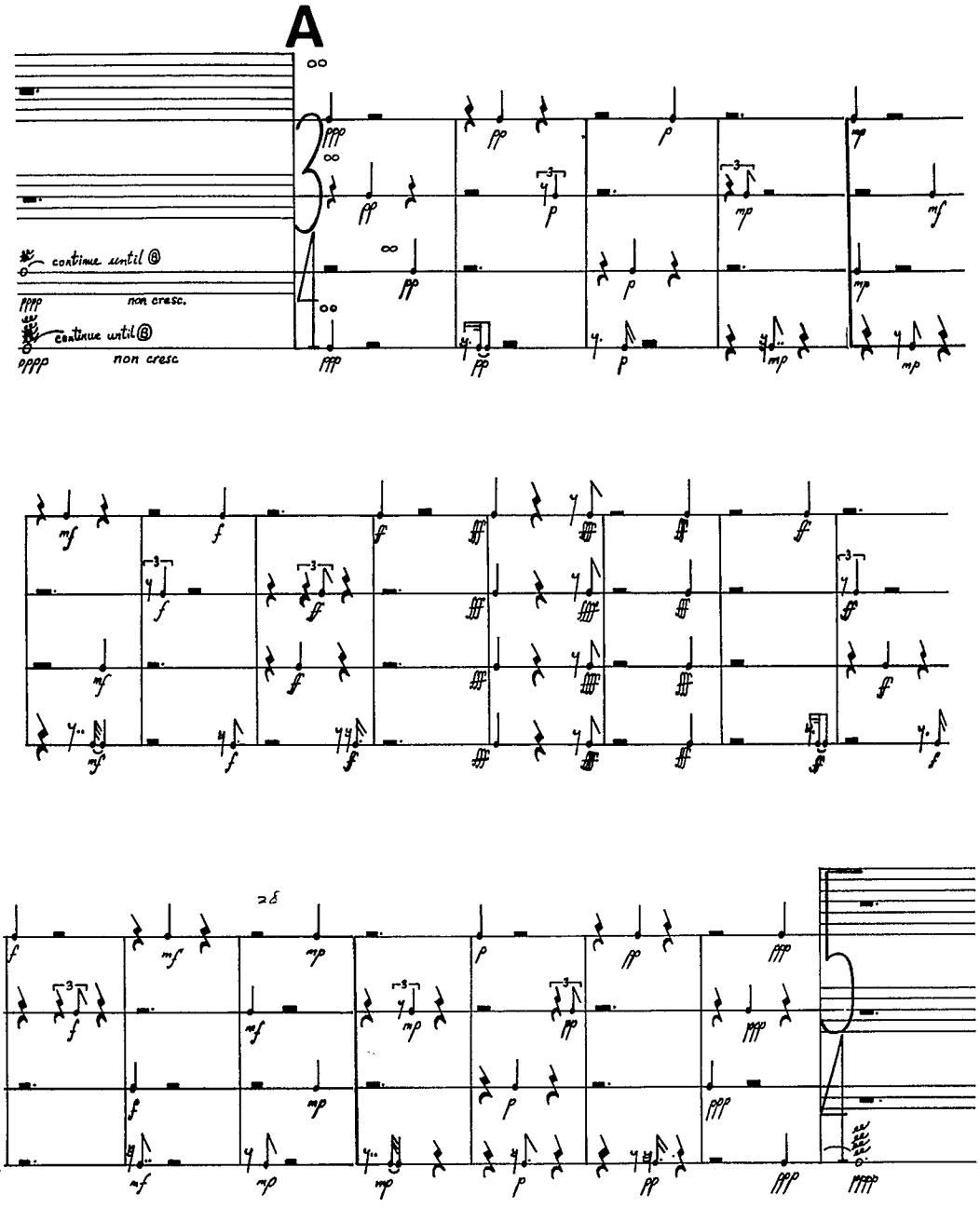
Movement five (glass) is composed in the macroform ———, or stasis. The movement is conceived as one sound event of five minutes duration in which there is a gradual shift from dark to bright timbres. Time is measured with a stopwatch and the score indicates only entrance times for new sounds. At precisely the golden mean point of 3′5″ (which was obtained by dividing the total duration by 1.61803 and rounding to the nearest second) the glass wind chime (which combines noiselike impact sounds and pitchlike ringing sounds) enters and begins a motion toward noise timbres which does not culminate until movement six.

The glass movement aims at a measure of timbral fusion, which is almost guaranteed by the presence of the stroked wine glass and brandy snifter sounds. It should also be possible to shift the focus of attention to the individual sounds within the complex, to hear the sound complex as a whole sound (with timbre), or to hear the complex as a chord. The presence of adjacent semitones in the wine glass, brandy snifter, and cloud chamber bowl parts should insure a certain amount of clustering phenomena. Shown below is Erickson's model for the relationship between pitch, chord, and sound (unpitched).[13]



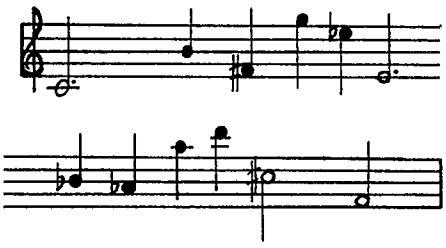
If the word "cluster" were substituted for "sound" then this would be an accurate model for the intention of movement five, which is that this music will hover on the thresholds of these three psychoacoustical phenomena and cross over to one or another from time to time, depending on the listener's attention. The general absence of rhythmic, melodic and gestural cues should guarantee that the attention will

Example 14



be focused on the sonic qualities (although I have long since given up on expecting audiences to grasp conceptual ideas on first hearing without any instruction; listeners generally get from a musical experience whatever they bring to it—which is usually something related to their expectations and prior experiences). The one possible exception to the psychoacoustical effect of the whole movement is the optional glass harmonic part (see Ex. 15). This presents the pitch set from movement one in original form in an augmentation of rhythmic mode one.

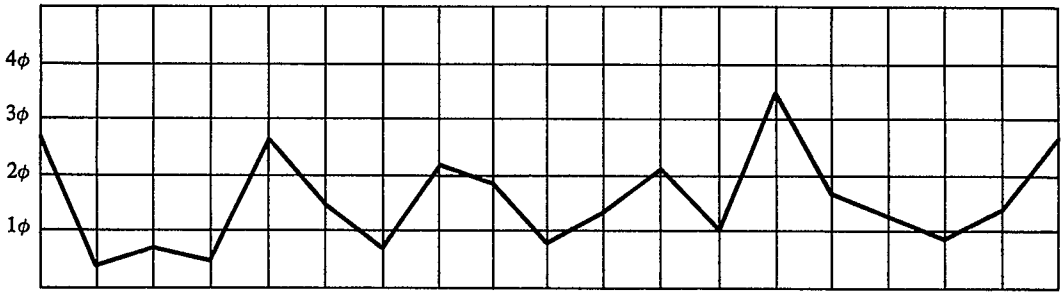
Example 15



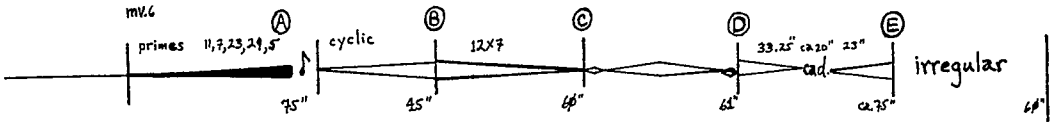
The temporal analysis of movement five plots the durations between successive entrances against time and reflects the essential stasis of the movement (see Ex. 16).

Movement six (all) integrates sounds and compositional practices from the first five movements. There is a different micro-soundworld in each section of the movement, just as there are different soundworlds in each of the other movements: thus timbrally and in other, less obvious ways movement six is a microcosm of the whole composition. It follows movement five without pause and begins with a continuation of the glass wind chime sound and continues as marimba wind chimes, stone wind chimes (Brazilian agate), and glockenspiel wind chimes are added. The first section is still timed with a stopwatch (like movement five) and the temporal approach is durational. The entrance and cutoff times are from the prime number series (11,7,23, and 29). (See Ex. 17.)

Example 16

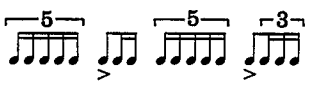
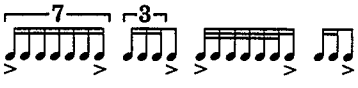
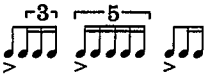
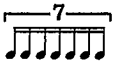
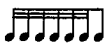


Example 17



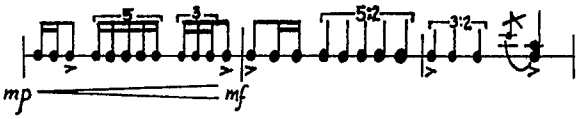
The timbres, rhythmic approaches, and structural procedures of the first five movements are integrated in movement six in many different ways. Also, many of the microforms of this movement are structured like the macroforms of previous movements. The first section (beginning to 15 seconds after letter A) draws on the rhythmic practice of movement five and the macroform of movement one. Scored for only wind chimes, it mixes glass, wood, earth, and metal sound sources as pointed out above, and the sonic texture increases from four to one as the dynamics increase from pp in one part to mp in three parts and p in one. (The dynamics will also be influenced by the temporal texture; each time a new wind chime is added, many more attacks will be heard per second—which will add to the composite dynamic level much the same as adding contrapuntal voices increases the volume of an organ fugue). Furthermore, the composite timbre becomes more noiselike as the impact sounds from the wood, stone, and metal chimes are added; the material out of which the chimes are composed is harder for each successive entrance (metal harder than stone, stone harder than wood) and the attack transients are more noiselike for the harder materials. So, not only does the composite timbre become more heterogeneous, it also becomes more noiselike.

Section one officially ends with a breaking lightbulb which combines the dark, noiselike implosion sound with the bright, pitchlike breaking glass sound and symbolically kisses off the end of the single event begun with the fifth movement, and also signals the beginning of a very different kind of music; a music more apt to be approached cognitively than perceptually.

Section two contains rhythmic procedures reminiscent of movements one and two integrated in a new polyrhythmic manner. The two cycles:  and  , (five and four beats respectively) appearing at tempo ♩ = MM 60 and the third cycle  (three beats) appearing at tempo ♩ = MM 90 are all heard simultaneously in changing temporal relationships. The basic substructures of these motives are:  or  (equal subdivisions of a beat in primes);  or  and their retrogrades (subdivision of a beat into halves and further subdivision of the second half by two or three—also primes) and 

In addition, the three-beat motive appears in retrograde form (in the fifth 3/4 measure) and in partially augmented form (see Ex. 18).

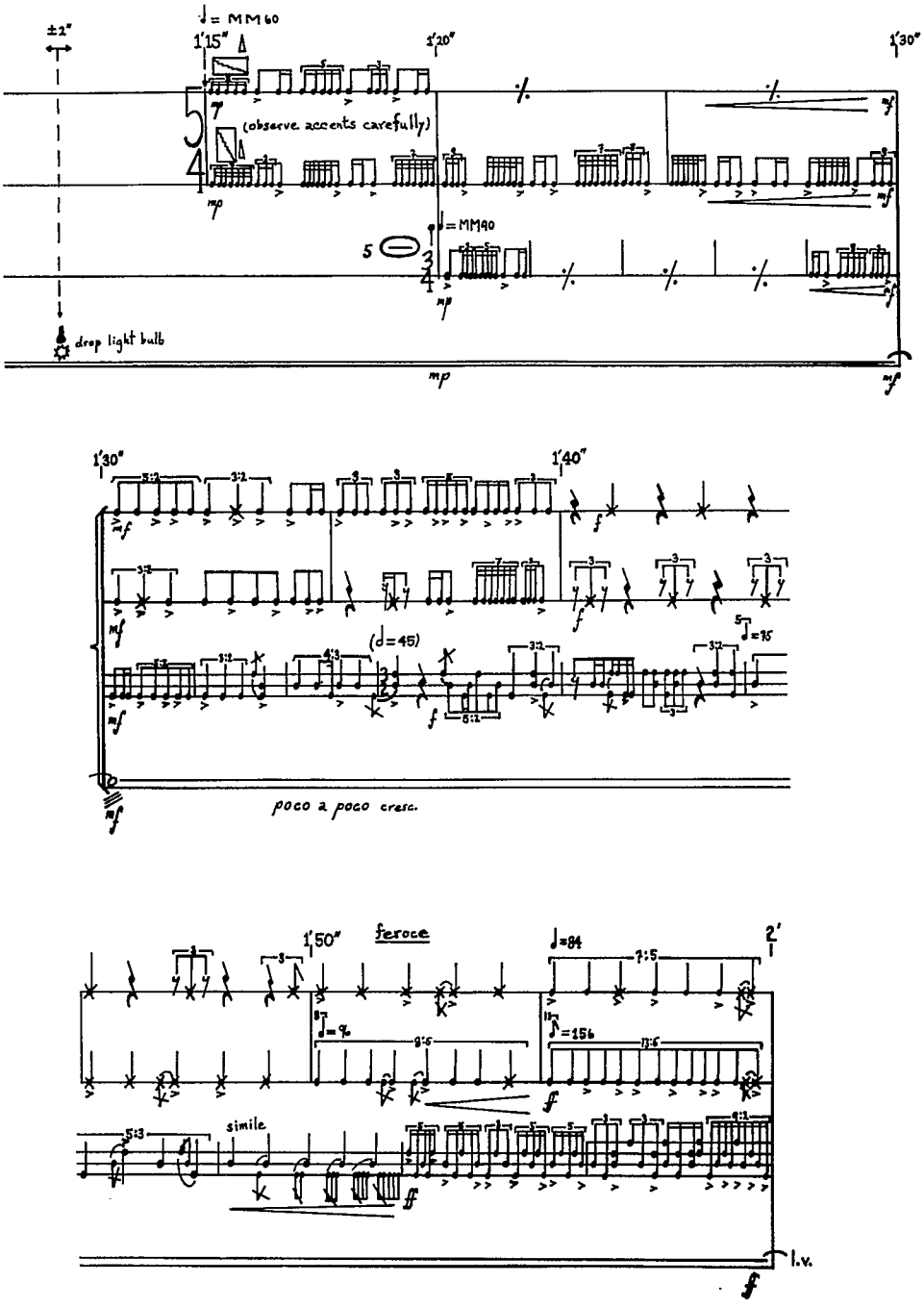
Example 18



The composite tempo forms an accelerando as the three periodicities reach tempi of MM=75:84:156 (a ratio of 6.25:7:13) by the end of the section. (The performance problem of conducting in two simultaneous tempi with different bar lines was solved by using a free performer as a second conductor.) The structural shape of section two is < (river). (See Ex. 19.)

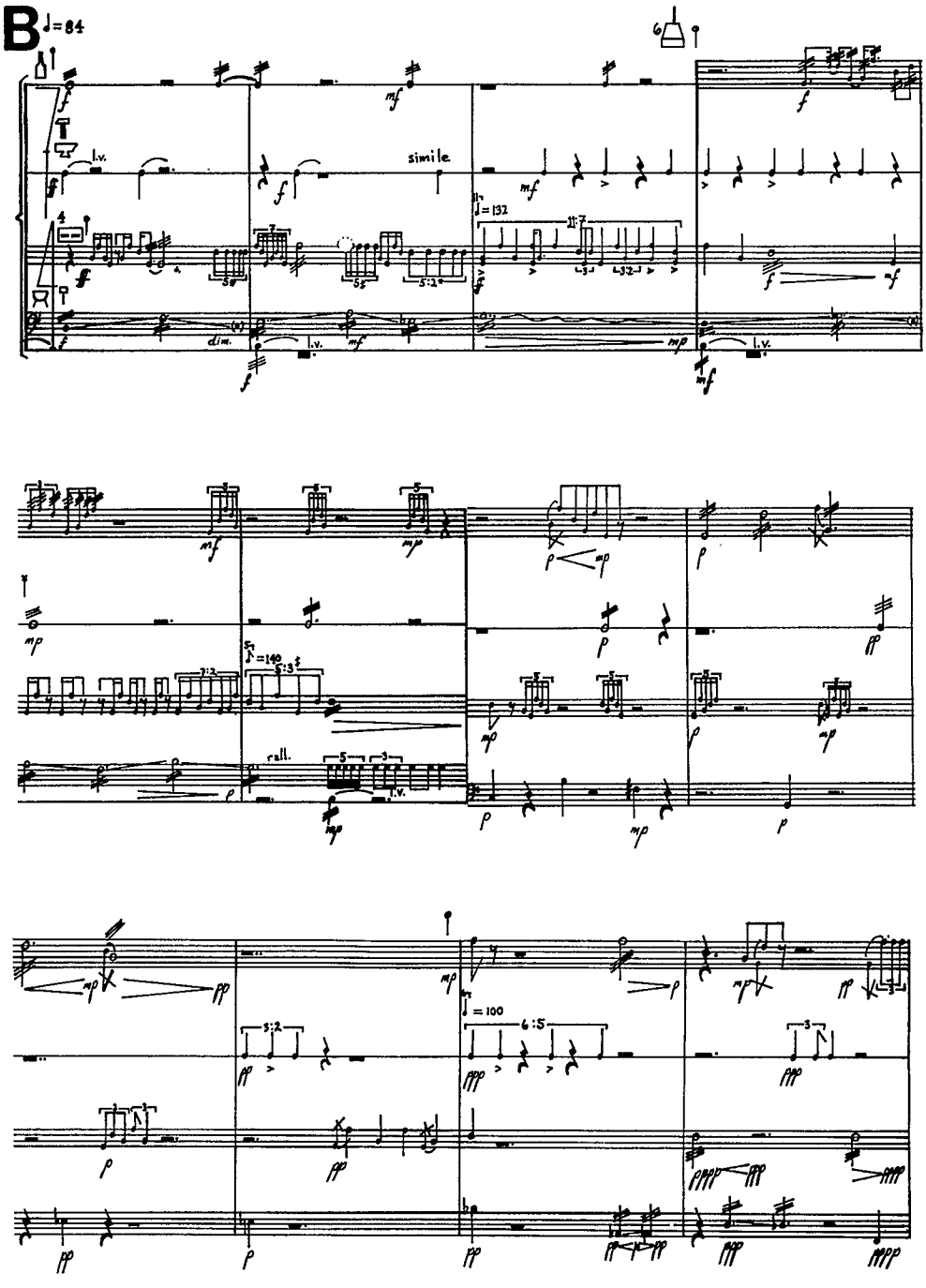
The third section is in the form of > in dynamics and temporal texture, and combines elements of the rhythmic procedures of movements one, two and four. Analysis of the rhythmic and sonic values will show aspects of the six different forms present in each part—some speeding up, some slowing down, some doing both in one order and some doing both in the other order. Thus, there is an integration of the different structural forms into the rhythmic domain (see Ex. 20).

Example 19

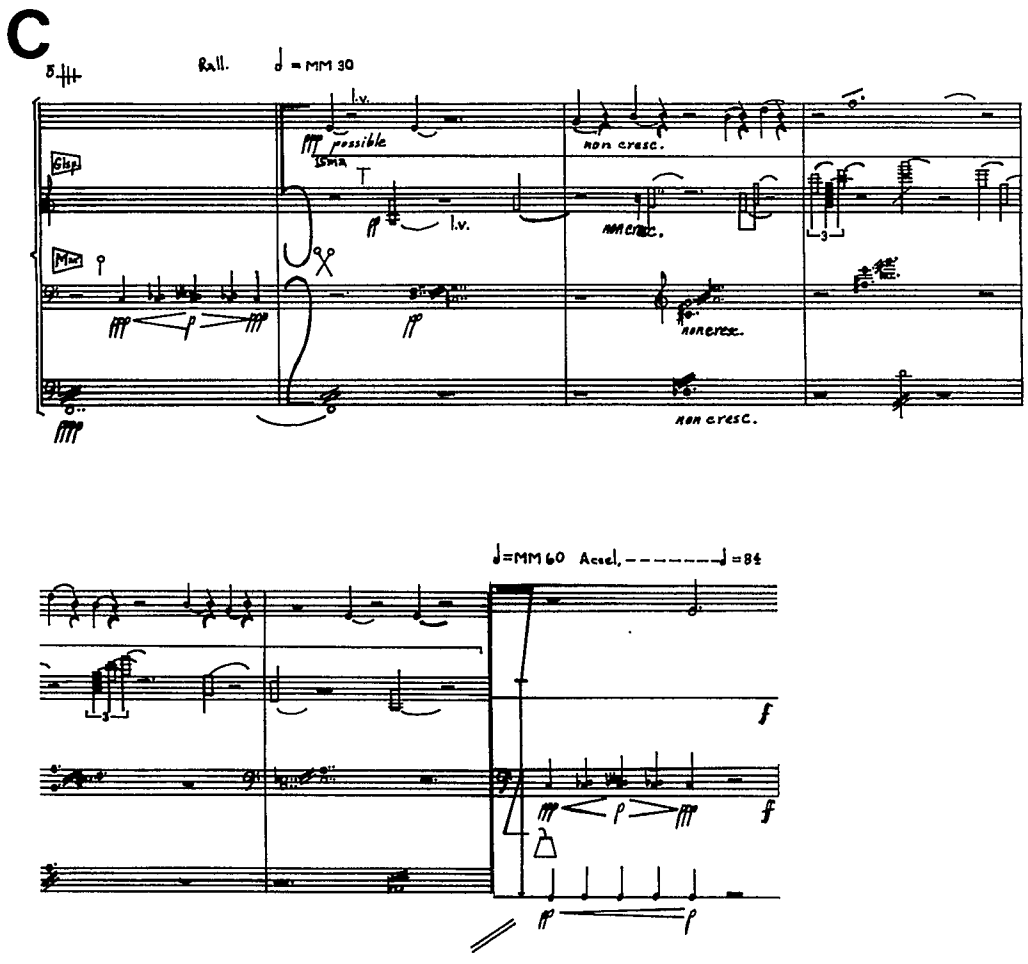


note: rim shots should be executed with one stick resting on rim and other stick striking rested stick; grace note rim shots should be executed with one stick only.
Before 8, All four parts should be balanced so that no part dominates except when accented.

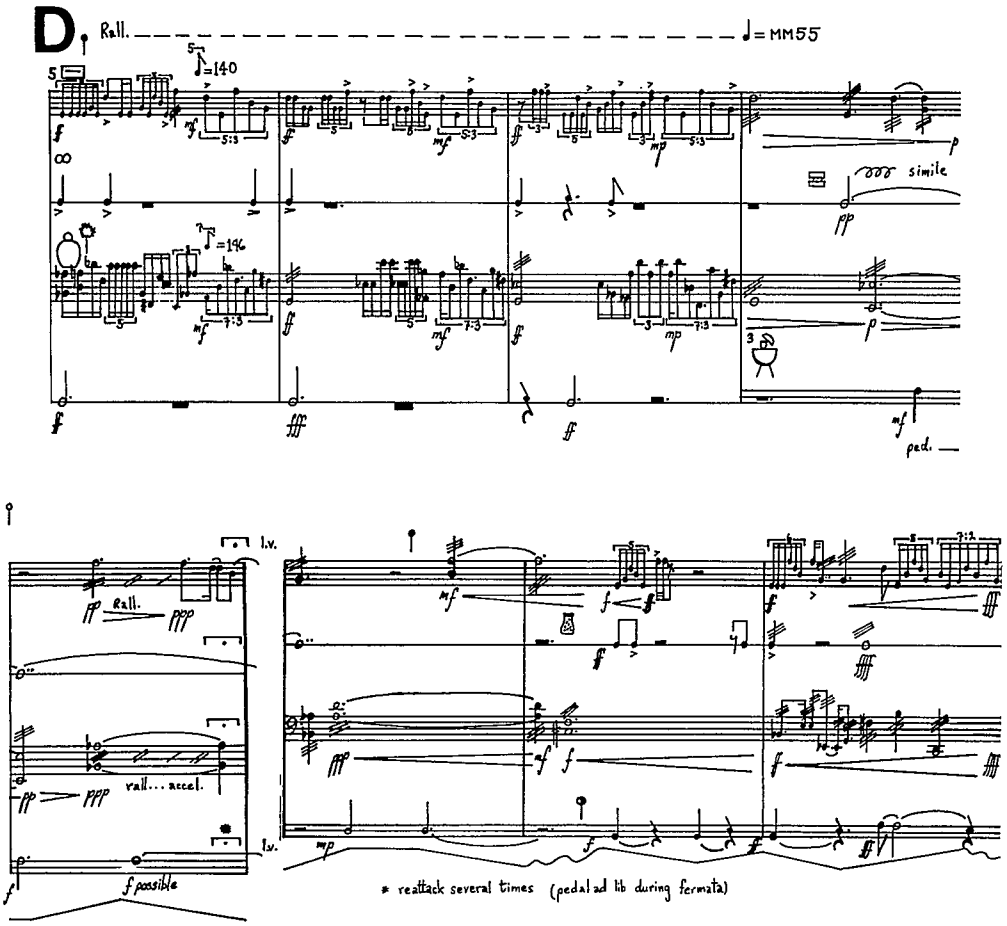
Example 20



Example 21


C
Rall.
♩ = MM 30
l.v.
possible
15ma
non cresc.
Glsp
l.v.
Mar
non cresc.
non cresc.
♩=MM 60 Accel. ♩=84
f
f

Example 22

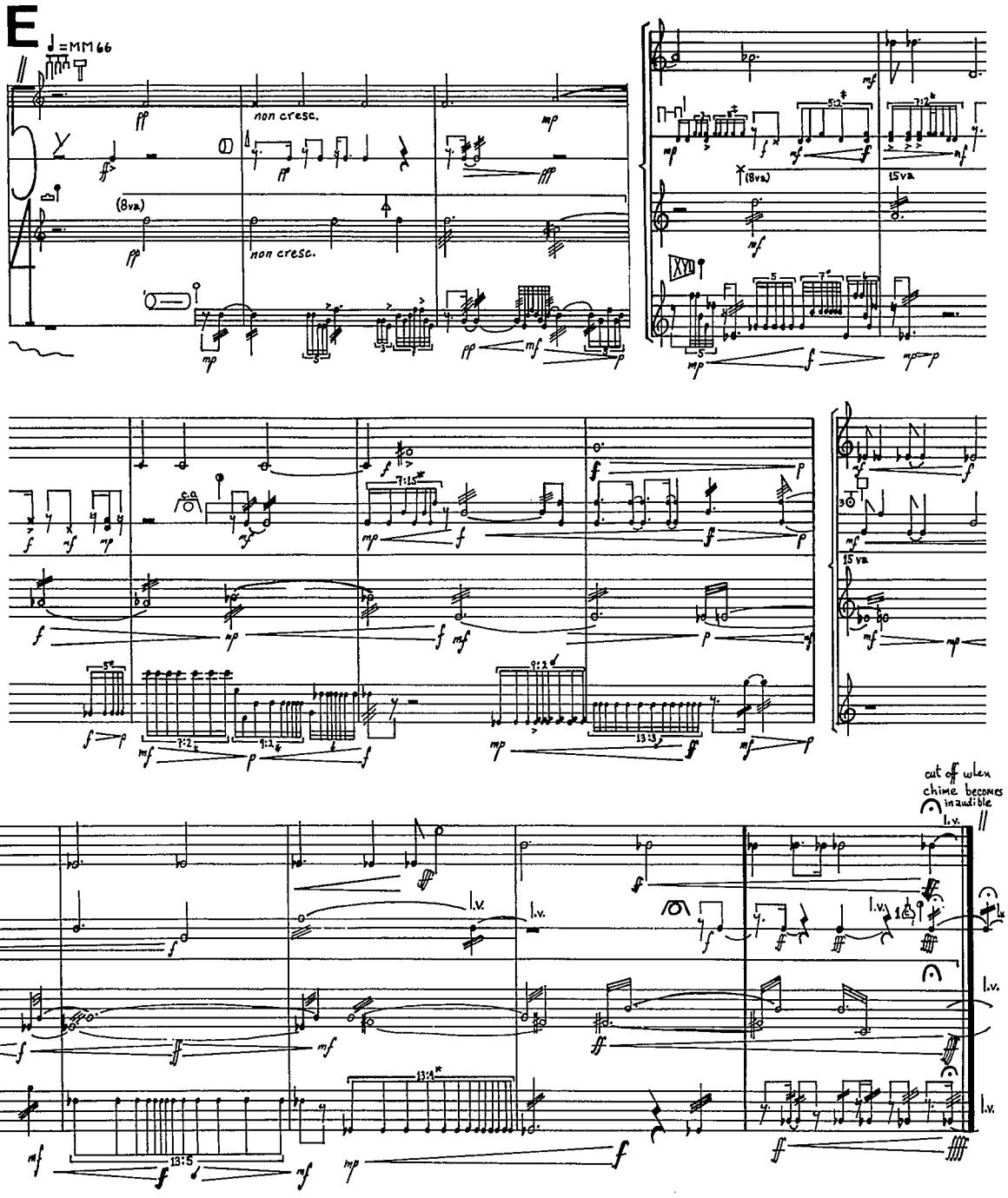


The fourth section begins and ends with mrdangam-shaped microforms of five beats in the marimba part (against in timpano at the beginning and pp p in lion's roar at the end) which both surround a symmetrical structure which could be analyzed as either an hourglass or a mrdangam or both, depending on the analytical method used, and which parts are given more wieght in the analysis. Dynamics remain relatively static in this section (see Ex. 21).

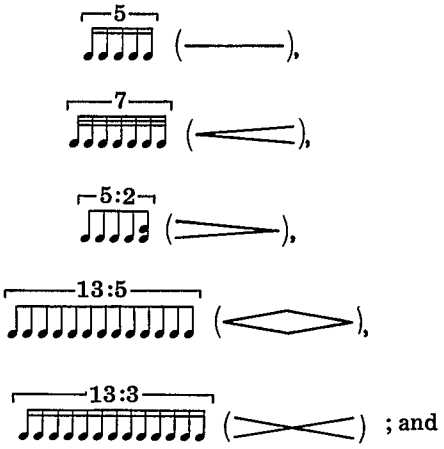
Section five is a skewed hourglass form in dynamics and temporal texture with the center point being filled in with an ad lib. "cadenza" for bowed kin (Japanese cup gongs) sitting on timpani (which act like resonators) while the pedals are being moved to create shifts in the resonance characteristics similar to a formant shift in speech when a vowel changes to another vowel. This special sound was the primary sonic characteristic of my earlier composition *Pi/Grace* (for two percussionists) and this short cadenza serves to trigger a memory of that aesthetic space.

The soundworld changes slightly faster in this section as the second part changes from striking stones, to sandpaper blocks to pebbles in clay pot (all noiselike earth sounds) and the fourth part moves from lion's roar to bowed cup gongs on timpani to struck cup gongs on timpani (see Ex. 22).

Example 23


E
♩=MM 66
non cresc.
non cresc.
(8va)
15va
cut off when chime becomes inaudible
l.v.
* N in n beats getting closer together in time.
t getting farther apart in time.
getting closer together then farther apart in time.
getting farther apart then closer together in time.

The final section speeds up the rate of timbre change as part two changes from slapstick, to bass drum, to timbales, to Chinese opera cymbals, to pitched gongs, to tam tam, to ceramic bell; and part four changes from log drums to xylophone. Parts two and four contain microforms which combine both deterministic and irrational rhythmic values which realize all of the *yati* in the rhythmic domain:



; and

there are also several irregular microforms. The pitch set appears in retrograde inversion in the tubular chime part, and is mirrored (by the retrograde form) in the crotale part (see Ex. 23).

The composition of timbre was undertaken with the intention of using sound in a structural manner, not as a coloristic effect. I had been strongly influenced in this regard by my experience with electronic and computer music, in which the very sounds themselves are often composed from within before the musical structures are built out of the new sonic materials. Of course, when composing for acoustical instruments it is not generally possible to compose timbre "from within" but a common approach is to compose unique simultaneous sonic configurations as well as successive configurations and integrate the structural procedures used in the timbre domain with those in other parameters, as I have attempted in *Soundscape*.

The spatial setup is not specified for *Soundscape* although the general instruction is given that: "The various instrumental families should be arranged in such a way that they each occupy a separate area of the space. Each of the first five movements is performed in a separate area of the performing space, and the performers move from area to area between movements." The final movement is then performed in the total space of the other five movements, creating a spatial analog for the large timbral space of the final soundworld.

I had taken seriously Stockhausen's belief that separation of a composition into movements is no longer necessary, since in the new music any material can appear at any time and temporal procedures may change in unpredictable ways. I ended up not following this concept with *Soundscape* because of my timbral strategy—although movements 1,2 and 5,6 are performed without pause because of natural sonic possibilities of merging (the final decay of movement one and the glass windchime transition of movement five). Furthermore, due to the large number of instruments involved, and the complex logistical problems associated with performing the piece with a reasonable number of players, the breaks between movements were necessary for the players to move between the different setups.

In closing, I would add that while the focus of this article is on the technical aspects of sound and idea as they relate to the composition of *Soundscape*, it is important to understand that technique is not the main "point" of my music. The most important aspects of my musical work are connected with artistic and aesthetic values, and even philosophical ideas which would properly be the subject of a much larger article, or perhaps a book. Such values and ideas are implicitly embodied in the exercise of the techniques discussed in this article, but actually transcend the technical level and should be considered separately in order to be properly understood.

References

1. *Soundscape* was premiered March 7, 1977 at Oberlin College, and published by Lingua Press (Box 481, Ramona, CA 92065) in 1978; a recording by the OPG was released by Lumina Records (236 Lafayette Street, New York, NY 10012) in 1981.
2. Joseph Needham, *Science and Civilization in China.* 1962. Vol. IV, Part I, pp. 141-160. Cambridge University Press, Cambridge.
3. Taught by T. Ranganathan currently of Wesleyan College, Middletown, CT.
4. Benjamin L. Wharf, Language Mind and Reality, ETC.: A Review of General Semantics, Vol. IX, No. 3.
5. Iannis Xenakis, *Formalized Music.* 1972. Indiana University Press, Bloomington, IN.
6. Temporal texture is defined as: the number of individual sonic events within a given temporal unit—the beat, the measure, and the second are common units I use. The unit itself is arbitrary and may change from passage to passage or movement to movement. I also use the concepts of *sonic texture* (the number of simultaneous sonic events at any time) and *timbral texture* (the number of different timbres present at any time) in my theory. These three textural concepts may be subjected to averaging procedures when middle level structures and macrostructures are composed or analyzed.
7. George Gamow, *One Two Three . . . Infinity.* 1947. Bantam Books, New York, NY. p. 225.
8. The symmetrical subunits e and c are identical in pitch pattern when in inversion and retrograde. A strict retrograde of the subunit would contain an accent at the *end* of the subgroup, however.
9. See H. E. Huntley, *The Divine Proportion: A Study in Mathematical Beauty.* 1970. Dover Publications Inc., New York, NY.
10. I might mention in passing that since there are virtually an infinite number of different methods for realizing a simple structural process, the artistic possibilities for musical composition are essentially endless in their capacity to fascinate the mind. This is a central tenet of my musical philosophy.
11. See Robert Erickson, *Sound Structure in Music.* 1975. University of California Press, Chapter two.
12. James Tenney, META Meta + Hodos, *Journal of Experimental Aesthetics,* Vol. I, No. 1.
13. Erickson, op. cit. p. 19.

Special Symbols:

Metal:

= metal wind chimes (1)

= glockenspiel wind chimes (1)

= brake drum (1)

= elephant bells (string of 3 or more)

= triangle (3)

= crotales (13) sounding 8va higher

Glsp. = glockenspiel (1)

Vib. = vibraphone (1)

= kin (Japanese cup gongs) (5)

= enamel saucepan (with water) (1)

= stainless steel mixing bowl (with water) (1)

= pitched gong (3) indeterminate pitches
use largest available

= tubular chimes (1)

= almglocken

= bell plate (1)

= hanging bells (at least 3 strings)

= stroked rods (5 indeterminate pitches)

= rivet cymbal (1)
(sizzle cymbal)

= anvil (1)

= metal pipes (5) (electrical conduit, on felt strips)
indeterminate pitches, 10" — 20" in length

= thunder sheet (1)

= tam tam (1) 30" or more in diameter

= cow bells (12) or higher almglocken

= Chinese opera gongs (8) different sizes

fermate:

= short fermata (1"–3")

= medium fermata (3"–5")

= long fermata (5"–8")

Skin:

= snare drum (snares on) (1)

= military drum (snares on) (1)

= conga drum (1)

= timbales (2)

= snare drum (snares off) (1)

= military drum (snares off) (1)

= timpani (5)

= bass drum (mounted vertically) (1)

= lion's roar (1)

= bass drum (mounted horizontally) (1)

Wood:

= log drum (4 pitches) = twigs (many) broken with a twisting motion

= slit drum (4 pitches)

= wood block (8)

= temple block (8)

= maracas (2 or more taped together)

= cabaza (1)

= claves (2)

= slapstick (1)

= xylophone (1)

= gavel and block (1)

= wooden headed drum (1)

= rachet (1)

= marimba (1)

= marimba wind chimes (1)

= bamboo wind chime (1)

= wood bell or Japanese wood blocks (mokusho) (2 pitches)

Earth:

= clay bells (7) (flower pots)

= stone chimes or (5 indeterminate pitches) chinese ringing stones

= ceramic bells (3) (thrown clay in indeterminate pitches, bell shape)

= sandpaper blocks (2)

= pebbles in clay pot (1)

oo = striking stones (8) from ocean beach 3"—4" dia.

= stone wind chimes (1) (Brazilian agate)

Glass:

= brandy snifter or wine glass (12) (tune with water)

= cloud chamber bowl (4)

= bottle (4)

= glass wind chime (1)

= shards in bottle (1)

= light bulb (1) (large spot if possible)

Sticks, Mallets and Beaters:

= snare drum stick

= with plastic tip

= wooden spoon

= wire brush

= triangle beater

= knitting needle

= bow

= timbale stick

= hand

= chime hammer

= metal hammer

= soft mallet

= medium mallet

= hard mallet

= brass mallet

= soft yarn mallet

= medium yarn mallet

= hard yarn mallet

= soft timp mallet

= medium timp mallet

= hard timp mallet

= soft beater

= medium beater

= hard beater

= steel core beater

= kin beater (rubber covered wood)

playing end shown at top of all sticks, mallets and beaters

= dead stick

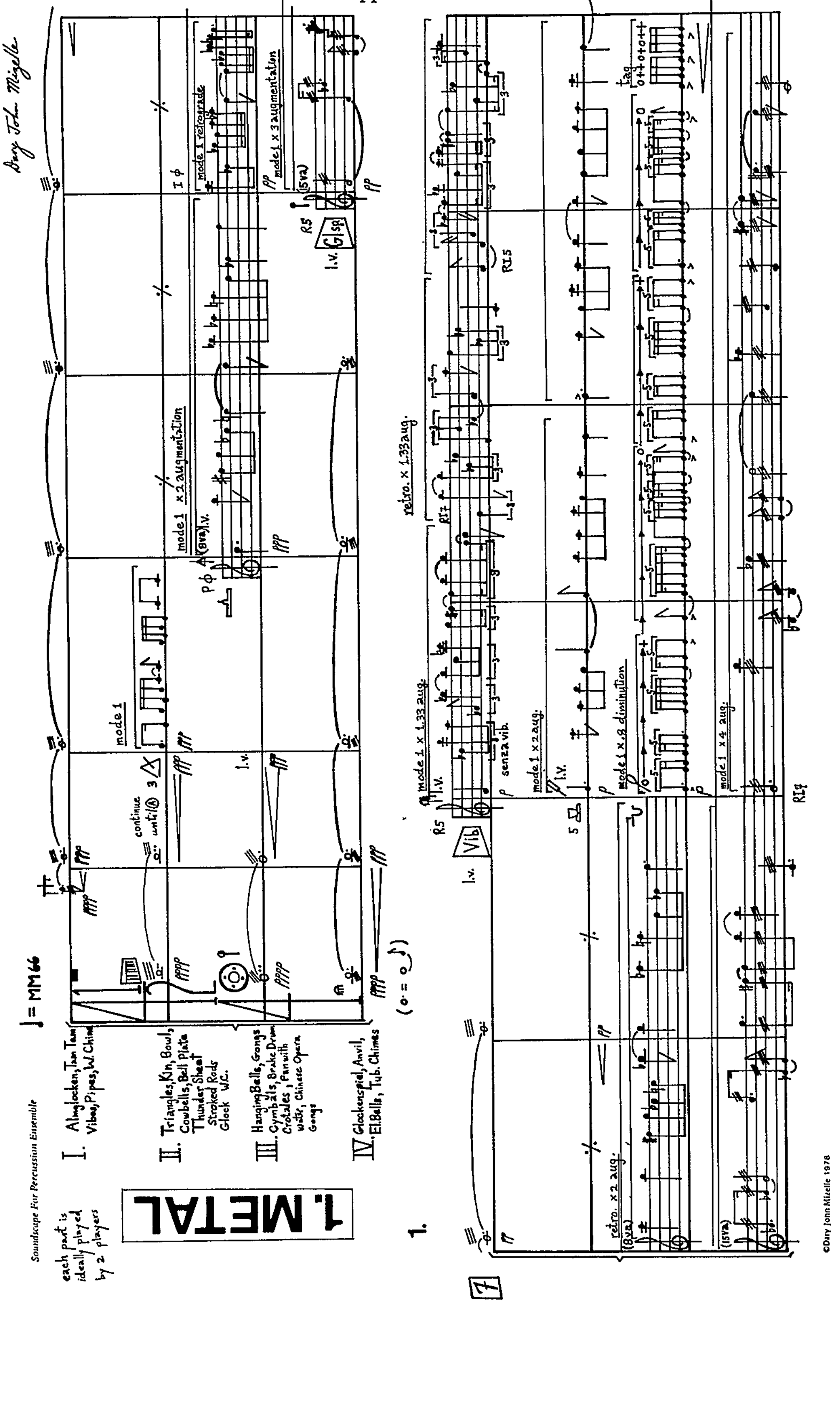
= rim shot

o ——→ +

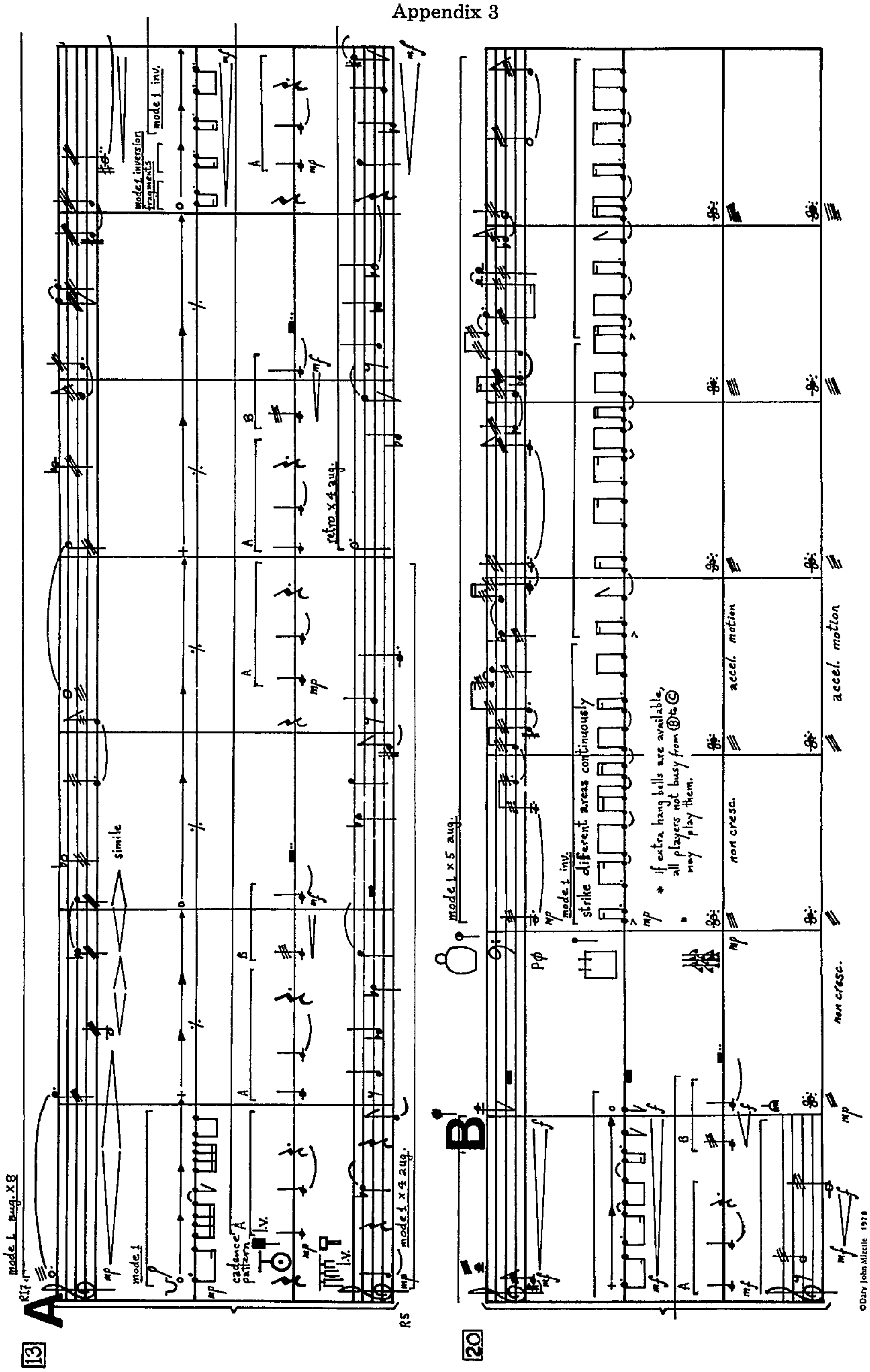
water not covering bottom of pan — gradual change by tilting the pan — water covering bottom of pan (use ½" to ⅞" of water)

Appendix 1

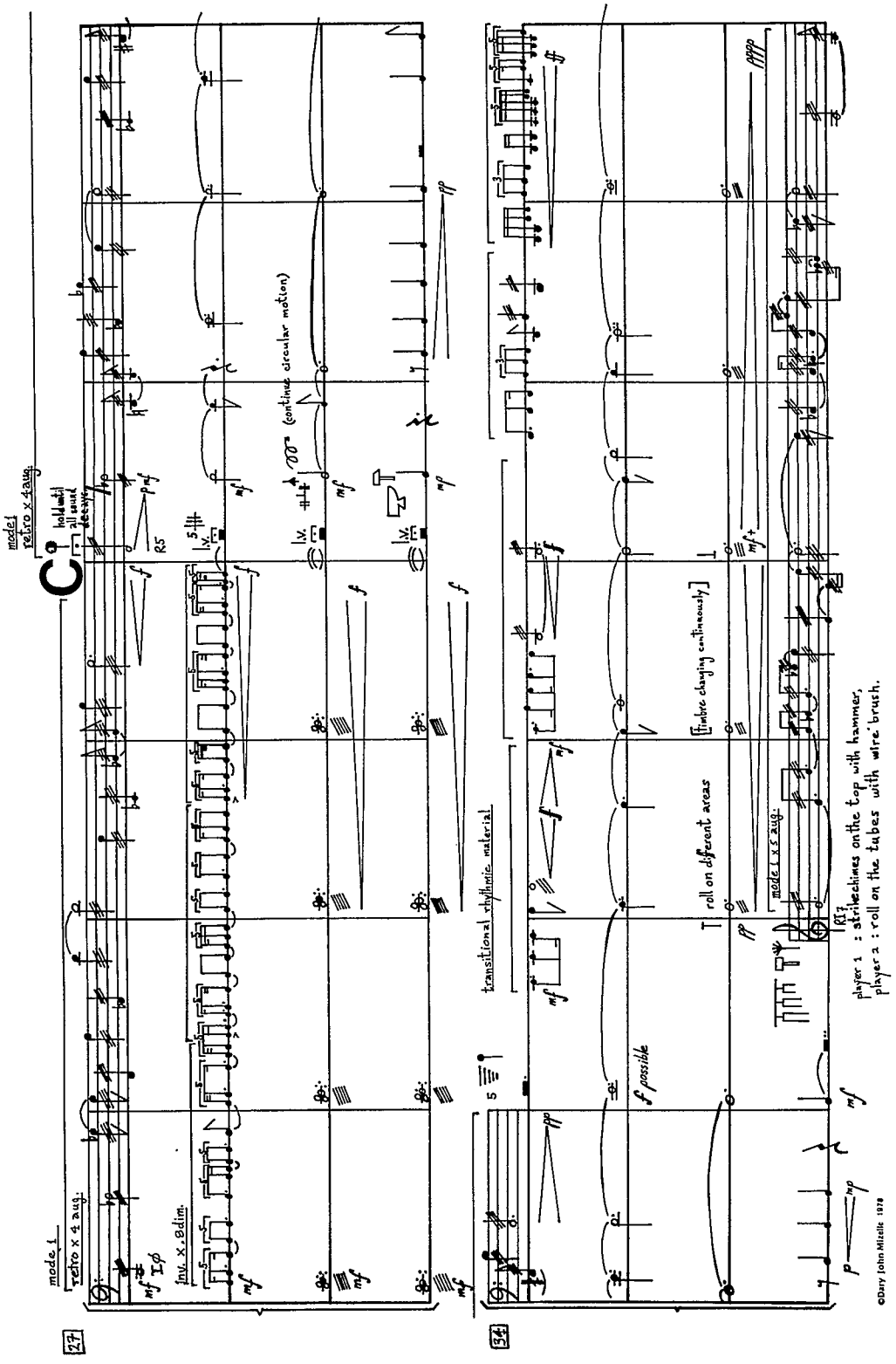
Appendix 2


1. METAL
Soundscape For Percussion Ensemble
each part is ideally played by 2 players
mode 1
mode 1 x 2 augmentation
mode 1 retrograde
mode 1 x 3 augmentation
retro. x 1.33 aug.
mode 1 x 1.33 aug.
mode 1 x 2 aug.
mode 1 x .8 diminution
mode 1 x 4 aug.
retro. x 2 aug.
senza vib.
©Dary John Mizelle 1978

Appendix 3


13
20
mode 1 aug. x 8
mode 1
cadence pattern
l.v.
simile
mode 1 x 4 aug.
retro x 4 aug.
mode 1 inversion fragments
mode 1 inv.
mode 1 x 5 aug.
strike different areas continuously
* if extra hand bells are available, all players not busy from B to C may play them.
non cresc.
accel. motion
©Dary John Mizelle 1978

Appendix 4


mode 1
retro x 4 aug.
inv. x. 8 dim.
hold until all sound decays
(continue circular motion)
transitional rhythmic material
mode 1 x 5 aug.
roll on different areas
timbre changing continuously
as possible
player 1 : strike chimes on the top with hammer,
player 2 : roll on the tubes with wire brush.
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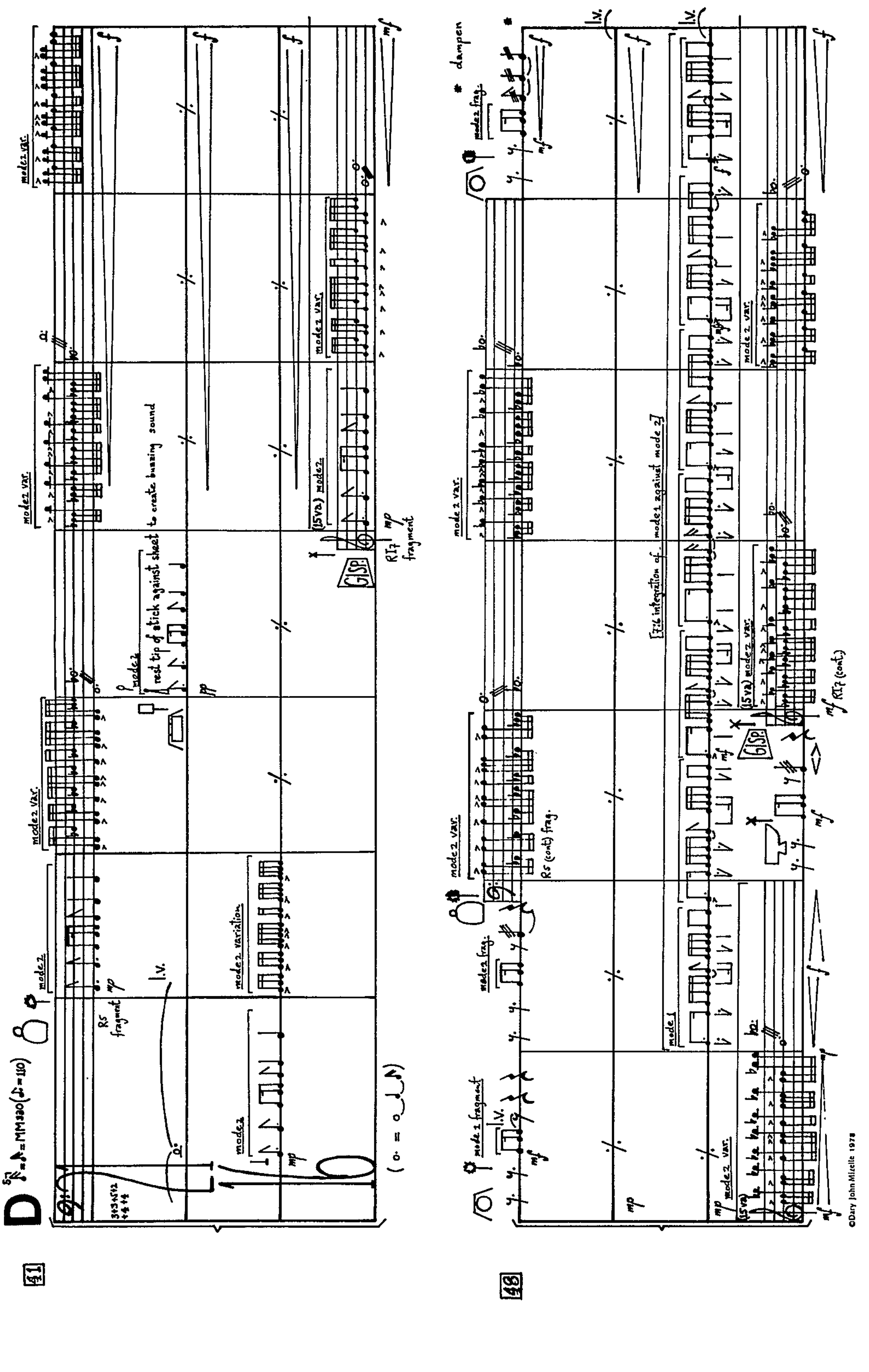
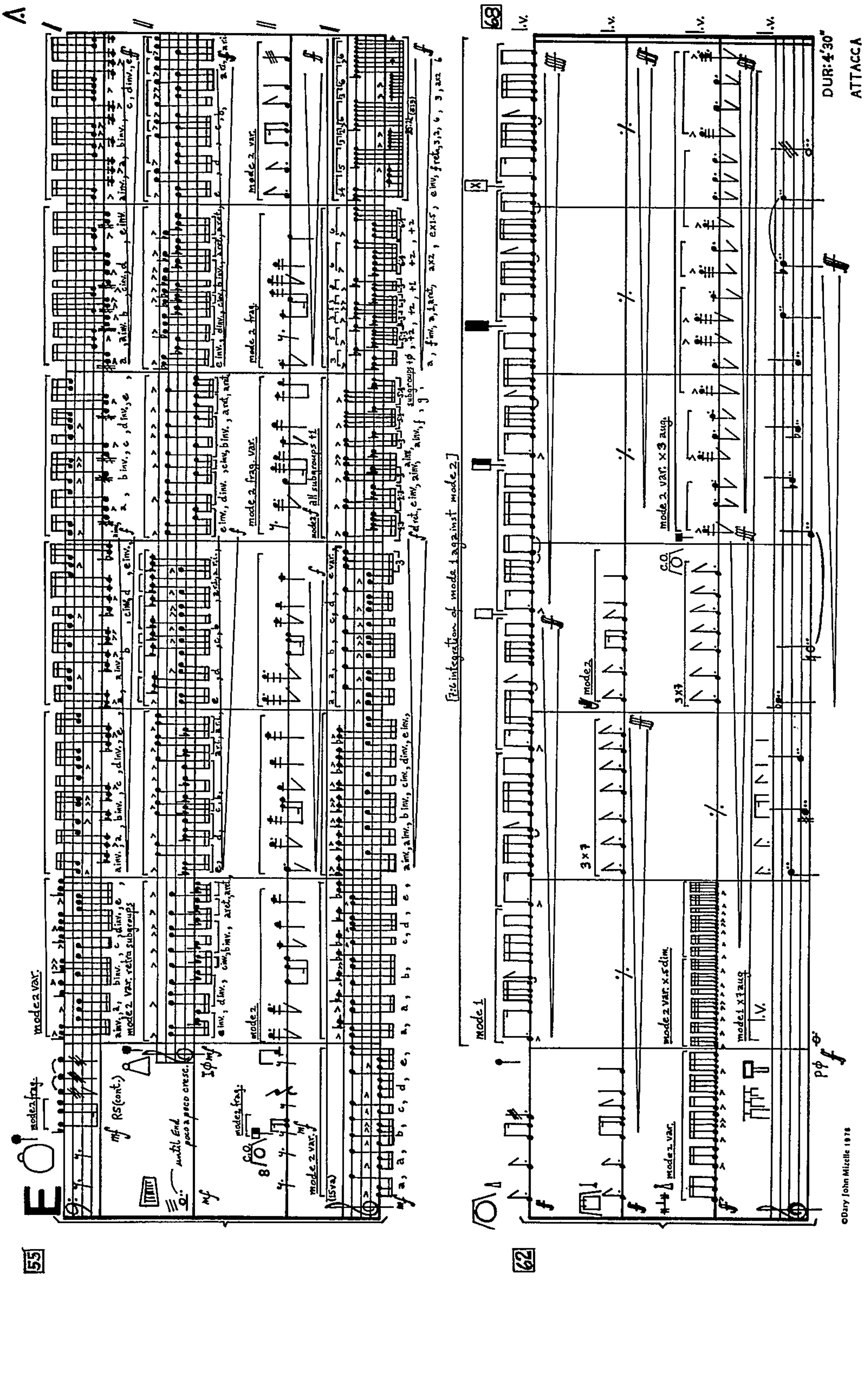
Appendix 5


mode 2
mode 2 variation
mode 2 var.
rest tip of stick against sheet to create buzzing sound
RS fragment
RI7 fragment
mode 1 fragment
mode 2 frag.
mode 1
Rs (cont) frag.
[7:6 integration of mode 1 against mode 2]
RI7 (cont.)
dampen
©Dary John Mizelle 1978

Appendix 6



Stuart Smith's "Links" Series

Mr. Welsh, composer/pianist, received degrees from the University of Maryland and Rutgers University in New Jersey. In addition, he is interested in exploring new notational systems as well as composing for mixed-media and small chamber groups. Recent performances of his works have been given throughout New Jersey and at the 1982 and 1983 Baltimore New Music Festivals. His works are published by Dorn Publications.

Stuart Smith has composed some of the most difficult works in the solo vibraphone repertoire. The performance of these compositions demands a high level of technique as well as sensitive musicianship. In short, *Links* (1974), *Links No. 2* (1975), and *Links No. 3* (1975) for solo vibraphone—the "Links" series—are virtuosic works both compositionally and otherwise. In these traditionally-notated scores, the demands on the performer are (1) understanding complex forms—"full of digressions, beside the points, mistakes, and right and wrong turns,"[1] (2) executing complex rhythms, and (3) solving physical/technical performance problems.

In addition, Smith has pursued other compositional challenges. His quasi-improvisational scores invite the performer to become involved in the compositional process (i.e., a player may be asked to improvise the tempo and entrances of the materials, while the pitches, rhythms, and dynamics will be specified).

Recently, Smith has adopted the term "trans-media"[2] to identify his compositions which transcend *all* media—that is, those scores which can be interpreted and performed by musicians, dancers, actors, mimes, artists, light-artists, or film-makers together or separately. In discussing the latter two compositional categories, Smith has made the following comment:

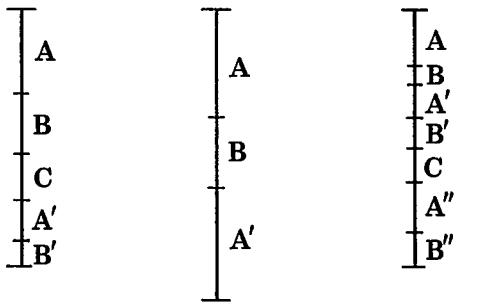
> . . . all my scores are 'fully-notated' in the sense that I notate what I want. Just because I notate various performance op-

tions does not mean my works are not 'fully-notated.'[3]

In realizing any of Smith's scores, then, virtuosic performing and mature interpreting skills are essential.[4] Specifically in the "Links" series, the performer must be able to execute the most delicate pianissimo and the most forceful fortissimo, in addition to dealing with the myriad changes of mood and timbre—from the fleeting, powerful passages and the delicate whispers to the humorous staccatos.

My analysis begins with a brief overview of the "Links" series. Diagram 1 reveals the relative durations of each section with respect to (a) the individual works themselves and (b) the entire series of three solos. On the macro level, the series assumes a large A B A plan. This plan is also in agreement regarding clock time—*Links* and *Links No. 3* are slightly more than three minutes in duration while *Links No. 2* totals approximately four minutes.

Diagram 1



In partial explanation of the interconnections in these vibraphone solos, it becomes necessary to focus attention to *Links* (1974) regarding its (1) formal scheme, (2) pitch organization, and (3) temporal construction and the demands of all these on the performer.

Links (1974)

The overall form of *Links* is A B C (A′B′). The A section is generally characterized by fast-moving rhythmic motion. Although the tempo is ♩ = 66–72, the subdivisions are usually small. The excerpt below is the opening phrase of section A (see Ex. 1).

The B section is slow (♩ = 48–50) and lyrical with noticeably shorter phrases; also, the vibraphone's motor is activated, thereby producing a slow tremolo (see Ex. 2).

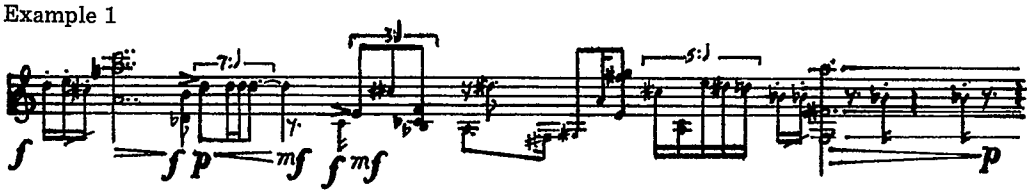
Section C returns to the original tempo; however, the instructions call for all staccato playing (see Ex. 3) and the dynamics remain at pianissimo with the exception of a single crescendo to fortissimo. Section C also recalls some previous material via retrograde technique.

Section (A′B′) returns to the gestural design stated in A and B, respectively, and can be regarded as a quasi-recapitulation in that whole phrases or parts of phrases from these sections are rearranged. This borrowed material, in sections C and (A′B′), is usually presented in retrograde (see Exs. 4, 5, and 6).

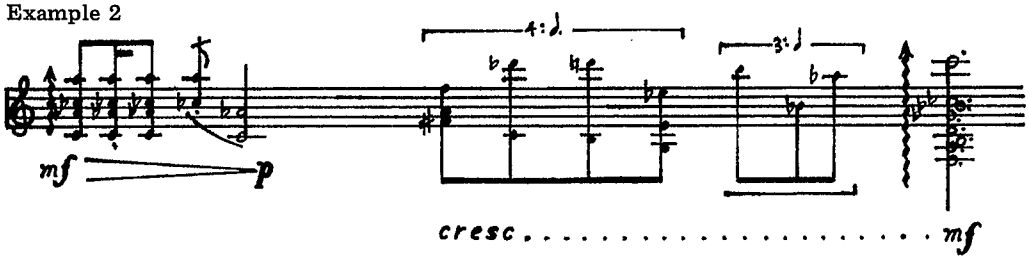
A particularly subtle use of retrograde is found in Ex. 6. Here, the passages are connected on two levels: by retrograde technique (as in Exs. 4 and 5) and by the retention of some of the original succession of pitches. Furthermore, in these recapitulatory passages found here and throughout the series, Smith has preserved, for the most part, the character of the original.

An investigation of the pitch construction throughout the entire "Links" series led continually to the same conclusion, which is that groupings of three are an important consideration in discussing pitch organization. These groupings, realized as either three consecutive pitches or a simultaneity of three pitches, are characterized by the employment of seconds

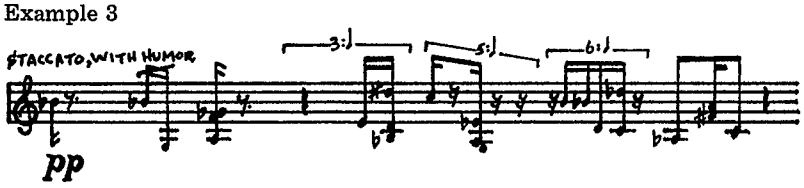
Example 1



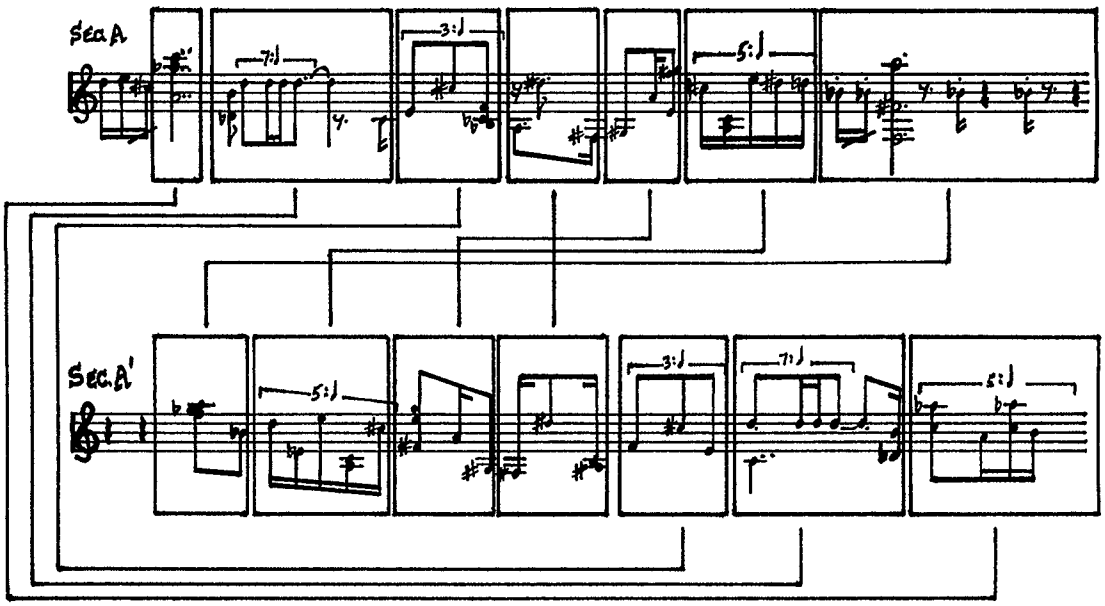
Example 2



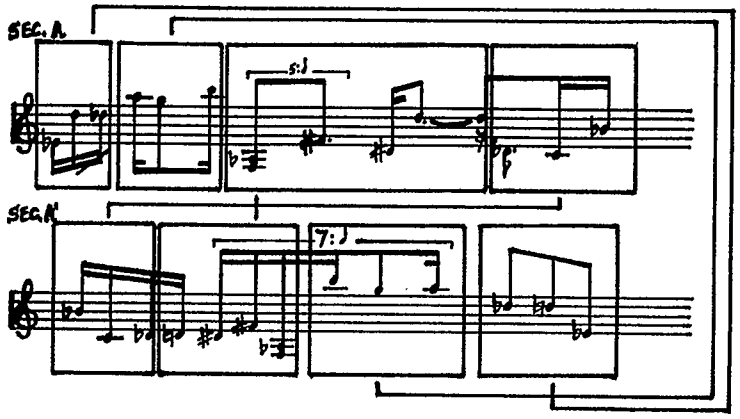
Example 3



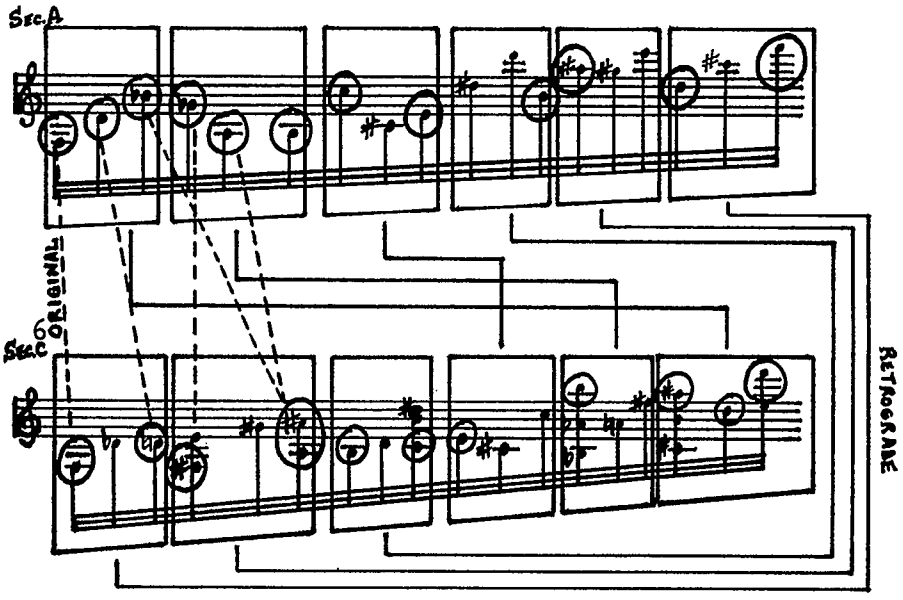
Example 4



Example 5



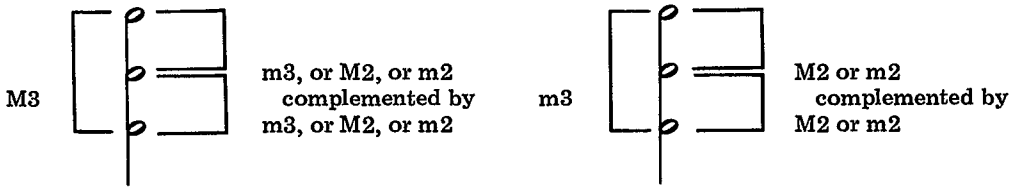
Example 6



and thirds. In further clarification, many of Smith's melodies and simultaneities are initially generated from a basic intervallic design of permutations of major and minor seconds and thirds (see Diagram 2). The composer usually adheres to this plan; however, there are situations where this design is contracted or expanded. The constituents (i.e., M2, m2, M3, and m3) of this basic design are also used independently throughout the work as well.

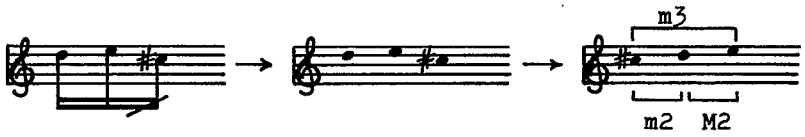
Examples 7 and 8 demonstrate how Smith's melodies and simultaneities are generated from this basic intervallic design—the process functions both horizontally and vertically. (Exs. 7 and 8 are from Ex. 1.)

Diagram 2

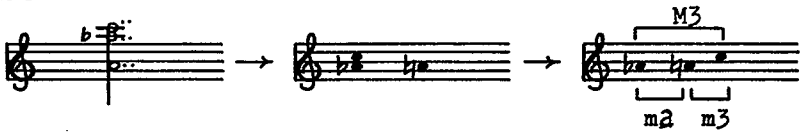


i.e. M3 = (m3, or M2, or m2) + (m3, or M2, or m2);
m3 = (M2 or m2) + (M2 or m2).

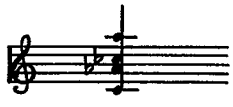
Example 7



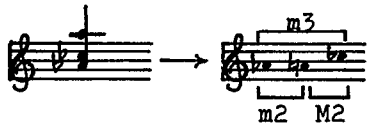
Example 8



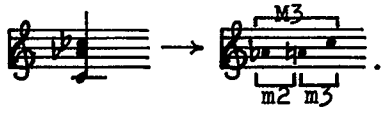
In some cases where there are aggregates of four, five, or more pitches, this system of analysis remains intact. The simultaneity in



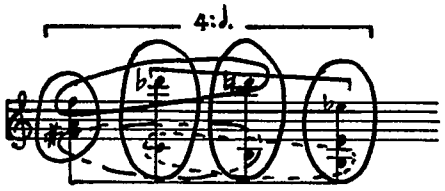
can be examined in the following two ways:



and



Example 9

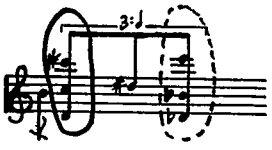


Furthermore, there is another level of interconnections, that is, the simultaneous usage of melodic and harmonic modules. Example 9 (an excerpt taken from Ex. 2) exhibits these characteristics.

The melody and simultaneities (identified by solid lines) illustrate Smith's intervallic structuring. Although the aggregates—D^b, C and D , B—consist of two pitches, their intervallic relationship (i.e., m2 and m3, respectively) with the basic design is retained. An important peripheral consideration in this example occurs in the second half of the melody (brackets). Here, the pitches do not conform to this analytical plan: the characteristic pitch arrangement is by no means common to every melody and simultaneity. If that were so, a monotonous pattern of intervals could result. The chromatic melody, then, confirms Smith's contraction of the basic intervallic design. Conversely, the expansion of the intervallic plan can be seen in the lower melody (broken lines). Separating the line into groupings of three pitches, the initial design has been enlarged to the perfect fifth (i.e., B, C, F#) and the perfect fourth (i.e., G, B, C). These subtle modifications point to yet another level of relationships in the series.

In Example 10, both contraction and expansion of the intervallic design is the primary concern.[8]

Example 10



The first aggregate (solid line) confirms the process of contraction; while, the following simultaneity (broken line) is characteristic of the expansion principle. Here, the design has been extended to the augmented fourth interval (i.e., B^b, D^b, E).

My analysis simply reveals tendencies that occur with some frequency. After many interviews with Stuart Smith, I am reasonably certain that no matter what some arbitrary system *suggests* as the next pitch(es) during the compositional process, the final decision ultimately rests with the composer's ear and intuition. The introduction of additional intervallic structures provides the work with both melodic and harmonic unpredictability. Thus, Smith's procedure for determining pitches is flexible. The basic intervallic design functions as the initial point of generation from which Smith shapes and reworks his melodies and simultaneities. From the formal scheme to Smith's compositional techniques, it will become apparent that flexibility is filtered throughout each layer of the work(s) as well.

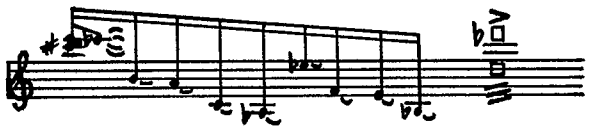
The rhythm in *Links* can be approached in a similar manner: there is the free imitation of certain ". . . rhythmic gestures which are like speech . . . not a 'written-out rubato,' but rather a system of durations divided into discrete steps."[9] Smith often comments on his fascination with listening closely to the inflections, durations, and rhythms of everyday speech, while blocking out the semantic content (an enviable skill in dealing with bureaucrats I'm sure!). No one overriding system is employed; however, there are rhythmic gestures and durational transformations which reoccur throughout *Links:*

(1) grace note(s) to long tones or silences,
(2) repeated pitches (which establish a specific rhythmic identity),
(3) rhythmic augmentation,
(4) rhythmic diminution,
(5) rhythmic inversion, and
(6) similar number of attacks/similar gesture/similar contour.

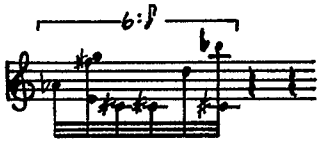
The following examples (Exs. 11-17) identify only a few of these gestures within *Links* (1974):

1) grace note(s) to long tones or silences,

Example 11
Sec. B

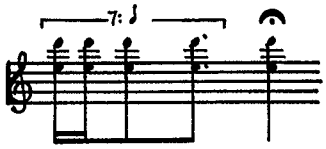


Example 12
Sec. C



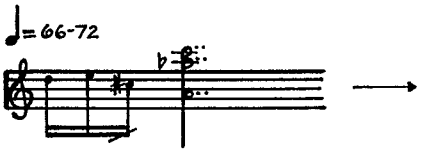
2) repeated pitches (which establish a specific identity),

Example 13
Sec. A′

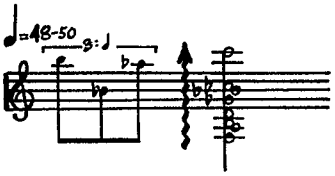


3) rhythmic augmentation,

Example 14
Sec. A

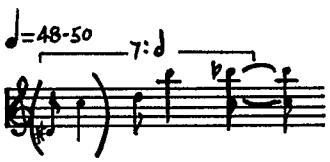


Sec. B

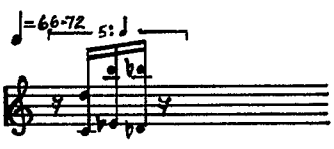


4) rhythmic diminution,

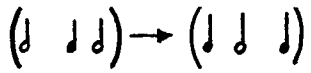
Example 15
Sec. B



Sec. C

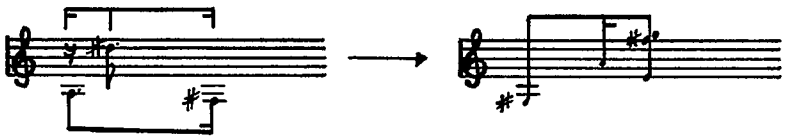


5) rhythmic inversion, and



Example 16

Sec. A Sec. A



6) similar number of attacks/similar gesture/similar contour.

Example 17

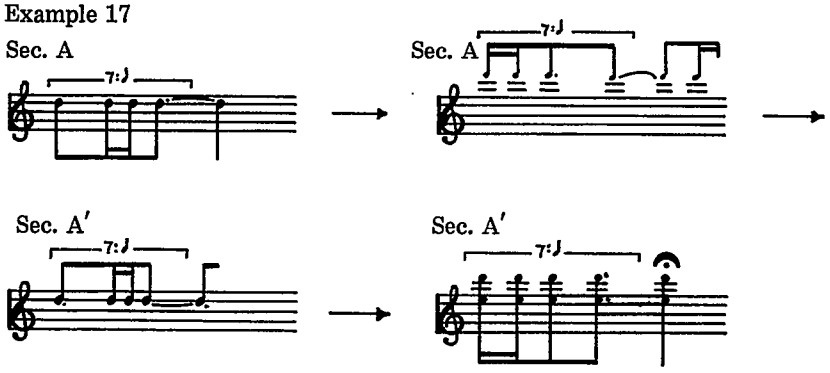
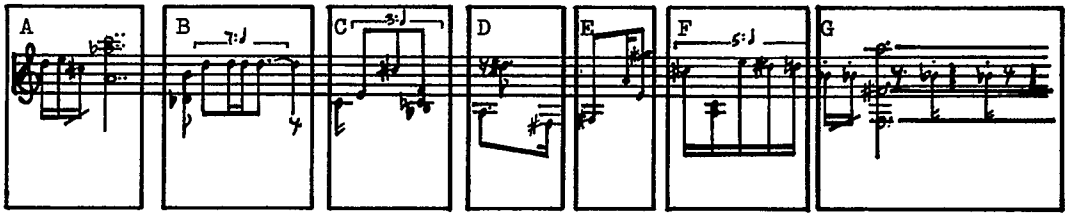


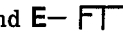
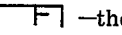
Diagram 3—the opening phrase of *Links* (Ex. 1)—summarizes my analysis with regard to all the previously mentioned compositional techniques employed by Smith. With the information serving as a guide, one should then be able to determine more clearly the composer's method of establishing relationships between the materials throughout the "Links" series.

Diagram 3



Note: The boxing-off in Diagram 3 is purely functional and does not suggest small-dimension phrasing, etc.

Features in diagram 3

	Melodic	Rhythmic
A	Grace notes/three consecutive pitches and simultaneity are generated from basic intervallic design—permutations of major and minor seconds and thirds.	rhythmic gesture 1—grace notes to long tones
B	Three pitches (B, D^b, D) are generated from basic intervallic design.	rhythmic gesture 2—repeated pitches
C	The melody may be divided as follows: (C, E, C#) and (E, C#, F): in either case the basic intervallic design is retained.	rhythmic gesture 1—C acts as a grace note here.
D	During an interview, Smith had informed me that D# was not generated from the basic plan; that is, this tone was produced merely to ornament the melody here. Consequently, it should be performed slightly softer than the surrounding material. D# is structurally significant. The pitch bisects the opening phrase: there are fourteen attacks on either side of this focal point. Since D# should be disregarded in the discussion of melody, melodic overlappings must occur between boxes **C**, **D**, and **E**. Thus, (F, A, F#) and (A, F#, G#) adhere to the basic intervallic design.	
E	The basic intervallic design is present in the melody and in the simultaneity.	Analyzing the resultant rhythms of **D** and **E**—  and  —these are rhythmic inversions; that is, rhythmic gesture 5.
F	I have chosen to divide this quintuplet into two parts: (C#, C, A) basic intervallic design present and (E, D#, D) contraction of the design. If one chooses to extract every other pitch, then (C#, E, D) results: the melodic retrograde of the grace notes in **A**.	**B** and **F** present five attacks each.
G	The triad (A, F#, F) is generated from the basic intervallic design; the melody (B^b, A) employs the m2 interval, thereby confirming its relationship to the basic plan.	rhythmic gesture 2—**B** and **G** contain four repeated pitches each; **G** is also related to **A** via rhythmic gesture 1.

Links No. 2, Links No. 3

It is sufficient to state here that many of the compositional techniques used by Stuart Smith in *Links* (i.e., retrograde technique, pitch construction based on permutations of major and minor seconds and thirds as outlined in the basic intervallic plan, and the use of the six rhythmic gestures) are similar to the processes employed in *Links No. 2* and in *Links No. 3*. The remainder of my paper, therefore, will give a cursory description of *Links No. 2* and *Links No. 3* and discuss the differences among all three pieces.

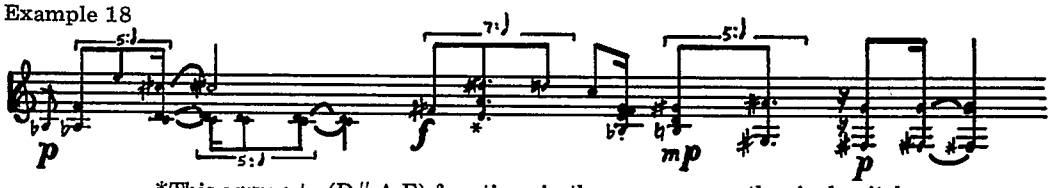
The overall form of *Links No. 2* is A B A'. The A section (♩ = 60), which uses medium tremolo, is very similar to its counterpart in *Links* (i.e., pitch contour and repeated pitches, in particular). (See Exs. 1 and 18.)

Toward the end of the A section, staccato tones are introduced along with those that are pedaled. This is clearly a reference to *Links*, section C (Ex. 3), or more importantly, a development of that material (see Ex. 19).

There is an elision in going to section B with the tempo slowing to ♩ = 30 before reaching B (see Ex. 20). This technique will be used more frequently here and in the final work.

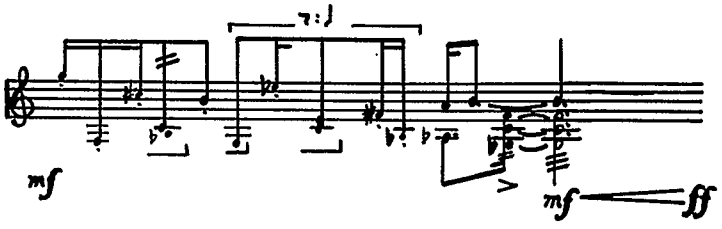
Section B is in sharp contrast to all previous material (from either *Links* or *Links No. 2*) in that B can be characterized as *Fortspinnung-*

Example 18

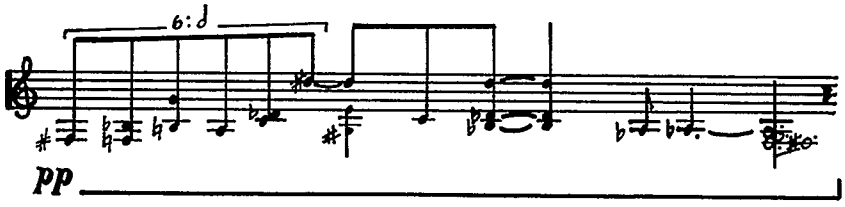


*This aggregate (D#,A,E) functions in the same way as the single pitch (D#) did in *Links*, opening phrase. There are eight attacks on either side of this median.

Example 19



Example 20

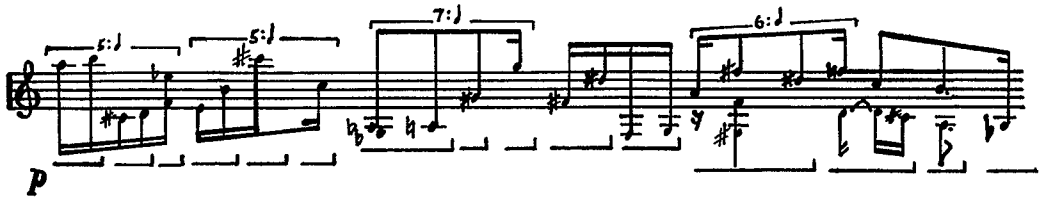


like—that is, a persistent unwinding of a single melodic line. Thus, chordal passages, frequent silences, and the six rhythmic gestures play lesser roles in B than in A and A′ (see Ex. 21).

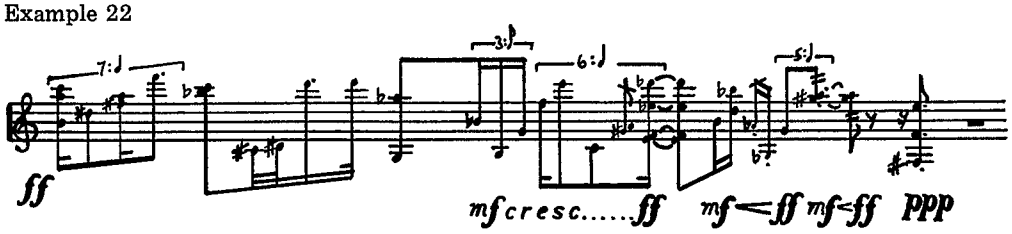
Finally, the form of *Links No. 3* is A B A′ B′ C (A″B″). The A section (♩ = 66–72) is reminiscent of the initial sections in the previous two works; however, elisions, interruptions (usually seen as abrupt changes in dynamics and attacks), and longer silences are given more emphasis (see Ex. 22).

The B section (♩ = 36), characterized by simultaneities performed piano, is crystalline and delicate. A′ (♩ = 72) begins by foreshadowing the C section: soft staccato and loud pedaled attacks alternate. This feature, or interruption, is abandoned quickly in favor of material usually found in the A sections. After B′, this interruption is skillfully expanded into an entire section. C, then, extends A′ and develops the performing technique initiated in *Links*, section C—that is,

Example 21



Example 22



Example 23

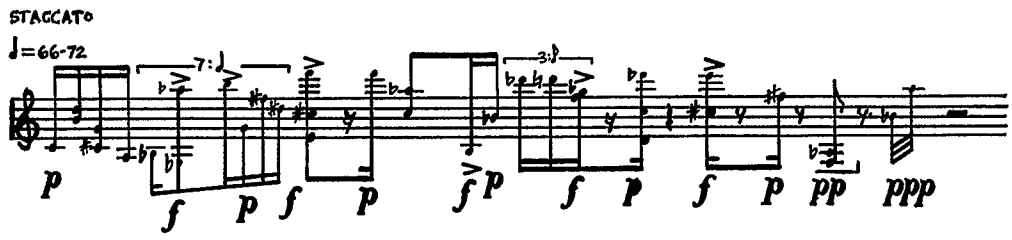


Diagram 4. Similarities and differences in the "Links" series

	Links	Links No. 2	Links No. 3
Formal considerations	A, A′ ♩ = 66-72 no tremolo; little staccato playing; short phrases by virtue of starting/stopping the motion frequently; gradual changes in dynamics	A, A′ ♩ = 60 tremolo; some staccato playing; long phrases; some gradual/some abrupt changes in dynamics	A, A′, A″ ♩ = 66-72 no tremolo; some alternating soft staccato with loud pedaled playing; short phrases; many abrupt changes in dynamics
A sections			
B sections	B, B′ ♩ = 48-50 tremolo; generally pp; chordal/lyrical playing; no interruptions; short phrases	B ♩ = 30 no tremolo; gradual crescendo from pp to f; *Fortspinnung*-like; no interruptions; long phrases	B, B′, B″ ♩ = 36 tremolo in B′ only; generally pp with some f interruptions; chordal/delicate; short phrases
C sections	C ♩ = 66-72 short phrases growing into longer staccato bursts; generally pp	No C section in *Links No. 2*; however some staccato passages exist, usually near the end of a section.	C ♩ = 66-72 predominantly staccato playing; disjunct melodies performed at p with frequent f> interruptions
Special features	few silences well-defined sections concludes with repeated pitches A′ and B′ composed entirely by retrograde technique	more silences some elisions same A′ composed entirely by retrograde technique	frequent silences many elisions same C, A″, and B″ composed entirely by retrograde technique
Pitch considerations	basic intervallic design m3;*M2, m2 M3 or m3 m3, M2, m2 consistently, but flexibly employed	same	same
Rhythmic considerations	consistent, but flexible use of six rhythmic gestures: 1) grace note(s), 2) repeated pitches, 3) rhythmic augmentation 4) rhythmic diminution, 5) rhythmic inversion, and 6) similar gesture.	same	same

*Refer to page 79 for the discussion of pitch organization.

short, staccato bursts are frequently (and irregularly) interrupted by accented-forte attacks (see Ex. 23).

In *Links No. 3*, there is an increased emphasis on silences and on abrupt changes in dynamics and in attacks (i.e., staccato *vs.* pedaled). Furthermore, there is the breakdown of well-defined sections, a feature contrary to *Links* and *Links No. 2*. Smooth transitions are created through the use of elisions (see Ex. 24).

Diagram 4 summarizes the interconnections and differences in the series with regard to (1) form, (2) special features, (3) pitch, and (4) rhythm.

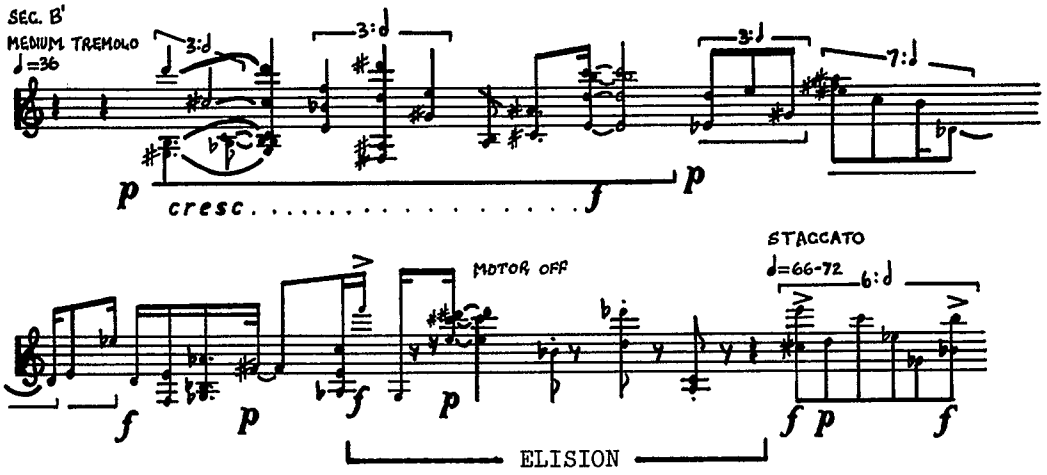
Clearly, the "Links" series demands much dedication and extensive work by the performer. In striving toward a performance, then, the formal scheme must be understood. The compositional techniques used by Smith to delineate large-scale structures (i.e., retrograde technique, elisions, the rhythmic gestures, special use of staccato attacks, abrupt changes in dynamics, etc.) are the vehicle by which the performer must aid the listener in perceiving the formal design throughout the three works. Obviously, tempo and mallet changes[10] and the employment of special tremolo effects will greatly assist the listener as well. The complex rhythms require a thorough comprehension of their construction; one must feel comfortable with varying divisions of the beat.

> . . . 'Links' calls on the performer to move from one stratum of speed and duration to another, rapidly and accurately. This is accomplished by knowing the speeds and durations without 'counting.' I want the performer to develop 'absolute' time.[11]

In clarification of further challenges to the performer, Smith states that:

> The 'Links' series can be performed as (1) a three-movement composition with appropriate silences between movements, (2) all three movements performed *attacca*, one after another, (3) singularly interspersed in a program, or (4) as separate vibe solos.
>
> I was conscious of the body movements necessary to play 'Links.' The corporeal vibe-dance is an important by-product of any performance.

Example 24



The tempo markings indicate the upper limits. For instance, I've heard wonderful performances at ♩ = 60 (instead of ♩ = 72, as marked in the score) while keeping the slower sections proportionally slower. Half-pedaling is *very* risky. Therefore, perform sections marked 'half-pedal' or 'pedal down very slightly' as dry staccato unless the felt is absolutely even.[12]

With the "Links" series, Stuart Smith has created three sensitive and beautiful solos for the vibraphone. His perception regarding the pre-compositional process provides an insight to his work:

> The composer must put himself in an unfamiliar room—a room where all the objects and furniture are unfamiliar. The composer's job is to put this room in order . . .
>
> Balance is my goal . . . this balance is deeply rooted in our center, our core, our middle. [It] . . . must be the *shaping* force.[13]

I believe that this internal checking system, this 'balance,' when considered along with flexibility and keen musical intuition, can act as a catalyst for generating exciting music that is stimulating for the composer, the performer, and the listener.

References

1. Stuart Smith, program notes to *Pinetop* for piano solo (Lingua Press, Ramona, CA, (1981).
2. Smith, *Return and Recall/Initiatives and Reactions—Performance Systems: Studies in the concept of group composition* (Sonic Art Editions, Baltimore, MD, 1978), p. 2.
3. Smith, unpublished interview (Baltimore, MD, 1980).
4. For a partial listing of Stuart Smith's compositions, see Appendix I.
5. *Links* (1974), *Links No. 2* (1975), and *Links No. 3* (1975) are published by Sonic Art Editions, 2617 Gwynndale Ave., Baltimore, MD 21207. All examples are used by permission.
6. Smith suggests the following *ossia* for this particularly demanding passage; that is, the composer recommends ". . . sextuplets or septuplets rather than thirty-second values . . ." according to an unpublished essay by Stuart Smith (Baltimore, MD, June 1980).
7. For analysis, all open-spaced melodies and aggregates are reduced to within the octave.
8. In either grouping pattern (i.e., B, C#, D# or C#, D#, E), the intervallic design is still present in the melody.
9. Smith, interview.
10. In *Links* and *Links No. 3*, hard yarn mallets are used; while the directions in *Links No. 2* indicate medium-hard yarn mallets for A and A′ and medium rubber mallets for B. This symmetry had previously arisen in the discussion on form (see page 87).
11. Stuart Smith, unpublished interview.
12. Smith, performance notes to *Links* (1974).
13. Smith, *ASUC Newsletter* (Fall 1981).

Appendix

The following is a partial listing of Smith's compositions within their respective categories.

Trans-media systems

Return and Recall
(1976-1977) Sonic Art Editions
actors,dancers, mimes, musicians, etc.

Initiatives and Reactions
(1976-1977) Sonic Art Editions
actors, dancers, mimes, musicians, etc.

Many Others
(1980) manuscript
solo actor, solo musician, or film

Quasi-improvisational systems

Here and There
(1972) Sonic Art Editions
short wave radio, piano interior,
any melody instrument

Two for Four
(1972) Sonic Art Editions
percussion quartet

Faces
(1974) Sonic Art Editions
oboe, clarinet

Gifts
(1974) Belwin-Mills
any two instruments and keyboard

Notebook Part I
(1980-1982) manuscript
any instruments

Notebook Part II
(1981-1982) manuscript
solo piano

Traditionally-notated scores

Pinetop
(1976-1977) Lingua Press
solo piano

Flight
(1977-1978) Lingua Press
flute and piano

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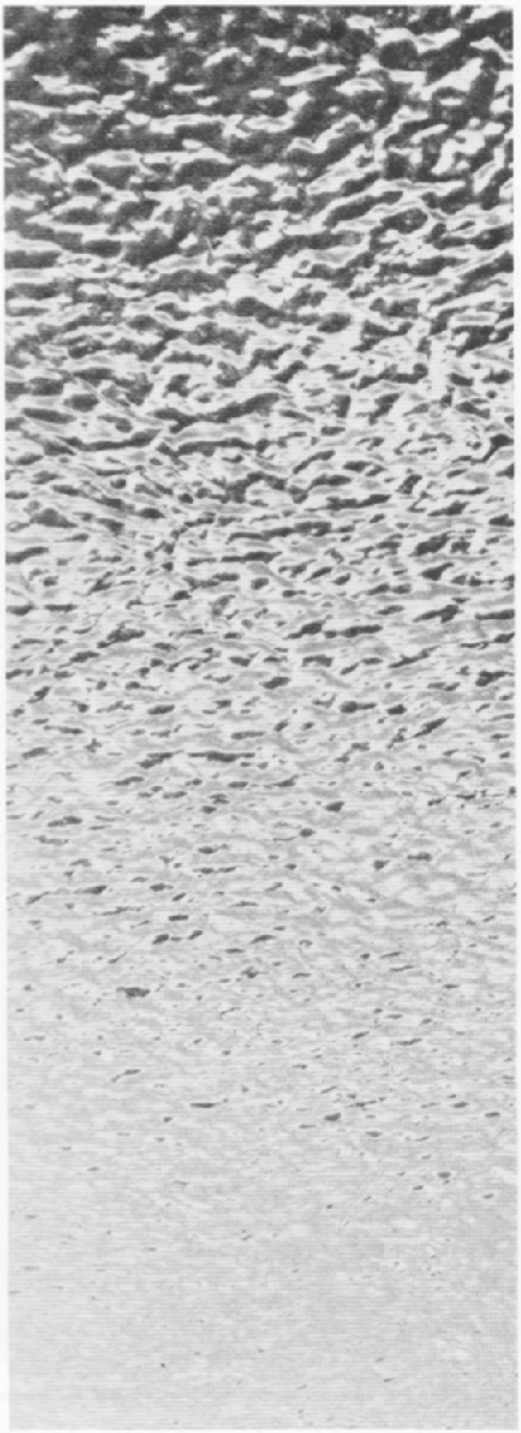

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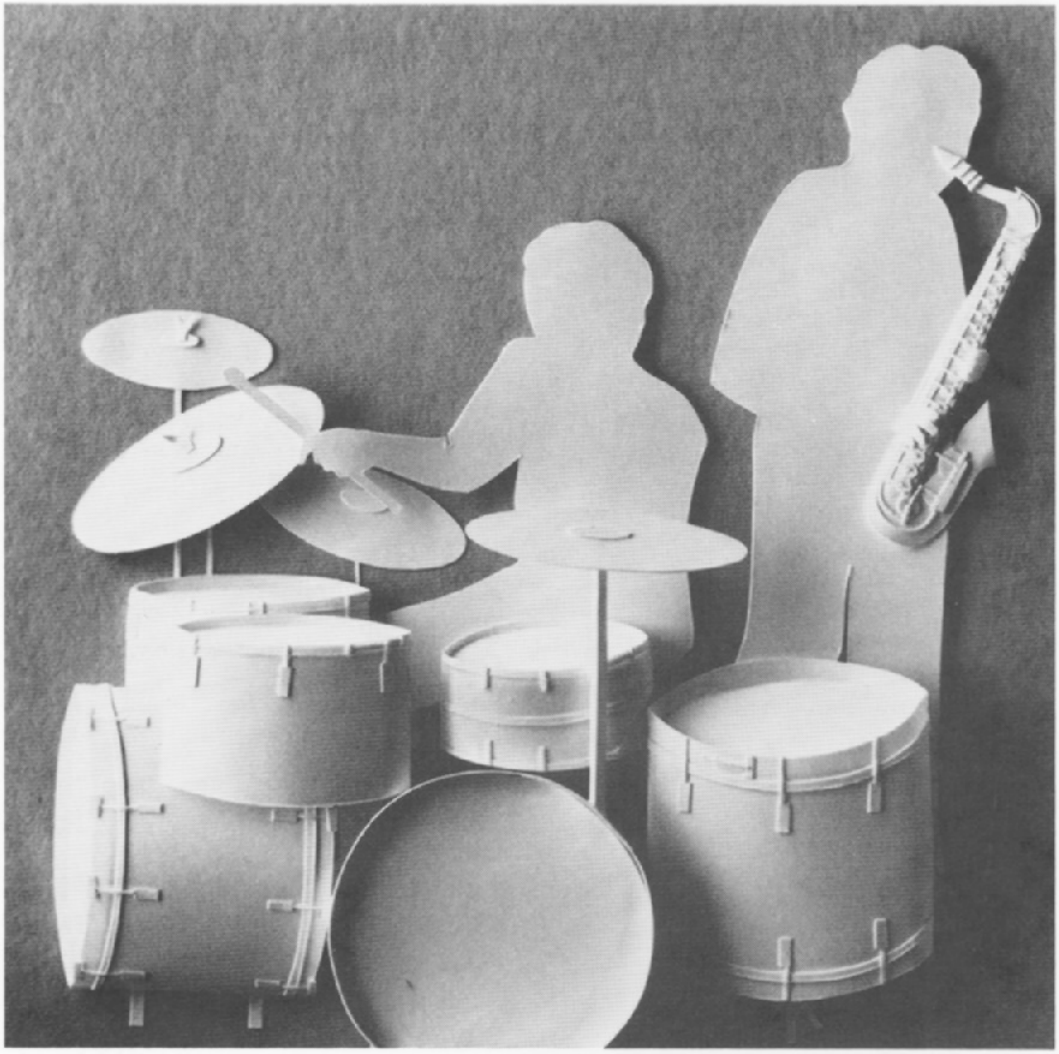
Prizes: The winning composition will receive $500; second place $300; third place $200.

Competition Details: Restrictions—Previously published or commissioned works may not be entered. Difficulty, instrumentation, form, and style are left to the composer's discretion. Required Material—Clean, neat manuscript. (Composer's name may appear, but will be deleted for judging purposes.) All entry copies become the property of PAS. Entry Fee—$10 per composition entered (non-refundable), to be enclosed with entry. Make checks payable to the Percussive Arts Society. Deadline—All entries must be received before June 1, 1983. Send to: **Percussive Arts Society, 214 West Main Street, Box 697, Urbana, Illinois 61801, USA.** The following composers will serve as adjudicators: Thomas Fredrickson, William Kraft, William Albright.



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Percussive Arts Society
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