



Robert R. Sokal (1926–2012)
Douglas J. Futuyma
Science **336**, 816 (2012);
DOI: 10.1126/science.1224101

This copy is for your personal, non-commercial use only.

If you wish to distribute this article to others, you can order high-quality copies for your colleagues, clients, or customers by [clicking here](#).

Permission to republish or repurpose articles or portions of articles can be obtained by following the guidelines [here](#).

The following resources related to this article are available online at www.sciencemag.org (this information is current as of August 16, 2013):

Updated information and services, including high-resolution figures, can be found in the online version of this article at:

<http://www.sciencemag.org/content/336/6083/816.full.html>

This article appears in the following **subject collections**:

Scientific Community

http://www.sciencemag.org/cgi/collection/sci_commun

RETROSPECTIVE

Robert R. Sokal (1926–2012)

Douglas J. Futuyma

Robert R. Sokal, Distinguished Professor Emeritus of Ecology and Evolution at Stony Brook University, passed away on 9 April 2012 in Stony Brook, New York. He was 86 years old. He was renowned for his contributions to quantitative analysis in biology, especially in ecology, evolutionary biology, and systematics. As a cofounder of “numerical taxonomy,” he devised methods for classifying organisms (later applied much more widely) that foreshadowed the development of phylogenetic analysis. He honed a wide variety of statistical tools, especially for analyzing spatially distributed data, and contributed abundantly to analyzing patterns of human genetic variation. His textbook *Biometry*, coauthored with F. J. Rohlf, profoundly influenced training and data analysis in ecology and evolutionary biology.

Robert Sokal was born on 13 January 1926 in Vienna, Austria. In 1939, his family fled the Nazis, escaping by train to Italy and thence by ship to Shanghai, China, joining many thousands of other European Jews. There, he earned a bachelor's degree in biology from St. John's University in 1947, where he performed his first published research (on the anatomy of the head capsule of a dragonfly species). He also met his future wife, Julie Chenchu Yang. His life during these years is described by Stefan Schomann in *Letzte Zuflucht Schanghai (Final Refuge Shanghai)*, which has been translated into Chinese.

In 1947, Robert moved to the University of Chicago and married Julie a year later. Under the supervision of entomologist Alfred E. Emerson and population geneticist Sewall Wright, he earned a Ph.D. in zoology in 1952 for a statistical study of morphological variation in the aphid *Pemphigus populitransversus* (a subject he would revisit over the next 40 years). He then went to the University of Kansas where he was first an instructor in entomology and then a professor of statistical biology. In 1968, Robert joined the newly created Department of Ecology and Evolution at the State University of New York at Stony Brook, and strongly

influenced its development. His career at Stony Brook saw him in the roles of professor, department chair, and graduate program director. He supervised 25 Ph.D. students at Kansas and Stony Brook. After retiring in 1995, he remained an active Distinguished Professor Emeritus in the Department of Ecology and Evolution, continued his research, and stayed involved in the affairs of the university and the U.S. National Academy of Science. Robert attended departmental colloquia until the last year of his life.

Robert Sokal's scientific publications include 13 books (6 translated into other languages) and 206 articles. These include 34 papers on quantitative and ecological genetics of laboratory populations of the fruit fly *Drosophila melanogaster*, the housefly, and the flour beetle, focusing especially on density- and frequency-dependent selection. Perhaps his greatest impact was in developing numerical taxonomy, a quantitative approach to classification to which he devoted two books and 68 articles. Although Robert coauthored one of the first papers on phylogenetic inference, he concluded that classification of organisms could more objectively be based on their quantitative similarity than on their uncertainly inferred evolutionary relationships. His advocacy of this approach embroiled him in intense, sometimes bitter conflict with both traditional taxonomists and the developing school of phylogenetic systematics, or cladistics. His focus on quantitative biology also was evident in more than 50 papers on statistical and biometric methods, especially concerning analysis of spatial data, which he applied mostly to humans and to the aphids that were the subject of his Ph.D. thesis. He published 49 articles on geographic patterns of human genetic variation and its relation to language, ethnohistory, and even cancer rates, focusing mostly on Europe. Robert's broad command of languages (he spoke six) and deep interest in European history contributed to this effort. He used the few dozen available genetic markers to analyze

An ecologist and evolutionary biologist brought a quantitative approach to classification through statistics and morphometric analysis.

the genetic affinities of various populations, to infer that early agriculture had spread by human migration rather than cultural diffusion, and to show that zones of sharp genetic differentiation correspond to linguistic boundaries.



Robert Sokal served as the president of the Society for the Study of Evolution, the American Society of Naturalists, the Classification Society, and the International Federation of Classification Societies. He was an associate editor of *Evolution* and editor of *The American Naturalist*. His honors include both Fulbright and Guggenheim awards and the Charles R. Darwin Award

for Lifetime Achievement of the American Association of Physical Anthropologists. He was a Fellow of the American Academy of Arts and Sciences and the American Association for the Advancement of Science, and was elected to the U.S. National Academy of Sciences in 1987.

In a professional setting, Robert carried himself with a traditional European formality, was the epitome of organization, efficiency, and attention to detail, and set high standards of performance and productivity for his assistants, students, and especially himself. He expressed his opinions and judgments forthrightly, and by his manner and example portrayed a professional excellence to which younger colleagues (even if perhaps intimidated) could aspire. Robert Sokal was scrupulously honest and fair, and a model of integrity in the face of heated debate and sometimes personal attacks. He was quietly generous and inspired devotion among many of his associates. During the 42 years that I knew him, I first felt honored to have earned his respect, and then gratitude for his strong professional and personal support. In relaxed moments, he was a genial host and an accomplished, humorous raconteur. He appreciated opera and other arts, read widely, and drew sustenance from his Jewish heritage. He developed many close friendships. Most of all, he shared a loving bond with his family—Julie, his wife of 64 years, his two children, and four grandchildren.

10.1126/science.1224101

Department of Ecology and Evolution, Life Sciences Laboratories, Stony Brook University, Stony Brook, NY 11794-5245, USA. E-mail: futuyma@life.bio.sunysb.edu