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Nat Durlach: Sensory Scientist and Friend to the Deaf-Blind Community

I would like to remember my friend and colleague Nat Durlach within the context of his work in the area of tactual communication for persons with profound sensory deficits in both hearing and sight. From this perspective, I think we can observe a lot about Nat as an innovative and rigorous scientist and as a warm and caring human being.

When I arrived at the lab as a post-doc in 1975, Nat and his group had become interested in the communication problems faced by persons with profound deafness and deaf/blindness. Because of the inability of these individuals to benefit from the acoustic amplification provided by hearing aids (in an era prior to the advent of cochlear implants), and in their inability to rely on visual cues, Nat became interested in the use of the tactual sense as a substitute for hearing. With this challenge as his starting point, Nat launched an experimental program that included research on natural methods of tactual communication as well as on the development of synthetic tactile devices for conveying acoustic signals. I was fortunate to be able to see Nat in action as he went about starting up this research program, and would like to remember some of the amazing qualities he radiated as a scientist, group leader, and friend.

Defining a research area: In working on this problem, Nat as a mathematician realized that the first thing we needed was an “existence proof” demonstrating the capacity of the tactual sense as a channel of communication. And he realized that this proof might be found among the natural methods of communication already in use by persons with deaf/blindness. These included the Tadoma method of speech reception (in which the deaf-blind receiver places a hand over the face and neck of a talker to feel the motions and actions associated with speech production), as well as the tactual reception of sign language and fingerspelling. With an existence proof in hand, Nat developed a framework for research on the

development of synthetic tactile aids. That is, we should figure out the properties responsible for the success of Tadoma and incorporate these features into synthetic tactile displays. In a very short time, he had thought through a basic and comprehensive set of problems to work on in this area. Nat was a master at writing grants, and soon got the lab funded for projects that continued for many years.

Assembling a team: Venturing into a new line of work, Nat sought out all the experts he could to help inform the goals and methods of our work on tactual communication. Among the people he assembled for this project were Gertrude Stenquist and Nan Robbins, educators within the Deaf-Blind Department at the Perkins School for the Blind in Watertown, Massachusetts; Martin Schultz and Susan Norton from the Audiology Department at Children’s Hospital in Boston; and Carol Chomsky from the Harvard Graduate School of Education for her expertise in psycholinguistics. At the early stages of the research, the most crucial people were the experienced users of the Tadoma method who agreed to take part in our study: Leonard Dowdy, Raymond Boduch, and Jackie Coker. The trusting relationship that Nat established with each of these people was critical to the success of our project. Nat was honest, open, and accessible to each of these people, and treated them as the partners that they were in our research. We are fortunate to have the wonderful photo seen here (see Figure 1) of Nat engaged in a lively three-way conversation with Leonard and Ray. Nat had an especially close relationship with Leonard Dowdy that ranged from serious dis-

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Figure 1. Photograph taken by Hansi Durlach in June, 1980 at the Perkins School for the Blind in Watertown, Massachusetts, during a convention held in honor of the 100th anniversary of Helen Keller's birth. Nat (center) is engaged in a three-way conversation with two experienced users of the Tadoma method of speech communication: Leonard Dowdy (left) and Raymond Boduch (right).

cussions about the state of the world to playful exchanges. Once Leonard told Nat about a dream he'd had, in which he was doing Tadoma not with a human being but by placing his hand on a machine that was shaped like a face. Nat loved that vision of Leonard's, told him he had a similar vision, and that the lab would work on an artificial face. In fact, Bill Rabinowitz and his students did create a "talking face" which Leonard was thrilled to try out and to comment on many years after his dream.

Generosity: Nat was incredibly generous in every sense of the word. He was generous with his time and with his intellectual resources. When I stop to think about it, I am pretty amazed at how he welcomed me into the group, included me in the discussions and meetings about the tactile work, and invited me to participate in the studies with the deaf-blind participants. It was very exciting to see how the goals and methods of the research developed under Nat's direction, and to be a

part of the team that documented the remarkable abilities of our deaf-blind collaborators under very controlled conditions: Nat always made sure that we used blindfolds and masking noise during the testing to eliminate any possibility of visual or auditory cues contributing to the speech-reception performance of the Tadoma users. Nat was always generous in sharing his ideas—he did not believe in secrecy within a scientific environment—and he was always generous in giving (more than due) credit to us, his collaborators.

Having fun: Nat absolutely loved what he did. He loved thinking hard, working on difficult problems, and going through the arduous process of producing precise and elegant written documents of his work. But as serious as Nat was as leader of our group and trying to keep us funded, there was always room for fun. Whenever he was in a meeting, there would eventually be roars of laughter coming from the room at some point. Nat had a lot of fun getting to know the members of the deaf-blind community who worked with us and indulged them in all kinds of activities. There was the time that Leonard Dowdy wanted to take a ride on a train with a steam engine. So we hunted around and found that there was one near Cape Cod. Nat drove Leonard down to Edaville to take a ride on the Cranberry Bog Train so that Leonard could have the experience of feeling the powerful whistle on the train—which I recall that he did much to his delight. We used to have a ping-pong table in the lobby outside the elevators on our floor. Nat was a very good player. One time we had a tournament and he ended up in the finals, which we scheduled as the highlight of a party one evening. When Nat arrived, the elevator door opened and he came out wearing a wig and a cape.

Thank you, Nat, for being such a good sport, a kind and patient mentor, and a faithful friend. The legacy of your hard work and your loving nature will be with us always.