

S. S. STEVENS – A BRIEF SCIENTIFIC BIOGRAPHY

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Abstract

This brief biography recounts the highlights of the scientific career of S.S. Stevens, 1906-1973.

Stevens was born in Ogden, Utah, on November 4, 1906. After two years each at the University of Utah and Stanford University, where he received his undergraduate degree, Stevens moved in 1931 from Palo Alto to Cambridge, entering Harvard as a post-graduate student. There he would remain – as a student, post-doctoral researcher, and member of the faculty – until his death, in Vail, Colorado, on January 18, 1973.

Although intending initially to study medicine at Harvard, Stevens found himself drawn to experimental psychology – and especially to psychophysics, working under the aegis of E.G. Boring, at the time Harvard's only Professor of Psychology (psychology still being a division within the Department of Philosophy). Three of Stevens's earliest publications dealt with the attributes of tones, and are noteworthy in recognizing the critical role of *invariance*, a notion that would be central to Stevens's classification of scales of measurement. Awarded his Ph.D. in 1933, Stevens conducted post-doctoral work for three years, first as an assistant to Boring, later as a fellow with Hallowell Davis, and finally as research fellow in physics. The collaboration with Davis led to several important articles in psychoacoustics and, notably, to their classic book on *Hearing*, published in 1938.

In 1936, Stevens became a junior faculty member in Harvard's newly independent Department of Psychology, eventually rising to the rank of Professor of Psychology and, finally, to Professor of Psychophysics. The early 1940s and the Second World War brought Stevens to the basement of Memorial Hall, where he, along with students and colleagues in the Psycho-Acoustic Laboratory, examined communication under conditions of intense background noise, like those encountered by military pilots, while the late 1940s brought him to the ski slopes. During this period, Stevens managed also to edit the mammoth and seminal *Handbook of Experimental Psychology*, published in 1951 – a work of 36 chapters, whose authors included 17 eventual members of the National Academy of Sciences, that would serve as a secular bible for at least a generation of graduate students.

Stevens wrote or edited a total of nine books, the three most important of which were spaced roughly equally over his four decades at Harvard: *Hearing* near the start, the *Handbook* near the middle, and *Psychophysics: An Introduction to Its Perceptual, Neural, and Social Prospects* at the end. In addition to the books were 137 major articles and chapters; among the most significant were his 1946 article proposing the classification of measurement scales, his 1951 chapter relating measurement, mathematics, and psychophysics, and his 1957 article formally proposing the power function as a general law governing intensity perception in sensory systems. It was wholly fitting and proper that over his eminent career Stevens garnered many awards from his scientific colleagues, including the Rayleigh Gold Medal, the Warren Medal of the Society of Experimental Psychologists, and election to the National Academy of Sciences.