

MUMMA: I had in mind, when Carlton Gamer wrote me some months ago, to play a piece instead of talk; due to a problem with global services, air freight, and shipment of equipment from my last performance situation, what I was going to do is not here, so you'll have to listen to me talk.

I'm primarily a musical performer and composer; I work with Alvin and with quite a number of other people in the business of composing and performing music, and I'm only occasionally lured into the academic world on a pedagogical basis. And involved in the process of live electronic music is something which presently at least distinguishes live electronic music people from those who work in the studios, which is that except for certain aspects of the commercial world of music, rock groups and the like, there's no particular standardization of equipment which is available for musicians. One can buy a baritone sax or an electric guitar with fuzz tone but that's about the limit of the standardization. You work in the studio, you have the choice not only of standardized tape equipment and individual equipment, but now of course several different types synthesizers. In the live field, in opposition, besides what I've mentioned, one is left to invent one's own instruments. That will probably change, partly because a number of people like Bob Moog are very interested in live performance—after all, a great bit of his reputation has come from the use of his equipment by rock groups and live performers—and he's in the process, as are other people, of making their equipment more usable outside the studio on a real time basis.

My own motivation comes from my origin as a musician, a French Horn player, and a reasonable amateur pianist. It's something that I've always enjoyed doing, and with the people with whom I work in the Sonic Arts Union, Alvin Lucier, Robert Ashley, David Behrman. Our origins are very largely as performers and composers.

I build my own equipment and instruments, a skill which is not so formidable but which took me quite a bit of time to develop because my origins were not electronic. May I assure any of you who are interested that it's much easier and quicker to do it than I did, that the technology of electronics is a very accessible area. Any of you who are intimidated by the approaches that you encounter in seminars and the like should take heart; there are people with much less talent than myself doing very remarkable things in the design of their own equipment.

I've done two pieces in the last two years that I want to mention because they are somewhat relevant to things that have been discussed here. The first is a work many of you perhaps know from having heard me perform it live; it's what I had intended to perform here, a work called *Hornpipe*. It's for solo French horn with a small, very special purpose, single function analog computer which I wear. It's a grey metal box with just a few controls, about 3 by 4 by 6 inches, and I wear it because it's easier for me to move around when I play the instrument. It's designed for that piece; it's part of the piece. If there were a score distributed—that is, if it were my intention to have other horn players play the piece—I would either publish the circuit diagram or rent the box and the umbilical which goes with it to a stereophonic system. It's absolutely live; there's no use of tape whatever. I have no feeling one way or the other about the use of tape; it's just the nature of this particular piece.

The other piece is a more recent departure for me; it involves the use of a digital computer. It is called *Conspiracy 8*: the reference to the Chicago trial is on many levels. The work involves an ensemble of performers who bring to the performance whatever is their own thing. The continuity, the interrelationship of the performers, be they musicians or whatever, is determined by an interaction among them and by the inclusion, as one of the performing personalities, of a computer. The computer communicates with the performers in both directions in the same sense as if it were a real person. It is programmed according to whatever program is available; no particular digital computer is necessary, except that it has to

have enough storage to carry the kind of instruction program and responses that are necessary. The two times that I've done the piece we used a relatively small computer, the PDP 6 at MIT. What interested me about that particular computer, as about many computers, is that they're all very different in personality. The programs, the languages which are used with them, all contribute a very interesting social color and difference; I was able to consider the computer very much like another person in the ensemble. It was an artificial intelligence, but one with a real personality.

I have no use for these works other than as a performance activity, something to involve musical performance of a performance of any kind. In the case of *Conspiracy 8*, an ensemble of up to eight performers; in the case of *Hornpipe*, a solo work, simply myself. I don't generally distribute the works for publication, simply because my income is derived as a performer of my own work. Someone asked a question yesterday about royalties for works that are hard to notate, implying that one could earn a living on that basis; I don't really know anybody who does, and I've long given up the idea. So the works are for me a kind of personal performance experience. This is to some extent true of the other members of the Sonic Arts group; Alvin will discuss a bit about that, perhaps in reference to his own work.

I have no philosophical commitments to any particular procedure except the usability and the practicality and the pragmatic demonstration for myself that a piece works, including the equipment, including the instruments, including my own abilities as a performer, and the music is used in various ways, according to how the audience, if any, are interested. I'll play just a very short part of *Hornpipe*; it's done right from a recording session, so the tape represents exactly what happens.

Hornpipe involves interaction between the acoustics of the hall, the pitches that I play upon the French horn by various means, and the electronic circuitry. The section that you heard actually demonstrates fairly well an aspect of the responsive characteristics of the electronic circuitry: I'm able to actually resonate sections of the circuitry as well as the hall according to what I play upon the horn.

APPLETON: Alvin Lucier is going to play a ten minute piece and he's going to talk about it first.

LUCIER: I want to talk about a piece that I wrote in 1968. I was interested in spaces . . . you play in a concert hall, and it's not the same in the next concert hall. I was interested in that,

and I was also interested in paying my respects to those animals who live and work in the dark, who over a long period of time have had to develop an extraordinary facility in audio and have to get around by sound information. And I as a composer wanted to get in on this facility, I wanted to find out about it, because we're amateurs compared to them. So I designed a piece in which sound gets sent out into the environment and you read the echo that comes back, which carries information about the environment. In the piece I don't care one iota what goes out, I don't compose what goes out, because it doesn't help what comes back. To make a rhythm, phrasing, speeding up, slowing down, changes in amplitude, doesn't help at all. What goes out has to be very plain, because all you're interested in is what comes back. I deploy the performers in a dark space; there are no musical instruments here. I set them a goal, to move to a certain point; the only way they can do that is to hear the echoes that come back and avoid obstacles. If they do the task precisely, two things happen: my piece works (and I'm always pleased with it!) and, if the space is an interesting one, the other thing is that the audience gets an audio photograph of the space. I've done this piece a lot; I never forget a space that I was in during a performance—it's like a photograph. You can have a lot of players, but the trouble is that if they are all on at the same time, no player can tell which echo is his own, so he stops, he's unable to move. Therefore the starts and stops are built into the doing of the task—it is a task, you see.

Now from that idea I was interested in—you are in a room, right? you move to another. We moved into this apartment, and I found myself in a room that I hadn't been in before. Your voice isn't the same in one room and another, you get a feeling about a room: you're in a good room, you talk a lot. I talked for a long time on one particular room, and I always used to stand in the same particular place, because the echo situation made my voice sound very strong and authoritative. I noticed also in my office when I would walk around the echoes that were generated from my footsteps gave me a pitch between A and A^b right outside my office. Then I had to go to Japan and program a big piece for Expo, so I thought I'd try to do something like that but with speech, and I also got interested in the reverse process. By putting earphones on somebody and having him talk and delaying the sound that comes back you can force a person to have a speech problem. And I'm interested in that because I do have a speech problem. So I changed that around and I did a piece with about sixteen tape delays in which I start to speak—I talk about very intimate things to open myself up to the audience (of course it makes you anxious to talk about your

life in front of someone you know). The delays would start and, sooner, or later, since I wasn't retaking in the meaning of what I was saying, and these speech delays were going on all around the auditorium, I could read pages without any particular problem, and that helped me.

At Expo I discovered a principle which you all probably know, and that is if you send a sound again and again back into an environment, sooner or later the resonant frequencies of the space will enforce themselves and take over. So one night I stayed up and I talked and taped myself, rewound the tape, played it back and tape-recorded that, rewound that, played it back and tape-recorded that, many times. Sooner or later, after maybe the fifth or sixth time, your speech no longer is even there; you hear only the resonant frequencies. I thought this was a very nice thing, so I made a piece out of it.¹

APPLETON: Are there any questions for Alvin and Gordon?

DONALD MACINNIS: Alvin, when you re-recorded these patterns, did you use an endless tape cartridge or did you reload the tape?

LUCIER: No, I spliced; I'd rewind and then record, then tape the versions that came, in order, and then splice them.

MACINNIS: The reason I ask is that the resonant frequencies each time you played it over got slightly flatter.

LUCIER: A lot's in the electronic equipment, too.

MACINNIS: When you're copying from one machine to another there's a slight speed difference.

LUCIER: I would record it on another machine and rewind it for the playback, because the mike was plugged in.

MACINNIS: You could do it with two tape recorders and not recopy at all if you had an endless cartridge on one; there is a 3½ minute one, about the right length, and so it just automatically keeps re-playing, and what's playing back from there to the loudspeakers you put on the second tape recorder, and that's what you keep.

¹ This composition is recorded on Source record No. 3, included in Source, issue 7; also included is Mr. Lucier's explanation of the work and the text he used (p. 60).

AUDIENCE: The distortion problem with those endless cartridges might raise some other questions—the noise level . . . and they seem to have a lot of flutter—what you're suggesting is correct, Don, it'd work, but I'm not sure about the sound quality.

LUCIER: In Expo I've got to figure out a way to do it live; I don't want to make a tape. They have a lot of tape machines and mikes and loudspeakers. I have to figure out a way to program this so that the speech gets recorded, rewinds, gets played into another part of the dome, picked up by another mike, while something else is happening, so there's sixteen tape decks in pairs of two so that it'll endlessly keep going. I would like to do it with people speaking in different languages for the rhythmic articulations.

AUDIENCE: Have you done any thinking on taping the same exact speeches in a different room?

LUCIER: Yes, I have a tape which is twenty minutes long, which is a better tape. It's a different room; I like the room, too. There was a lot of carpet in the room; we had an apartment that had carpets all over the whole floor.

(Panel ends with the playing of part of the tape.)