

clicking sounds. Toward the end of the performance I passed a bunch of them out to people in the audience. Three hundred people or so began playing their crickets. The hall was ringing! The sound image of that room was marvelous. The room was being used as an instrument. Then a professor from the local music conservatory went out and got his violin. He started playing it in the performance. Can you believe that? People around making vulgar vocal sounds, or banal rhythms by people were going to interfere with my pieces I wish nothing more interesting. I was depressed. After the was walking through the streets of Helsinki I could at had been at the concert playing their little cricklock in the morning I could hear the loveliest trains their accompanying echoes. It was beautiful. Some got the point of the piece.

I Am Sitting in a Room

One day during the fall of 1968 I bumped into Edmond Dewan in the hallway of the Brandeis Music Department. In casual conversation he remarked that a professor at MIT named Bose had just given a lecture in which he described a way of testing a loudspeaker he was designing. He recycled sounds into his speakers to hear if their responses were flat. That's all I remember of our conversation. I picked up on the idea and decided to make some preliminary experiments in one of the practice rooms at Brandeis. I made sounds of various kinds and recycled them into the room over and over again. The results were strident; the room was too bright acoustically.

During the spring of 1969, I was living in an apartment at 454 High Street, Middletown, Connecticut. I was teaching during the spring semester at Wesleyan. It was a sordid habitat, the kind universities rent to part-time faculty. It had a green shag rug, heavy drapes on the windows, and an old armchair. I mention

this because it has a lot to do with the acoustics of the room. The kitchen was supplied with one pot, a skillet, and a coffee cup. But that was okay; I was by myself and ate out a lot anyway.

One night I borrowed two Nagra tape recorders from the Music Department. They had purchased them for ethnological field recording. At that time Nagra machines were the *sine qua non* of the recording industry. They were the finest portable reel-to-reel recorders for films and field recording. Any Hollywood Western you ever saw was probably recorded with a Nagra. They were beautiful machines. I had a Beyer microphone, a single KLH loudspeaker, and a Dynaco amplifier. I set the mike up in the living room, sat down in the armchair, and wrote out a text that explained what I was about to do. In those days, there was a genre of work in which the process of the composition was the content of the work. I remember a Judson Church dancer, Trisha Brown I believe, describing her motions as she was doing them. I decided that the work would have no poetic or aesthetic content. The art was someplace else.

I placed the two machines on a table outside the door so the spinning reels wouldn't make noise. I unplugged the refrigerator, turned off the heat. I waited until the radiator pipes had cooled and the room got quiet. I waited until after 11 o'clock when a nearby bar, *The Three Coins*, closed. It was snowing that night so it was relatively quiet outside. There was not a lot of traffic going by. I went outside into the hallway, turned on one of the Nagras and, returning to the living room, read the text into the microphone. When I was finished, I went back out into the hallway, stopped the machine, rewound the tape, and listened to the results through headphones. The levels on the meters were okay. They hadn't peaked into the red zone. That would have indicated distortion. I transferred the tape to the second recorder, which was routed through the amplifier to the loudspeaker. I had positioned it on the chair I had been sitting in. I wanted the copy to

sound as much like my original speech as possible. I wanted it to sound as if I were there in person actually talking in the room.

I went back outside the room and played this copy into the room again, recording it on the first recorder. I repeated this procedure until I had sixteen versions, one original and fifteen copies. I stayed up all night doing it. As the process continued more and more of the resonances of the room came forth; the intelligibility of the speech disappeared. Speech became music. It was magical.

I chose speech to test the space because it is rich in sounds. It has fundamental tones (formants) and lots of noisy stuff—p's, t's, s's, k's. It was crucial to avoid poetic references—poems, prayers, anything with high aesthetic value. I felt that would only get in the way. I wanted the acoustic exploration to be paramount, the room acoustics and its gradual transformation to be the point of the piece.

Imagine a room so many meters long. Now imagine a sound wave that fits the room, which reflects off the wall in sync with itself. It will be louder (constructive interference). This is called a standing wave. If the wave doesn't fit it will bounce back out of sync and dissipate its energy (destructive interference). This is a simplistic model of what happens in *I Am Sitting in a Room*. All the components of my speech that related to the physical dimensions of the room are reinforced; those that don't, disappear. Think of yourself singing in the shower. You instinctively find the resonant frequency(-ies) of the small space you are in. Your voice sounds rich because it reinforces itself.

While the procedure of the work was repetitive, the rate of change of the resonance went at its own speed. I was careful not to influence the results in any way. I didn't raise or lower volume levels on purpose to make the process go faster or slower. I did have to carefully monitor the levels, however, in order to keep the recording from distorting or getting too soft. I did this minimally. I wanted the room to do the work.

I've made several versions of *I Am Sitting in a Room*, one for the dance *Dune* by Viola Farber, another in my house on 7 Miles Avenue. Each one sounds different. A couple of years ago some folks in Toulouse made several versions of the work. One of them was in a dialect peculiar to that region in France.

Chambers

In 1968, composer Pauline Oliveros, who was on the faculty of the University of California in San Diego, invited me out to be a guest artist. Every day I used to drive out on Route 1, along the ocean from La Jolla to Leucadia, and I would pass by a seashell shop. One day I stopped to buy several conch shells, some rather large. Pauline and I sawed the ends off them to make them into wind instruments. It's not the first time shells have been used as trumpets; they've been used in many cultures as that. I thought about when you're a child: you put a seashell up to your ear, and you hear the ocean. You hear the sounds around you resonating in the interior of the shell. I started to think of those shells as small rooms that had special resonant characteristics.

When I came home, I composed *Chambers*. The score consists of two lists: one is a collection of resonant objects one can find; the second is a list of ways of making them sound. It started as a conceptual piece that has several versions. One is that you find, collect, or make small resonant environments that you would put a sound in somehow, and hear the sound of the environment that the sound was originally made in in this new environment, and you would hear the change in the sound. I made a performance piece in 1968 for the Museum of Modern Art in New York. I gave everybody money and sent them out to buy materials for the performance. We had brought along suitcases, boots, bags, lunch boxes, vases, pots, pans, and other small, enclosed chambers. All we needed were sound sources that functioned by themselves. In a couple of hours the players came back with toy airplanes, trucks,