

Darrell Bock, influential University of Chicago Professor of Psychometrics dies at 93

*Darrell Bock developed and applied new statistical methods for the field of Modern Psychometric Theory for which he introduced the term "Item Response Theory." He was an inspirational leader of this field and is best known for his lifetime contributions to evaluation, measurement, statistics in general and educational measurement in particular.*

BY ROBERT D. GIBBONS AND TANIA BOCK

R. Darrell Bock, professor emeritus of psychology at the University of Chicago, died in Chicago on September 15 at the age of 93. An eminent scholar and teacher, Bock died peacefully with his daughter and wife at hand.

Bock is best known for educational measurement and his many contributions to the statistical theory known as "Item Response Theory," (IRT) a name that he introduced and has been unchanged to this day. Bock advanced measurement in the social, behavioral and educational sciences to the levels of precision and accuracy enjoyed in the physical sciences. In addition, Bock made contributions to numerous other areas of mathematical and statistical thinking including linear algebra, multivariate statistics, and quantitative genetics. He was a remarkable scientist.

R. Darrell Bock was born in Oakdale, Pennsylvania, on September 17, 1927. He attended Carnegie Institute of Technology (with classmate John Nash), where he received his bachelor's degree in chemistry in 1949. He did his graduate study at the University of Chicago where he received his M.A. in 1950 and his Ph.D. in 1952, both in the study of educational practice. He served in our nation's military from 1953-54 in the Personnel Research and procedures Division. He taught at the University of Chicago from 1955-1958 before moving to the University of North Carolina where he taught from 1958-1964. He returned to the University of Chicago in 1964 as Professor of Psychology and Education, where he remained throughout the rest of his career. He founded the Committee on Research Methodology and Quantitative Psychology, which he chaired from 1984-1993. His students have become international leaders in the fields of psychometrics, statistics and biostatistics.

Professor Bock's research, teaching and other professional activities have had far-reaching influence in educational measurement, psychology, statistics, and linear algebra. He developed maximum marginal likelihood estimation to deal with the problem of increasing parameter space with increasing number of subjects in both IRT model estimation and mixed-effects regression models. This led to multidimensional extensions of IRT and dramatic expansion of applications of IRT beyond educational measurement. He also made major contributions to the fields of behavioral genetics and auxology (the study of human growth). His landmark book *Multivariate Statistical Methods in Behavioral Research* revolutionized the practice of statistics in the behavioral and social sciences. He is credited with introducing the multinomial logit model, which was a milestone development in nonlinear statistical theory.

Bock's outstanding accomplishments led to national and international recognition and a long list of honors and awards. He was president of the Psychometric Society, a Fellow of the American Statistical Association and the Royal Statistical Society, recipient of the National Council on Measurement in Education award for "Contributions to the design and analysis of educational assessment", the Educational Testing Service award for "Distinguished contributions to educational measurement," the American Psychological Association Division 5 award for "Distinguished lifetime contributions to evaluation, measurement, and statistics", and the American Educational Research Association Lindquist Award for "distinguished contributions to educational measurement." He also received the Faville-Ellerton Award for his undergraduate studies at the Carnegie Institute of Technology in 1948 and the Susan Culver Rosenberg Dissertation prize from the University of Chicago in 1952. Throughout an exceptional and honored career, his proudest accomplishment remained his distinction of Eagle Scout (Silver Palm) in 1943.

Those who knew Darrell well quickly realized how humble he was and how much he shunned attention. Referring to his early Faville-Ellerton award, "I submitted the essay just ahead of the deadline and to my amazement was soon informed that I would be awarded the prize. I was practically certain that I was the only one competing; indeed, I have always wondered whether anyone else before or after me ever did likewise." Upon unearthing the submission many years later, he remarked "As I read again those pages, it was a revelation to hear a voice practically identical to that of my most recent writings. I would have hoped that the millions of words of great writing I must have read since then, and the tens of thousands of words I must have written, could have raised me to some more sublime level of language and expression. As it is, I seem doomed to compose nothing but my straightforward academic prose. I will never be able to write the Great American Novel". Despite his own beliefs, Darrell Bock was a brilliant writer and his works, both in content and prose, will remain an inspiration for generations.

Darrell loved theater, art and photography. He was a gifted black and white photographer, whose work was exhibited in New York City galleries; including a father-daughter exhibit with his daughter Monica entitled *Soft Touch/Wandering Eye*. Even through his final years, he enjoyed displaying his photography and discussing it with anyone who shared his passion. In these conversations Darrell passed his love of photography onto his children, and, through them, onto his grandchildren.

In fact, Darrell was a part of an extensive family. He is survived by his three children, Conrad, Monica, and Paul, and his six grandchildren. He is also survived by his wife of 68 years, Renee Menegaz-Bock. Together, they were a fixture of Hyde Park for decades. Though a quiet man, those who had the privilege of knowing him discovered his thoughtful sensitivity and unassuming brilliance. It is in the silence left by his serene voice that we mourn R. Darrell Bock.