PATHWAYS FROM THE DREAM SPELL SERIES

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ABSTRACT: "Pathways", the musical score for an audience-interactive sculpture-and-sound installation, is an essay in sonic movement. Not only does the sculpture define the structural context within which the score functions but the movement of the audience within the sculptural space provides the choreographic analog to the score's spatial movement. This paper reviews the historical development of such interactive space consciousness; discusses the interaction of computer-generated material with analog and concrete sounds, dictated in this case by the site-specific nature of the sculpture, and describes the design of the sound system, embedded within the sculpture itself, that provides the choreographic movement of sound in space.

The manipulation of musical space, the placement and movement of sound in relation to the listener, is hardly a new concept in music. Composers since the Clapiers and before have been concerned with space, literal physical space, as an element of musical expression. This concern was an important textual element in early Baroque instrumental music and has continued to be a component of organ music of subsequent periods, even finding its way occasionally into the 19th century orchestral repertoire, usually as a programmatic element; viz. the shepherd pipes in the pastorale of the Symphonie Fantastique, the off-stage position in Mahler's 3rd, and of course the trumpet call in the Leoncari No. 3.

It was not until the early 20th century however that the placement of sound in space became a consciously manipulable parameter of the musical expression, much as texture and dynamics in the hands of the early serialists became as independent elements of the musical language through which they composers spoke. Ives' The Unanswered Question comes immediately to mind, in which the principles of spatial conflict that underlay such pieces as Tristan's Camp and The Horseman at Stockbridge became explicit. Subsequent generations of composers have embellished upon these Ivesian principles. Henry Brant in his early works; George Crumb's Echoes of Time and the River; Carter's Symphony for Three Orchestras, among a number of works.

Spatial manipulation was virtually gauged upon the original electronic composers by the specifically directional nature of the medium. Those four (or often only two) loudspeakers were the major limiting and, if you will, dehumanizing aspects of early electronic music. As a result, almost since the development of quadrrophonic and multiphonic sound electronic composers have endeavored to turn the staticness of the loudspeaker to their expressive advantage by moving the musical image from speaker to speaker and from space to space. At the very dawn of the electronic era, which was actually not so very long ago, well within the life span of many composers now active within the medium, composers such as the late Vladimir Ussachevsky and Otto Lohning were exploiting the possibilities of directionality. Mario Davidovsky's six Symphonien make extensive use of directional counterpoint. A piece of mine entitled Twelve Short Movements for String Quartet and Tape moves the sound through a quadraphonic field while the live performers shift through various contrapuntally determined positions on the stage, all controlled by permutations of the same row that organizes the pitch selection of the piece.

In the area of multi-media, undoubtedly the most spectacular and probably the most influential single work is the From Electronic of Edgar Varne and LeCorbusier. Scored for 400 loudspeakers embedded in the surface of the pavement that Corbus designed for the Philips Corporation at the 1958 Brussels Worlds Fair, this piece was one of the landmarks of the emerging multi-media revolution and indeed one of the revolutionary composite works of the ICME GLASGOW 1990 PROCEEDINGS
The one dimension lacking in Varese’s and Corbu’s conception, and there may of course be other dimensions yet to be discovered, was perhaps the most intimate of all movements in art, the movement of the viewer and listener within the creative field established by the artist. Anyone who has recently passed through the United Air Lines terminal in the O’Hare Airport in Chicago, USA, will realize that even this threshold has now not only been passed but has passed into the area of popular culture. O’Hare’s underground concourse, longer than several football fields, has been turned into a ‘space-age’ tunnel of moving sound and light. As passengers ride the 800-foot moving sidewalk a neon light sculpture by Michael Hayden swears about them, complemented by a computerized musical score of William Kraft which moves, sometimes in consort with the visual images and sometimes in random configurations of its own. And of course all the while the audience of travelers is moving from one overbooked flight to another at its own speed and in its own various directions, thus creating its own counterpoint to the moving sights and sounds of which it is itself a part.

‘Pathways from the Dream Spell Series’, the specific topic of this paper, takes these works, and the tradition they have established, as its point of departure. ‘Pathways’ is a sound-and-sculpture installation undertaken in collaboration with the Chicago sculptor Sherry Healy, and first displayed at the Chicago International Arts Exposition at Navy Pier in the spring of 1987. ‘Pathways’ is a work in which the movement of sound, and the complementary movement of the viewer/listener within the sound space, is central to the very conception of the work. The sculpture itself is enormous, 17’ high by 9’ wide and up to 70’ long depending on the particular installation. It is by its nature a walk-through piece which the viewer can enter at any point and move freely within. It is literally a series of pathways that the viewer creates as he or she moves within the space that the sculpture encloses. The electronic score serves as a musical analog to this movement, sweeping back and forth through the length and breadth of the structure and surrounding the listener with moving sound as he or she is surrounded by, and moves within, the sculpture itself. The score is projected through a series of four four-way speakers embedded within the long wooden structural beams so as to be virtually invisible. The music seems to emanate from the structure itself, as if the sculpture were in fact the musical instrument being played, with the music moving as the viewer moves, approaching and backing away, constantly changing in response to his or her position in movement within the structure.

The particular collaboration that brought ‘Pathways’ into being was carried out over a considerable geographical distance, with the sculptor working in Chicago and the composer a half-continent away in Massachusetts. It is one of the closer and more continuous artistic contacts that is more normal to collaborative ventures, the two artists in this case worked independently but from a pre-arranged scenario, literally a written scenario that pre-dated work on either the sculpture or the musical score. Therefore although the artists were not reacting to one another’s creative activities in the more normal collaborative sense they were at least basing their separate creative approaches on the same shared vision, a program formulated significantly enough in a third and entirely different mode of artistic expression, that of words. This scenario, this vision, a private one that only the two artists shared, was drawn from a dream sequence, hence the title, ‘Pathways from the Dream Spell Series’, a recurrent archetypical dream of loss and loneliness that all of us share at one time or another in the dark recesses of the night.

In one sense therefore, the underlying concept of the score of ‘Pathways’, with its adherence to a pre-established literary program, was simply an electronically updated version of the 19th century tone poem, Till Eulenspiegel if you will, for multi-channel tape. However, by the nature of the sculpture, and by the way in which sculpture in general is displayed, the ‘Pathways’ score had to be considerably more complicated in concept than that. For one thing, since the sculpture was to be on display eight hours a day, seven days a week, and since it was designed to be viewed and listened to at the leisure of the viewer and listener, the musical score had to be conceived in such a way that the viewer could arrive and begin listening at any time in the progress of the piece, stay as long as he or she wanted, and listen and look, for that
matter, with as much or as little attention as he or she was prepared to give. This meant that the piece could not have a genuine beginning or end. It had to start whenever the listener entered the sculpture and end whenever he or she left. There had to be a constant development without any exposition or recapitulation; the last note of one repetition had to be, at the same time, the first note of another, and it also had to be the middle note if the listener happened to start listening at a different point in the piece. It was like setting Finnegans Wake to music.

For technical reasons the piece could not be longer than 22 1/2 minutes, which was the longest tape then available at the speed and quality that I wanted. After the work simply repeated itself. But I assumed that no one would stay within the structure for that long and even if anyone did the repetition of materials would not be apparent until after two or three hearings. As it turned out, at Navy Pier, the only place where I actually saw "Pathways" in full operation, a number of people stayed for as long as an hour or so to view and listen to the piece. One group even camped for the afternoon by one of the speakers, sitting on the ground propped up against the long wooden beams that formed the legs of the structure, listening quietly to the score. This of course completely compromised the concept of the work as a continuous on-going movement, but I would not trade for anything the experience of watching people listen in this way and with this concentration to my music.

It had originally been intended that the score would be played off-site through a four-track cassette deck with automatic rewind, so that when the score reached its end it would automatically go back to the beginning and start over again. (Parenthetically, I had hoped to find a four-track deck that would reverse directions, playing from beginning to end and then from the end back to the beginning the way some car decks do, but this would have effectively required an eight-track cassette head, which at that time had not been developed, although now of course it has.) Several manufacturers were marketing a four-track deck with rewind, but the fastest rewind cycle, with a 22 1/2 minute tape, was a minute and forty seconds, which meant a minute and forty seconds of silence during the re-wind, which in turn meant that the whole design of the piece as a continuing development, without beginning or end, would have to be scrapped. As an alternative I ultimately laid down a stereo tape of synthesized wind sounds, continuously oscillating from speaker to speaker and recorded on an endless-reel tape of the sort one uses on an answering machine, playing this continuously under the entire piece with it becoming the filler during the one minute and forty second rewind cycle of the main tape.

The electronic score of "Pathways" was realized in the Electronic and Computer Music Studies of the University of Massachusetts, USA. The basic sound generating equipment included a Yamaha DX7 and DX7II FD, an Ensoniq Mirage sampler and a Moog 14 and 45 analog synthesizer. But all of these sounds were extensively modified in one way or another by both analog and digital means. The mastering decks were an Otari 8-track, a Teac 4-track and two Scully 4-tracks equipped with variable-speed capstans so as to accommodate extensive tape echoing. Other processing equipment included a Korg digital delay, a 360 Systems stereo reverberator, a Bode analog frequency shifter, and an AAR 16-position analog sequencer. The entire process was controlled by two computers, an IBM PC and an Apple IIe running the Passport Master Track sequencer and the DX Pro editor/librarian.