

Remembering My Ph.D. Advisor, Nat Durlach

Editors' Note: Hong Z. Tan served as Associate Editor of Presence from 2007 until 2012.

In September 2016, the world lost a brilliant scientist and I lost my dearest mentor.

It was thirty years ago when I first met Nat Durlach in his office on the seventh floor of MIT's Research Laboratory of Electronics. My academic advisor suggested that I talk to Nat about research. I did and thus began a very rewarding journal of learning and discovery under the guidance of Nat.

Nat didn't exactly fit my expectation of a serious and nerdy-looking MIT advisor. He was disarmingly charming and having too much fun with everything. At the end of our first meeting, Nat walked me to the door and said, "Terrific!" Having just come from China, I knew the word "terror" and must have looked quite confused. Nat was delighted with my reaction and later recounted the story many times. I would soon learn how much Nat cared about the precise use of words and would sometimes ponder the use of a particular word over and over. Nowadays, I cannot hear the word "terrific" without seeing Nat's big smile.

Nat demanded a rigorous approach to research. As a trained mathematician, Nat showed me mathematical theorems when we worked on perceptual dimensionality and assessment of information transmission. He taught me the importance and joy of having a solid theoretical foundation in experimental research. Once, I was in the midst of running a series of absolute identification experiments when Nat asked me whether I used randomization with or without replacement in stimulus presentation. It made me realize that I didn't keep the information in stimulus constant and had to re-run the experiments. It was through this and many other lessons that I became aware of how every detail in an experiment could have a serious impact on the results and their interpretations.

Nat was a kind and trusting advisor, if I may say so. When we first met, he gave me three papers to read so I could choose a project for my research. I told him the next day that I didn't understand the papers very well and asked him to assign me a project instead. I was fully prepared to be told to find another advisor. To my surprise, Nat gave me the project on Tadoma, a method used by deaf-and-blind individuals who "read" speech by placing their hands on a talking face. After I finished my Master's project, I asked Nat if I could build a device, not because I was good at it but because I wished to learn how. To my surprise again, Nat allowed me to build the Tactutor and brought in another advisor to help me with hardware and software issues. Looking back, I feel so lucky that Nat took me in, taught me patiently, and encouraged me to learn from other members of my Ph.D. committee.

Nat was a great writer. Everything I know about technical writing in English, I learned from Nat. When I was a student at MIT, we programmed in Fortran language and used GNU Emacs for text editing. Nat would correct my writing on paper with a red pen. In the beginning, there was more red ink than black ink on the paper after Nat was done. He would then sit down with me, side by side, to explain each and every correction. One of the hardest things I had to learn about English writing was the use of the article "the." I went through periods of using no "the" to the liberal use of "the" everywhere in my writing. I remember my labmates being confused by my reports because of this little word. I didn't fully appreciate the proper use of "the" until Nat started explaining it to me, one by one in each instance. I now cringe at the horror I must have created with the

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misuse of “the.” Gradually, I learned to create an outline for a paper, to start each paragraph with a theme, and to explain what has been done clearly and logically.

Since becoming a professor myself almost two decades ago, I find myself thinking more and more often about Nat when faced with challenges in research, teaching,

and student supervision. Nat has given me so much as an advisor, mentor, and father figure. He was both brilliant and full of humility. He listened. He spread joy and warmth. In remembering Nat, I find myself trying to emulate Nat in whatever I do. I hope this way, Nat lives on, in my heart, and in what I do because of his teachings.