

Richard Dunlap is committed to both music and painting, and to their independent existences within his oeuvre. In both activities his strong sense of visual composition is paramount. Dunlap's *Air Columns in C and G*, installed last year at the Santa Barbara Museum of Art, was made up of sixteen varying lengths of pipe suspended by wires in front of a wall at angles calculated to produce different pitches when blown into. Its aural capabilities aside, the pipe and wire arrangement combined to make a fine drawing in space.

The ahistoricism and rough logics that nurture many of the other instrument-makers in this exhibition are gently satirized in Bob Wilhite's elegant pieces. Built mostly as part of a series of theatrical ensembles, in collaboration with another Los Angeles artist, Guy de Cointet, Wilhite's instruments sustain attention as modernist sculpture. For the play *Ethiopia*, Wilhite fashioned a cone, cube, and sphere that contained respectively, bass fiddle strings, a player piano suction pump and bagpipe reeds, and a tangle of telephone bells. Wilhite's acknowledgement of the forms of Cézanne was a covert simultaneous tribute to string, wind, and percussion. Within the context of the plays' earnestly nonsensical deliveries, Wilhite's instruments are used as a counterpoint to the actors' voices, and work as a sort of chorus. One particularly interesting piece, a waist-high black cube with a protruding tubular piece, represents a factory — its constant drone activated by human proximity. Here Wilhite proposes sound as locator. Subsequently Wilhite and Cointet collaborated on a large-scale outdoor production seen against the Churrigueresque facade of a building at Cal Tech, where Wilhite sought to cloak human presence by dressing the instrumentalists in black hooded costumes. For this production, *Ramona*, the accompaniment was reduced to a very minimal set of three gongs — a circle, square, and a triangle. Wilhite brought together his entire instrumental output for a concert, dubbed "Chinese Cocktail," at the San Francisco Art Institute, 1978. His latest pieces have been furniture-like painted constructions, reminiscent of Reitveld, which seem to portend a more traditional and exclusively sculptural direction for his future work.

Tom Marioni's various performances have often featured sound components. His drumming on paper, which itself results in a drawing, is directed toward mesmerizing his audience so that he can communicate with them telepathically.

The success of Mike Kelley's carefully scripted and elaborate slapstick pieces depends largely on his incantatory powers. His is a mesmerization using repeated key phrases. Kelley's deductive logic is patently absurd, but by conforming to notions of rational behavior his antics assume wide, metaphorical meaning. So with his props or instruments, such as the "Perspectophone" or the "Moaning Drum." His peculiar inspired combinations of words assume larger than poetic dimensions by Kelley's uninflected droning delivery —

they seem maniacally prophetic. The instruments are similarly uninflected, mostly producing a single sound. In this conjured landscape of flat, aural expanses, every verbal or musical incident becomes singular, unassailable, revelatory.

Anatomically, we are given two relatively easily trained physical media for self-expression, the voice and the hands. Typically the visual arts have relied exclusively on manual facilities. In "Sound" we are confronted with a variety of attempts to multiply the powers of both aural and visual communicators. In its insistent disregard for the traditional boundaries of the arts, the ambition is a relatively new one. But at their best, the results are timeless.

An "ability" to assemble historical substantiation for nearly any position may eventually come to be seen as the common denominator of our period. Painting and sculpture seem to work from an additive model of history, so that with time, successive styles couple onto one another, box-car-like. From outside the discipline, it appears a predeterminism is at work; from inside, the challenge of invention is practically overwhelming. Another view of history might be likened to a cross-section cut. In it, empiricism powers intelligence toward an introspective center. Every artist is taken to be a microcosmic distillation of time, his or her work comparable to a layered section — slices of varying depths from the shared body of self-expression.

Both positions, as well as a good dose of ahistoricism, are present here. All are vital, as the sounds heard and seen in this exhibition attest.

Richard Armstrong

## THE SOUND AND THE THEORY A SHORT HISTORY OF THE ART-MUSIC INTERFACE

The age of specialization is losing its grip on our thinking. As contemporary philosophers and social analysts insist, our world is becoming more and more diversified, multi-experiential, and simultaneous. Phenomena manifest themselves beside, inside, or around one another. Traditional causal logic and all forms of linear, stepwise reasoning and acting have become — well, not obsolete so much as just not enough.

In this burgeoning age of fluidity, artists — always the heralds of social change — have been expanding the range of their own activities. To supplement (not to replace) the traditional media, vanguard artists from all disciplines have been exploring the areas of potential activity existing between these media. As the roster of "traditional" lively arts has been expanded to include industrial-age media — photography, cinema, video — many new intermediate regions are opened for artists to examine. Between dance and film, for instance, choreographers and filmmakers can collaborate or, individually, borrow one another's materials, techniques, and approaches. Painters and poets can join forces to produce illustrated books, or they may share ideas and come up with visual poetry and artists' bookworks. Happenings, performance art, conceptual art, environmental and installation art, documentation art using written texts, photos, movies, TV, and so many other permutations and combinations of the arts already exist as forms of intermedia, not just combining, but serving to fuse, the various arts' heretofore exclusive domains.

Current musical art combines current musical practices with current visual concerns. But it has its origins in earlier attempts to blend the two media. There are numerous examples of creative individuals who, although noted especially for their work in one art form, were proficient in another. Arnold Schoenberg, Austrian inventor of the twelve-tone method of musical composition, painted in the expressionist manner of his artist friends. Erik Satie, musical collaborator with many of the École de Paris greats, was a deft draughtsman and caricaturist. American pioneer experimentalist composer Carl Ruggles took his oils and watercolors seriously. By the same token, such diverse artists as Henri Rousseau, Marcel Duchamp, Kurt Schwitters and the American Synchronist Morgan Russell composed music. Several records have recently appeared featuring interpretations of Duchamp's *Erratum musicale* and the musical version of *The Bride Stripped Bare by Her Bachelors Even*.<sup>1</sup> Schwitters composed several pieces for the piano; more importantly, his *Sonate in Uhrlauten* was designed as a sonata in true classical form, consisting of four movements and including an introduction, a coda, and a fourth-movement cadenza. Markings indicating pitch, tempo, and dynamics run in a column alongside the stanzas. I say "stanzas" because the *Ursonate* is a poem, a fully written-out poem of nonsense words and syllables.

At one point in his career Russell devised a system equating the

twelve tones of the western musical scale with subdivisions of the color wheel. Such a system of color-pitch equivalents typified a tendency in early twentieth century aesthetics, which sought to establish and formalize relationships between the senses and, by extension, the artistic media. The Russian composer Alexander Scriabin was one of many people to build a "color organ" that projected hues when its keys — corresponding to musical notes — were depressed. Thomas Wilfred was another to work on such a machine, and his famous *Lumia Suite* of shifting light projections is programmed in time along musical structures of thematic development. Wassily Kandinsky, for his part, postulated a pitch-color equation that led to his stage play, *The Yellow Sound*.

These experiments in synesthesia influenced the avant-garde movements of the post-Victorian era, but the Futurists, Constructivists, and Dadaists throughout Europe did not seek tables of sensory exchange rates so much as they sought to express their dynamic world views in as complete a range of media as possible. Futurist painter Luigi Russolo built a battery of *intonarumori*, mechanical noisemakers — howlers, cracklers, roars, bubblers, etc. — for which he and others wrote concert scores. The 1912 opera *Victory Over the Sun* blended abstract decor, abstract music and the abstract language called *Zoom*, which Russian Futurist writers and painters had devised. Similarly, the post-revolutionary *Concert for Factory Whistles*, conducted from a rooftop by a man with semaphore flags, was composed by several writers and artists. Dutch composer Jacob van Domselaer conceived of a musical equivalent for the neo-plastic art of his friend Piet Mondrian, and the American "bad boy of music," George Antheil, was a member of Mondrian's group *de Stijl* for a time.

Antheil's piece de scandale, the *Ballet Mecanique* scored for eight pianos, four player pianos, an armada of percussion instruments and an airplane propeller, was written for the soundtrack to Fernand Leger's film of the same name and emulated its ostinato rhythms and cyclic themes. Satie also wrote music for artists' films, specifically Rene Clair's and Francis Picabia's *Entr'acte* which starred, among others, Duchamp and Man Ray. When German-born Dadaist-Surrealist Hans Richter put together his film *Dreams that Money Can Buy* in New York in the 1940s, he solicited scenarios from artists such as Leger, Ray and Duchamp, and music from composers like Darius Milhaud and John Cage.

John Cage is the creative personality from whom most postwar music-art hybrids — and most other kinds of intermedia — generate. He is the outstanding link between the generations of European avant-gardists who experimented in many media and the intermedialists, in America and in Europe, who have grown so spectacularly in number and influence over the last two decades. Cage, a student of Schoenberg's who was influenced by the wry attitudes and works of Satie and Duchamp — and by extensive

study of Oriental religions, notably Zen Buddhism — has associated from the outset of his career with visual artists and dancers more than with other musicians. Cage has long been attracted by visual formats and by the time-space realm occupied by the dance; in turn, artists and dancers have been far more responsive than musicians to the radicality of Cage's experiments. Cage's collaboration with his choreographic counterpart Merce Cunningham goes back over thirty years, and has incorporated the talents of many visual artists, including Robert Rauschenberg, Robert Morris, Frank Stella, and the current artistic director of the Cunningham Dance Company, Jasper Johns.

The group of nonacademic American composers who gathered around Cage in New York in the early 1950s was comprised of people who also preferred the company of artistic coevals. Morton Feldman, Earle Brown, Christian Wolff, David Tudor and the others were on intimate terms with many of the Abstract Expressionists; among Feldman's compositions are ones dedicated to Willem de Kooning, Mark Rothko (the inaugural music for the Rothko Chapel in Houston), Philip Guston, and the late poet, critic and curator Frank O'Hara; while Brown's oeuvre includes a work for percussion quartet that uses a Calder mobile as an instrument and conductor!

It was Brown who, towards the end of 1952, developed a method for notating the kind of nonspecific, indeterminate composition he, Cage, and the others were writing. "My basic background is jazz," says Brown, "Improvisation is a very natural thing for me. I want to activate improvisation in classically-minded musicians, and the less I notate it exactly, the more feedback comes out of the performers." In successive works from his *Folio*, Brown composed without rests, then ran the bar lines together, and, in *December*, 1952, realized a score that did not specify what instruments were to play, what notes were to be played, or how long the notes — and thus the whole piece — was to last. He considered these "values" to be relative, to be decided by the performers and applied to the page of thick and thin vertical and horizontal bars. The resemblance to visual art was no accident in the work of a composer who, in an important essay on form, cites examples and notations by artists and critics, e.g., Jackson Pollock and Lawrence Alloway, but hardly so much as mentions another composer by name!<sup>2</sup>

In the '50s John Cage provided a galvanizing force for other experimental, art-minded musicians like Brown, and as a teacher, inspired a whole younger generation of artistic polymaths. During the later '50s Cage taught a course, ostensibly in composition, at the New School for Social Research in New York. In this class Cage encouraged his students not to be intimidated by traditional divisions between the arts; if a nascent work seemed more like visual art or poetry or dance, that was no reason not to "compose" it. As Happenings artist Al Hansen recalls, Cage "was quite sure that someone who was going to take his course must have studied

some kind of music somewhere before, but no matter how many different hooks he could think of, I didn't fit on any of them. As he began to run out of things, he became more and more delighted and his face began to hang open in the smile that I've come to love so much . . ."<sup>3</sup> By the end of the course, Hansen, who had originally enrolled as a filmmaker following Eisenstein's dictum that "all the art forms meet in the film frame," came to realize "that all art forms do not meet in the film frame, but in the eyeball. In the head of the observer, for better or worse."<sup>4</sup>

Cage's class was attended by painters, poets, dancers, dramatists and even a few musicians. The seeds of Happenings, conceptual art, and most other forms of Intermedia in America were sown in this class. Among those attending were Dick Higgins, the artist-writer-composer who coined the term "intermedia" and championed it with his Something Else Press — America's first artist's-book publisher — in the '60s; Jackson Mac Low, whose performance-poetry includes musical passages; George Brecht, whose conceptual compositions exemplify the wry, restrained intermedia of the FLUXUS aesthetic; and Allan Kaprow, known as the inventor of the Happening. In fact, Kaprow coined the term "Happening" and formulated its multi-art dynamic, not long after attending Cage's class; it was Cage himself who, with David Tudor, Merce Cunningham, Robert Rauschenberg, poet Charles Olson and others, mounted what could be considered the first true Happening, at Black Mountain College in 1952.

In Europe, too, the '50s and early '60s were fertile times for the interaction of art and music. Many artists tried their hands at composing, utilizing especially the tape recorder and other new techniques of electroacoustic music-making. Jean Dubuffet, Karel Appel, Asger Jorn, Yaacov Agam, and Nicholas Schoffer are among the better-known artists who have created their own tape music. Greek-born composer Iannis Xenakis was Le Corbusier's assistant in the designing and building of the Philips Pavilion at the 1958 Brussels World Fair. With the emergence of the nouveaux realistes toward the end of the '50s, music, along with art and literature, enjoyed its first intermedial orientation in Europe. Yves Klein, the most audacious of these "new realists," realized a *Symphonie monotone* — a single note played for ten minutes, followed by ten minutes of silence — which might or might not have stolen a beat (as it were) from Cage's 4'33", the infamous silent piece for piano. The *Symphonie monotone* certainly did prefigure the mantric drones of La Monte Young.

"New realist" music continues in Europe. Mauricio Kagel, an Argentinian living in Germany, has developed a musical performance style which emphasizes exotic devices and often almost vaudevillian sight gags. Italian Giuseppe Chiari performs piano concerts in which he twits conventional concert stylizations by gesticulating, abusing the piano, and otherwise parodying the

histrionic conceits of the recital stage. Joseph Beuys has given "concerts" of extended chanting, lecturing, and manipulation of objects. And so on.

The frequent presence of Cage and his circle in Europe in the late '50s and early '60s was an important factor in maintaining the intermedial nouveau realiste spirit there throughout the succeeding decade. Another factor was the increasingly frequent visits during the '60s of Cage's American legatees. These inheritors, direct and indirect, of Cage's attitudes, coalesced into a loose-knit movement that emerged in New York around 1960. The "new spirit" of this movement received its impetus not only from Cage's students, but from non-New York dancers, writers, filmmakers, artists, and musicians of similar bent. A sizeable group of Californians — including dancers Simone Forti and Yvonne Rainer, artists Walter de Maria and Robert Morris, and musicians La Monte Young and Terry Riley — made their way east, bringing with them the spirit and practice of a multi-artistic community influenced by the ironies and open-minded spirit of Zen. Also participating in the "new spirit" were several expatriate Japanese, veterans or acolytes of the intermedial Japanese Gutai and Ongaku groups. Music, rather than static or physically kinetic art, came to be the *lingua franca* of this movement. But in concerts given at downtown lofts such as Yoko Ono's, at certain uptown galleries, and in their publications, the artists of the new spirit expanded the definition of music to include any action or state that indicated a heightened awareness of the real, unbound by time space. The "score" to Ono's *Wall Piece for Orchestra*, for example, contains one line of verbal instruction:

Hit a wall with your head

Similarly succinct musical works were conceived by Young, whose *Compositions 1960* include a fifth interval "to be held for a very long time"; the instruction "Draw a straight line and follow it"; a little card with a straight line on it; and the statement, "This piece is little whirlpools out in the middle of the ocean."<sup>5</sup> George Brecht's similar card scores (illustrated) are even more devastatingly concise:

CONCERTO FOR CLARINET  
nearby

By the time George Maciunas had begun publishing a similar kind of work under the rubric "FLUXUS," many of its principal practitioners were already moving in other, if related, directions. But the name "FLUXUS," indicating change, mutability, and infinite possibility, came in its aptness to be a handy label for this new mentality. Maciunas (who died last year), Brecht and others have formed to this day a constantly shifting, sometimes almost dormant, but more and more pervasive FLUXUS alliance. Maciunas, Dick Higgins and Alison Knowles brought FLUXUS spirit and practice to Europe in 1962. Like their mentors before them, the Fluxists found far greater responsiveness there than here. For the Europeans'

part, FLUXUS provided not only a name, but something of a unified aesthetic, through which those post-nouveau realistes of similar spirit but divergent method could cooperate.

The Korean Nam June Paik, who had been studying music in Germany, was profoundly influenced by Cage at the turn of the decade. His example opened up Paik's mind to the possibility of action-music, music not as sound but as gesture, wherein destroying a piano is considered to be as valid and effective as playing it (it is playing it) and pouring water over oneself is thought to be as musical as a sonata. Paik's mind broadened enough to include — in fact, to conceive of — the idea of music, or some sort of art, made with television. Paik's subsequent experiments with screen and reception manipulation led him to become the "father of video art," a distinction he continues to live up to with his crazy, entertaining video devices and environments. Paik, who moved to New York in 1964, also continues his involvement with FLUXUS-related music, giving concerts and devising new performance pieces for his equally dogged colleague, cellist Charlotte Moorman. For her part, Moorman has brought intermedia to the masses with her annual Avant-Garde Festivals, held in New York since 1963 and in public spaces — Central Park, the Staten Island Ferry, Shea Stadium, the World Trade Center — since 1966.

The spirit of intermedia propagated by Cage and the FLUXUS artists gave rise during the 1960s to such phenomena as the ONCE Festival, a yearly multimedia presentation at the University of Michigan in Ann Arbor featuring music, film, abstract and dramatic movement, light and kinetic art. Operated by several experimental musicians, the ONCE Festival in turn not only spawned such intermedial groups as the Sonic Arts Union, but contributed to the strobe-lit be-in Zeitgeist of the late '60s. Also later that decade, the boundaries between the avant-garde scenes in music and art in England became increasingly fuzzy with the efforts of Cornelius Cardew, John Tilbury, and other young composers who came increasingly to seek a music that was accessible to nonspecialists, even untrained ones. The indeterminate, nonspecifying formats of FLUXUS compositions seemed to provide a way of bringing students to an understanding of how things can and might work without insisting that things must work that way.

In England, Ann Arbor, and most other places, intermedialists found that the most responsive audiences were not in the conservatories and concert halls, but in the art schools and galleries. It has become a truism of our age that the visual art audience can tolerate experimental formats much more readily than can its musical and literary counterparts. The modular music of Steve Reich and Phil Glass, for instance, pure music but coming directly out of the expanded musical attitudes that informed pre-FLUXUS composers like Young and Riley, attract crowds when played in museums, but send subscription audiences fleeing when Michael Tilson Thomas

or the Metropolitan Opera House mount performances of it.

One result of this open acceptance in the art world of new musical and fused musical-artistic forms is the emergence of musical art of all kinds. Another result is the increasing involvement of galleries and other visual-art support organizations in the promulgation of new music and musical art. The now-defunct Bykert Gallery, for example, was the principal support source of New York's Chatham Square Records, a company that makes the music of Glass and other modular and modular-related composers available on disc. The active or tacit support of galleries continues to support such newly-emerging ventures as 110 Records, the first album which will feature sound works by over a dozen visual artists.

All this activity in New York signals the arrival of musical art as the newest experimental format in this format-hungry city. Like artists in Europe and in California, New York artists have found musicians in their midst and like it that way. Even those artists who do not create their own equally-measured fusion of music and visual art have been utilizing music as supplementary and occasionally alternative modes to their usual visual-tactile output. Vito Acconci finds that the music of turn-of-the-century avant-gardist Charles Ives helps establish the right dramatic tension and irony in his brooding videotapes and ominous installations. Lawrence Weiner has come to include music as one of many elements in his own highly cerebral videotapes and recordings. Joan Jonas' and Julia Heyward's accurate or improvised recollections of childhood songs flavor their performances with a sweet nostalgic tinge. Jacki Apple's present-tense autobiographical environments have begun to include her own popular-style songs. The prolix Art-Language group has issued a recent version of its increasingly Marxist statements and analyses as a record of painfully, but honestly and unadornedly, sung ditties.

Popular, as well as classical or experimental, musical modes have also attracted visual artists. Most confine their involvement to ardent concert attendance — with perhaps a record jacket design here and there (Richard Hamilton's for the Beatles and Rolling Stones come to mind) — but more than a few have taken matters into their own hands, with impressive results. Larry Rivers, Larry Poons, and Walter de Maria all established reputations as accomplished jazz musicians some twenty years ago; more recently, the Artists' Jazz Band from Toronto has featured the sonic skills of Michael Snow. Jim Dine has written and even recorded pop songs in collaboration with fellow painter Rory McEwen and, of course, it was under Andy Warhol's aegis that the Velvet Underground formed in the mid-1960s and went on to change the course of rock music. Many of the Punk/New Wave/No Wave inheritors of the Underground — including some of the conceptually and sonically most innovative — have art studio rather than recording studio training. But this only follows an old pattern in which art students such as Brian Eno,

Peter Townshend, and John Lennon blew their art careers by spending their time playing in rock and roll clubs.

Frequenting art circles has its effects on the lives and outlooks of musicians, too. Jon Gibson and Dickie Landry, two members of Phil Glass's ensemble who are outstanding composer-performers in their own right, have also taken up visual forms. Landry began by making videotapes from his solo performances; more recently, he has produced a series of exquisite drawings on vellum that evolve from video images. Gibson's drawings have evolved structurally from his own solo compositions.

"When I began dealing with music in a very formalistic way, I became interested in my compositions as structure as well as sound," says Gibson. "The visuals are not scores, but represent just one aspect of the musical work, a skeletal image relating to the structure or process."

At first Gibson would present these black and white, geometrically-patterned drawings as slides along with his performances, exploiting their visual resemblance to piano rolls as a way of demonstrating structures to the audience. Now, however, Gibson presents the designs as self-sufficient drawings, and has even produced a suite of silkscreens.

Composers have not only been invading the traditional realm of visual artists, but are reclaiming some of the performance-art area for their own. Connie Beckley, who was studying musicology at Hunter College only two years ago, has for the past several years been creating performances, usually solo, where the elements are kept simple — "I have a strong aversion to sloppiness and clutter" — and dramatically lit, "controlling the environment and directing the audience's attention to the sound and action."

"Many of my works," Beckley attests, "are about determining an orderly process — a momentum which suggests direction — and following through on this momentum with a twist that determines an actual time span."

That twist in each of Beckley's works keeps the audience aware of the piece as an event unfolding in time, not just the predictable, implicitly optional, realization of a concept. For example, in her concert at the Kitchen in New York last March, Beckley presented a work entitled *Showdown*, in which she and a tape recorder faced each other across the length of the space. Beckley and the machine were attached to one another by a rope on a pulley and were brightly spotlighted in a room otherwise dark except for another spot falling on the midpoint between the two. As Beckley walked toward that midpoint, the tape deck was pulled towards it, too; as she and the deck approached each other, her wordless singing descended in a gradual, continuous arc, while the tape of her voice on the machine, originally two octaves lower, ascended. It was obvious that the two would be emitting the same note at the midpoint. But at

the midpoint, just as they reached unison, Beckley stopped singing and a speaker at her point of origin took up where she left off. The spatial position of her voice was suddenly relocated, while Beckley herself, continuing to pull, did not change her relative location.

Christina Kubisch, a German-born musician now living in Milan, has entered the region of performance-art in the last few years, often in collaboration with Italian artist Fabrizio Plessi. Kubisch devised several pieces that combine, often comically, playing conventional instruments with the use of incongruous devices. In her *Emergency Solos*, 1975, Kubisch plays the flute with her hands clad in mittens ("Silent Night"), boxing gloves ("Break"), and thimbles ("It's so Touchy"), as well as playing through a gas mask ("Weekend") and adding an inflatable plastic sausage ("Variations") and a prophylactic ("Erotika") to the end of the flute. Her exploitation of sexual devices continued in the 1975 *Vibrations*, where she applied vibrators to the instruments in a string quartet. This last device reappeared in *Two X Two*, a four-part work Kubisch and Plessi presented throughout Europe in 1977 and 1978. Separated from the audience by a row of eight video monitors, which show close-ups of their actions, Kubisch and Plessi hum through a flute, bring a radio near to and away from a microphone, train a garden hose on a steel drum, and indulge in other burlesque gestures. As funny as these activities are, they bear symbolic import — the four natural elements are represented by the four pieces — and they have been devised to produce new and unusual sounds.

Not surprisingly, sound usually seems to play an important part in the art-performance work of people who are or once were musicians. The solo body works of Charlemagne Palestine relate to his solo piano performances in the demands on his strength and ability to concentrate. They also explore the same principles of overtone and sympathetic resonance that Palestine deals with in his vibrant, thunderous piano concerts: as Palestine walks, or runs about a space, humming with his mouth open, closed, or buried in his hands, he changes the tone and the luster of the note(s).

Jim Burton, who has invented such intriguing musical instruments as the "springed instrument" — an amplified spring struck with a mallet — and who plays with a SoHo-based country band called the Prairie Oysters, recently premiered his vaudeville monologues during a "residency" at the summer arts program in the old Custom House near Battery Park in Manhattan. Although sound is not Burton's principal concern, his sensitivity to sound and sound-producing devices is evident in pieces like his physics lecture, which ends with the old mousetraps-and-ping-pong-balls demonstration of a chain reaction.

William Hellermann, once a composer of nonintermedial electronic music, began to experiment with the sounds produced by the guitar while in residency at the American Academy in Rome. Since his return to New York, Hellermann has given several concerts where

he has built conceptual and theater pieces around the "prepared guitar." Hellermann, perhaps influenced by the meditative, participatory musics of Philip Corner, has also moved into less instrument-oriented performances. Hellermann prompts his spectators to lie on the floor with their heads underneath little umbrellas, and he walks around dropping water on the umbrellas, encouraging everyone to concentrate on the sound.

Other musicians moving into performance-art include John Zorn, jazz musician and creator of the intimate, object-oriented "Theater of Musical Optics," and a loosely-associated group of New Yorkers whose schooling and residency in California in the early '70s exposed them to currents and counter-currents of new musical, artistic, and literary ideas. Jill Kroesen, composer and writer, has created several tightly-conceived but informally-presented theater pieces. Beth Anderson also combines literature with sound in her art, moving into the realm of sound poetry. Peter Gordon, an organizing force behind the SoHo rock orchestra Love of Life, has presented talk-sound pieces as low-key, personal, rambling, and funny — if not as thematically ambitious — as Kroesen's.

Gordon, a versatile musician, has been one of the players in the loose amalgam of instrumentalists — hardly a "band" — that back up Laurie Anderson. Anderson, known for her autobiographically narrative performances, was trained as a classical violinist, and uses the violin in many of her accounts — not like an artworld Henny Youngman, punctuating her monologues with scrapes on the fiddle, but incorporating, even focusing her stories on the instrument. Partly as a result of her increasingly informal association with professional musicians, and partly out of a feeling that she's talked enough about her own life, Anderson has moved into a less personalized area of musical and verbal invention. She has moved into songwriting — her *Songs for Lines/Songs for Waves* all have humorous lyrics pertaining to ethics, aesthetics, and other social phenomena — and her new instrumental inventions have become a preoccupation. These can be as sophisticated as the use of the new Slow Scan Video to generate sounds and images at once. (Slow Scan Video, as Anderson explains, "is a system that doesn't use videotape. The camera looks at something, codes it into sound, and translates this directly into a visual image.") Or, it can be a device as simple as the "tape violin," where the bow is strung with a strip of recording tape and is run across a tape head on the amplified violin which plays the tape backwards and forwards.

The fact that instruments comprise a certain class — in fact several classes — of what might be called "sculpture" has been lost neither on visual artists nor on musicians. The course of instrumental invention in this century has been jarred fortuitously off course by artists' attempts at fabricating sound-producing devices and musicians' attempts to devise new instruments whose physical and

aural presence addresses aesthetic concerns. In the 1930s and '40s the hobo-musician Harry Partch fashioned a whole new orchestra out of carved wood and discarded metal and glass objects in order to perform his music written in a 43-tone (rather than standard 12-tone) scale. The grace, elegance and personalized craft of these instruments lends them sculptural as well as sonic resonance. The ensemble of interactively sonant glass and stainless steel structures that Bernard and Francois Baschet built in France in the early 1960s has justifiably been seen and heard in art galleries far more frequently than in concert halls. Likewise, the wood and metal percussion objects of Lucia Dlugoszewski, the hanging glass "forest" of Anna Lockwood, and the sail-like "steel cellos" of Robert Rutman go back at least a decade.

Like sculptural instruments, sounding sculptures have acquired a pedigree since the Second World War. Frederick Kiesler and Gyora Novak have been among those who exploited the fact that their brass or steel pieces could be struck to produce attractive tones. Until his death last year Harry Bertoia welded clusters of vertical brass rods which emit shimmering clangors when stroked. Many other postwar artists have utilized some form of electrically operated mechanism to include sound in their work. Among the best known of these are Bruce Conner's wall assemblage, *Tick Tock Jelly Clock Cosmotron*, which incorporates a tape recorder, and *Oracle*, the five-part junk sculpture made by Robert Rauschenberg in 1965. Like earlier of Rauschenberg's combines, *Oracle* incorporates environmentally responsive radio cells; unlike the earlier works, *Oracle*'s sound components operate on an elaborate system of feedback triggering. This and other electronically activated devices of Rauschenberg's — many realized in cooperation with Billy Kluver and the Experiments in Art and Technology Foundation in the 1960s — stand halfway between the robot-like music machines, which FLUXUS artist Joe Jones has been fabricating since the early '60s and the sophisticated electronic sound-emission devices that James Seawright, Howard Jones, the Pulsa group at Yale, USCO, and other individuals and groups originally devised in the flurry of art-and-technology research a decade ago.

These days, sound-producing structures combine simplicity and complexity, both technical and conceptual. Bob Wilhite has invented a very simple one-string device — an odd kind of monotone zither — which he has played not in live concert, but in a radio show broadcast from an art gallery. In the last year or so Wilhite has made large geometric sculptures as the sets for performance-plays by Guy de Cointet; when moved or otherwise manipulated, these sculptures produce sounds, and de Cointet has worked these sounds into the continuity of his theater pieces.

David Askevold has created equally odd stringed instruments,

resembling zithers, which are activated by combinations of suspended steel balls and, ideally at least, suspended snakes. David Jacob's *Wah Wah* sculptures inflate and deflate, giving out a wide variety of sounds as they writhe. Jacobs's more sober *Hanging Pieces* provide a limited variety of sound-types, but these rubber pillars, reminiscent of Brancusi's *Endless Column*, are capable of a wide range of tones and overtones.

Stephan von Huene, a California sculptor, has spent the last decade building mechanically complex sculptures — musical machines. These have incorporated organ pipes, player piano parts, vacuum cleaner motors, pneumatic valves, perforated recording tape, photosensitive cells, and, more recently, glass piping. The vertical chambers in each of the five *Totem Tones* through which the air, organ-like, is pumped, have beveled caps at their apertures, and evoke different overtones. In certain of the *Totem Tones* the central, largest chamber also has a membrane containing BBs that provide percussive accompaniment. The simply-named *Drum*, which von Huene built with composer James Tenney in 1975, is an entirely percussive machine. The rotating circular disc contains programs for three of Tenney's compositions, and operates a bellows-driven vacuum motor, which in turn manipulates a circle of mallets poised over a tympanum.

There is a great deal of interest in sonic installation on the west coast, part of an interest in the subtle manipulation of space, light, and time. The most active maker of such soundpieces is probably Los Angeles artist Michael Brewster, who works both indoors and outdoors. For an exhibition April 1977 at New York's Artists Space, he embedded several speakers in the walls of the smaller room and programmed the speakers to emit little clicks in a random but interactive pattern, while in the large room Brewster suspended a single large speaker which emitted a single low (92 Hps) sinusoidal tone. The tone filled the room, not with a uniform drone, but creating pockets of greater and lesser intensity.

Brewster achieved much the same thing in a pedestrian tunnel underneath a road near the beach in San Francisco January 1977. The diffusion of the sound (85 Hps this time) outside beyond the tunnel, however, and the infusion of the whoosh of passing cars and the roar of the surf, modified the sound, depending on the listener's vantage. These and other of Brewster's works do not operate, according to him, from any musical standpoint, rather, he has always been concerned with space. While working with visual pieces, especially scattered light sculptures that functioned like barricade flashers, Brewster found that "you could only see 210° of the activity, no matter how good your vantage was, because of the limits of your vision. Then I realized that you could hear everything." Brewster hooked up the relay of electromagnetic switches to the tuning circuit of his light apparatus and came up with the random clicks, which he calls a "Clicker Drawing."

"Since I began working in this fashion," claims Brewster, "I can hear space — echoes, etc. It's not something I've refined, but it's developing. It's like the sonar acuity that blind people develop."

In New York the pioneer sound-environmentalist has been Max Neuhaus, who evolved towards the installation format after abandoning his career as a percussionist in the middle '60s. Neuhaus created a series of electronic devices that altered sonic input, devices ranging from the transistor-radio-like *Max-Feed* to the telephone works, *Public Supply* and *Telephone Access*. In *Public Supply* callers contributed sounds to a vast polyphony broadcast for several hours over a local radio station, while in *Telephone Access* callers spoke a word into the phone and, moments later, heard that word transformed by the responding mechanism into something entirely different. Neuhaus's more recent, spatial pieces began with the 1967 *Drive-in Music*, described by the composer — er, artist — as "many small, low-powered radio transmitters set up along a mile of roadway, each one transmitting a weather-sensitive sound. Because they were low-power, each one had just a specific area where it could be received. As people drove along, they heard the piece, and depending on how they drove, how fast, whether they stopped, or what the weather conditions were, they had a different sound." *Walkthrough*, installed at a public building in Brooklyn in 1973, was also modified by the weather, which acted upon the patterns of delicate clicks given off by the 22 loudspeakers scattered about the site. In *Water Whistle*, a system of plastic hoses was rigged to a machine that sent water through them at high pressure. Whistles were attached to the hoses; the water pressure activated the whistles, but only in other water. Installed in pools, *Water Whistle* provided a sonic experience that changed in pitch and intensity as each listener swam about.

Other sound-installation artists active in New York are Marvin Torfield and Liz Phillips. Torfield's large, clean structures, shown at the Whitney Museum and Harvard University, serve simply to reflect sound, to cast the sound that viewers-listeners make back at them, or to deflect such sounds — and sounds fed into the structures by the artist — so that they are heard as if the sound source were immediately nearby. Phillips, closer in philosophy and technology to Neuhaus, makes environmental soundworks the patterns of whose electronically generated sounds are activated and modified by the viewers themselves. In *Broken/Unbroken Terracotta*, a piece exhibited at the Kitchen, at the Wadsworth Atholium in Hartford, Connecticut, and at Mills College in Oakland, California, metallic forms, placed on the wall, floor, and ceiling, are hooked into the continuous sound source. These forms are sensitized to human presence, so that nearing or touching them changes the sounds, often rather drastically. This description vastly oversimplifies the sophisticated electronic infrastructure of *Broken/Unbroken Terracotta* — and that piece seems child's play

next to *City Flow*, the work Phillips installed in the street-level plaza of New York's City University Graduate Center in April. This piece, active 24 hours a day, included among its sound sources the amplified sounds of the outside traffic, and it was modified not only by human presences, but by a hook-up to the sonic scanners which read traffic patterns for the New York City Traffic Department.

Phillips describes the work as reflecting "a city in motion, dynamically transforming itself, changing its speed and direction of flow around the clock. An electronic system open to the environment, *City Flow* not only coexists comfortably with its surroundings, but in large measure is carved out of its surroundings, in much the same way a sculptor extracts a shape from a wooden log."

In contrast to these musical presences, presenting sound as an almost physical phenomenon, the scoring of distinctly temporal events remains another means of creating musical art, as well as traditional music. The "look" of the score has become infinitely more varied in the last two decades. The idea of nontraditional, graphically-oriented notation introduced by Earle Brown has now become accepted worldwide, practiced in varying manners by thousands of composers. There have been numerous exhibitions of these often visually striking scores, and many composers employing graphic notation have made the leap from them to outright visual (if usually performable) artwork.

John Cage, pages of whose original manuscripts are sold as artworks, realized a series of plastic panels engraved with cascades of fragmented words and letters. These *Plexigrams*, made with Calvin Sumison as multiples, are dedicated to the memory of Duchamp, but their verbal content is drawn from the writings of Henry David Thoreau. The drawings of that cantankerous American philosopher provided the graphic material for Cage's recent *Renga*, in which he scattered Thoreau's sketches and diagrams across striated horizontal paths and added the merest musical notations. *Renga* was coincidentally seen (at the Museum of Modern Art) and heard (at Avery Fisher Hall) in New York in the winter of 1978.

Austrian composer Roman Haubenstock-Ramati published a suite of lithographs in which a graphic image, its forms vaguely resembling the notes in a traditional score, was subjected to a series of overlaid coloristic and formal permutations. Michel Magne, a Frenchman whose "musique visuelle" — in essence sonic cartoons drawn out on music paper for performance — led him to work with leading French painters in the 1950s and compose the music for over 100 French films (including *Belle du jour* and *La ronde*).

The visual punning that goes on in Magne's "musique visuelle" scores — notes turning into little railroad trains, clouds clotting staves, "neutral zones" demarcated across whole bars — finds

equivalents in the drawings of the younger American composers Tom Johnson and William Hellermann. Johnson often uses his deft renderings of anthropomorphic musical notes to illustrate points made in his columns of music criticism in the *Village Voice*. He has collected some of these drawings in an entertaining volume of *Imaginary Music*. Hellermann, for his part, has exhibited his "eye scores" — and had them performed — in a New York gallery. Painstakingly drawn, Hellermann's "eye scores" make the surreality of the art-music meld explicit in a humorous manner. Sometimes the "eye scores" are sculptural, as in a tray of ersatz ice cubes, pieces of what seem to be musical notes embedded in them, entitled *Music Isn't Melted Architecture*. Harley Gaber, another composer exploring graphic idioms, has exhibited freely-drawn, almost abstract expressionist scores, plus silkscreened images of Schoenberg, over which Gaber jotted numerical configurations relating to the 12-tone compositional system.

An artist who has brought visual art, music, and literature together into an almost seamless *Gesamtkunstwerk* is the English Tom Phillips. Phillips, best known for the impressive range and brilliant wit of his visual work, has also participated since the late 1960s in FLUXUS-oriented musical activity in his country. References to Brahms, Schumann, and other, often rather obscure composers abound in Phillips's paintings, drawings, collages, and prints — as they do in his partly notated, partly graphic, partly conceptual scores. Phillips's *magnum-opus* is an ongoing manipulation of a rather banal late 19th century novel called *A Human Document*. After Phillips's myriad graphic treatments, which serve to obscure most of the words on each page amid pools of vivid color, the text is transformed into *A Humument*, another story told in a fragmented, but ultimately logical, sequential text. Parts of *A Humument* have been further transformed — or, rather, designated — by Phillips as an "opera," called *Irma*.

A musical score that looks like a Mondrian. One-word instructions for concert pieces. A room full of clicking. Rock and country bands in art-performances. Musicians playing sculpture. An artist playing a flute through a gas mask. A fragmentary opera gleaned from the words of a sodden Victorian novel. All these things and more comprise the breadth of contemporary research into the fusion of art and music — a fusion that is as old as the century, but is constantly being rediscovered as a potent alternative to the same old formats, the same old ways of thinking.

The tendency has lately even taken on the trappings of a trend. As with any intermedium, however, the fusion of art and music is not a mere fad; although some artists may move into it and out of it as if it were just another fashion, the implications and potential of this interface are far too great to fade with the waning of a few style-chasers' interest. On all levels of thinking, from the most mechanistically technical to the most abstrusely theoretical, an

intermedium lying between visual art and music just keeps blossoming with promise.

Peter Frank

<sup>1</sup> *The Entire Musical Work of Marcel Duchamp*, ("The Bride Stripped Bare by Her Bachelors Even, Erratum Musical," "Erratum Musical 1913," and "Musical Sculpture") performed by the S.E.M. Ensemble, (Milan: Multhipla Records n.1., 1976).

"The Bride Stripped Bare by Her Bachelors Even, Erratum Musical" (with "27'10.554" for a Percussionist" by John Cage) performed by percussionist Donald Kneack, (New York: Finnadar Records SR 9017, 1977). Side one.

<sup>2</sup> Earle Brown, "On Form in New Music," *Darmstädter Beiträge zur Neuen Musik* X, 1966, pp. 57-69.

<sup>3</sup> Al Hansen, *A Primer of Happenings & Time/Space Art*, (New York: Something Else Press, Inc. 1965), pp. 93-94.

<sup>4</sup> Ibid.

<sup>5</sup> La Monte Young, *An Anthology*, La Monte Young, ed., (New York: n.p., 1963).

<sup>6</sup> Max Neuhaus, In conversation with Hittner, (Amy. n. p., 1973).

## XENHARMONICS: EXPLORING MICROTONAL RESOURCES

This story made the rounds of Hollywood a few years ago:

"Do you like modern music?"

"Well maybe — but it won't ever take the place of the old-fashioned earache!"

Sometimes the pop bands scare people by playing so loud, and a few of the more serious avant-gardists have used painfully loud sounds on occasion. That's one way of trying to extend the musical vocabulary — go the limit in both soft and loud — but that limit is soon reached. Nothing new about that, really: Liszt was famous for breaking piano strings and hammers in public. I got myself a pair of potent earmuffs disguised as headphones, for such emergencies.

For most of the 20th Century, *atonality* has been the accepted method for musical explorers. As all the chords and patterns within the classical harmony and key-system were used up, composers sought ever more pungent dissonances, finally reaching the tone-clusters — whole fistfuls of adjacent piano-keys — of Cowell and others. With myriads of composers exploring every nook and cranny of the conventional musical field for centuries, it became more and more difficult to find something that had not been done before while still obeying the classical rules of harmony and counterpoint.

Schoenberg and his successors, concerned lest total abandonment of those rules lead to chaos and anarchy, tried to invent Systems, which would impose new kinds of form and order upon the music. Unfortunately, the structure and order imposed by such systems as 12-tone Serialism is far more evident to the reader of the printed score than it is to listeners of the actual sounds of performing such a score. Each interval or combination of musical tones has a smooth or rough resultant wave-pattern in the air, which we hear as consonance or dissonance or something in between, and any system that ignores the physical facts is going to be less expressive and more limited in its vocabulary.

It is easy enough to write serial 12-tone music that *looks* novel, but very difficult indeed to write some which *sounds* different enough to be worth all the trouble. For one thing, it is necessary to avoid all the patterns of conventional "tonal" music, i.e. the harmonies of the usual key-system, as much as possible. This restricts the emotional range, making some critics refer to serialism and other premeditated atonality as "music in cold blood."

One way to escape this impasse would be to go in for unpitched and indefinitely-pitched sounds: the noise-music of the Futurists and the variegated effects in *musique concrète*, the old and new percussions of the present day, and new electronic resources of this genre. Some effective pieces of this kind have been done lately.

But I mentioned "microtones" at the beginning, and now I referred

to *twelve-tone* atonality and serialism. What's 12 got to do with it? All down through the years, people have told me: "I thought there were 8 tones in an octave — doesn't 'octave' mean 'eight'?" Then someone else will say: "Aren't there *seven* notes in the scale: do re mi fa sol la ti?" So when I try to tell them about the 12 pitch-classes in ordinary music and the 12 as 7 white and 5 black keys on the keyboard and 12 frets per octave on guitars, they get confused and seldom wait to hear me out. Even professional musicians usually believe that the 12-tone equally-tempered scale is the *ONLY* equal temperament there is. So much serious misinformation is taught on that subject that I despair of ever setting it right.

Nevertheless, before I can tell you anything about non-twelve-tone music I have to explain: *Why* twelve? Bluntly, because it's cheaper. Twelve pitches per octave is the least expensive and least complicated tuning-system that can furnish tolerable music on certain conventional instruments. On the organ keyboard, every interval except the octave (yes, octave does mean 8 — 8 inclusively-counted degrees on the staff or 8 successive white keys on the keyboard; and this originated as an aid to singing) is out of tune. On the piano keyboard, even the octaves themselves are slightly stretched, because of the nature of piano strings. "Tempered" might almost be respelled as "tampered with" — to make-do with only 12 pitches per octave, one must distort the ratios of the musical intervals from their ideal theoretical values.

Inevitably, these distorted intervals (the major third such as C to E, and the major sixth such as C to A on the piano are too sharp) create an overall general effect of restlessness and harshness. This is to some extent subconscious, and the piano has evolved in such a way as to conceal it partially — the tones die away; and one instinctively plays fast to help conceal it. On the organ one pulls out the tremulant stop to cover it up. Why have we put up with the 12-tone system for over two centuries? (1) Back in the old days, composers had not mined it to exhaustion — there was room then for everybody to do his or her own thing. (2) For almost 200 years, the piano has been the principal instrument, and it is not practicable to make piano actions any narrower (to squeeze more notes into an octave) than they are already — the hammers etc. would be too flimsy. Furthermore, the design of the piano had to be frozen in order to affordably manufacture them in quantity. (3) Piano and organ tuners learn a stereotyped routine that is difficult to acquire, and they would almost all refuse to learn more routines to tune other systems. (4) Manufacturers and engineers and teachers and tuners are never told why the 12-tone system is standard, and they wouldn't care anyway! What a composer might want to try, cannot prevail against such a hidebound Establishment.

Just recently, all that has changed. Electronic organs and synthesizers do not have the piano's mechanical limitations. Guitars can be fretted to other scales at nominal cost. All kinds of electronic