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EUGENE GARFIELD

INSTITUTE FOR SCIENTIFIC INFORMATION®
3501 MARKET ST. PHILADELPHIA PA 19104

The 1990 NAS Award for Excellence in Scientific Reviewing Goes to James N. Spuhler for Reviews in Cultural and Biological Anthropology

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The 1990 National Academy of Sciences Award for Excellence in Scientific Reviewing has been awarded to anthropologist James N. Spuhler for his reviews of race and intelligence, speech and language, and human evolution. Spuhler has participated in the review process as both author and editor and has contributed to the social sciences as both educator and researcher. Many of Spuhler's most-cited publications and the highlights of his extensive career are discussed. His comments on reviewing are also presented.

The National Academy of Sciences (NAS) has chosen James N. Spuhler as the 1990 recipient of the Award for Excellence in Scientific Reviewing. Spuhler is Leslie Spier Professor Emeritus of Anthropology, University of New Mexico, Albuquerque, and affiliate, Genetics Group, Los Alamos National Laboratory, New Mexico. His career as a scholar, educator, and researcher spans the past four decades and includes a variety of contributions to the field of anthropology.

In making this year's nomination, Ward H. Goodenough, professor emeritus of anthropology, University of Pennsylvania, Philadelphia, and committee chair of the NAS selection committee, praised Spuhler for contributing "several landmark reviews examining the relationship between the behavioral concerns of psychologists and cultural anthropologists and the genetic interests of the biological anthropologists and geneticists."¹ More specifically, Spuhler has published several comprehensive reviews that "used population genetics to illuminate such anthropological questions as race and intelligence, the biological and cultural components of language, 'scientific creationism,' relationships among species, and the timetable of human evolution."²

This year marks the 12th anniversary of the award, which was established in 1977 to honor James Murray Luck, the founder

of Annual Reviews, Inc., Palo Alto, California. ISI® and Annual Reviews, Inc., co-sponsor the award, and an independent NAS selection committee chooses the recipient. This year's presentation was made at the NAS Awards Ceremony, held on April 23. Luck, who is now 90, attended.

The award honors reviewers in the biological, physical, and social and behavioral sciences and rotates among these disciplines on a three-year cycle. Last year's recipient was Sidney Coleman of Harvard for his work in theoretical physics.³ In 1988 the recipient was Eric R. Kandel, Columbia University, New York, for his work in cellular neurobiology.⁴ The 1987 recipient was Gardner Lindzey, Center for Advanced Study in the Behavioral Sciences, Stanford, California,⁵ who coauthored Spuhler's most-cited publication, *Race Differences in Intelligence*.⁶ Other recipients in the social and behavioral sciences include Ernest R. Hilgard, professor of psychology, Stanford University,⁷ and John S. Chipman, professor of economics, University of Minnesota, Minneapolis.⁸

Readers of this column may be aware that we have often discussed the crucial role of reviewing in the advancement of science. Literature reviewing has become as basic to the science culture as peer reviewing and refereeing, but the supply of qualified re-

viewers has not met the increasing demand. In response to this great need, we have encouraged PhDs to work as "full-time" scientific reviewers⁹ and have advised young scientists to hone their reviewing skills.¹⁰ In this respect, the *science review* can be compared to the *law review*. The professional scientific community might well adopt an attitude toward reviews that is analogous to that held by most lawyers.¹¹

Spuhler succinctly describes the significance of reviews in the scientific literature. He feels that the purpose of a review is to "help the reader become informed about the field reviewed by reading 1 paper rather than 100."¹² When asked what constitutes a good review, he is reminded of one of his favorite professors, L.J. Henderson, a physiologist at Harvard University. He remembers that Henderson stressed three requirements for writing good reviews: "(a) broad familiarity with the subject, (b) a systematic sense of problem regarding the subject, and (c) an effective way of thinking about the subject."¹² These attributes have served Spuhler well in his own career as a reviewer.

By his own definition, Spuhler writes for the "general scientific public, whether citizen or professional."¹² His writings, numbering 160 to date, have appeared in nearly every type of publication—annual reviews, monographs, review journals, primary research journals, popular press, yearbooks, and proceedings. A search of the *Science Citation Index*[®] (1945-1990), *Social Sciences Citation Index*[®] (1956-1990), and *Arts & Humanities Citation Index*[®] (1975-1990) indicates that Spuhler's work has been cited in over 700 publications. Readers should note that in many social-science fields, like anthropology, citation counts are usually lower than those found in larger areas of research, such as the life or physical sciences. Spuhler's citation record, relatively speaking, is impressive.

Like most competent reviewers, Spuhler possesses subject expertise, research experience, and writing skills. Also like many other reviewers, he never made a complete transition from field and laboratory researcher to full-time reviewer. In fact most

of his reviews were written at the request of an editor after he delivered a paper at a national conference, while some grew out of graduate seminars he taught. Spuhler's career history reveals that he consistently made important contributions to the review literature while maintaining an active role as an educator and researcher.

Born in 1917, Spuhler became interested in anthropology and human biology from the books he read while a high school student. He went on to earn his bachelor's degree in anthropology from the University of New Mexico in 1940. He received his master's degree (as a Cutting Scholar) in 1941 and his PhD (as a National Scholar) in 1946 from Harvard University, where he studied biological anthropology and prepared a thesis on mathematical genetics. In 1962 he received another master's degree from the University of Oxford, UK, where he then served one year as a National Science Foundation Science Faculty Fellow.

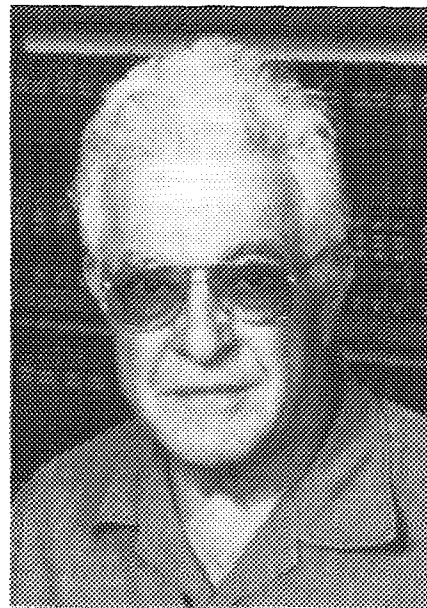
After completing his doctorate, Spuhler directed the Rockefeller Study of Human Biology of the Ramah Navajo. It was his fascination with this subject that motivated him to produce many review articles, the first of which appeared in 1950¹³ and the most recent of which appeared in 1989.¹⁴ Table 1, listing Spuhler's 10 most-cited publications, shows that "Inbreeding coefficients of the Ramah Navaho population," published in 1953 in *Human Biology*, is one of his most-cited papers.¹⁵

Spuhler has dedicated the last 42 years to education. He spent 17 years, from 1950 to 1967, at the University of Michigan, Ann Arbor, serving the last 10 years as the chairman of the Department of Anthropology and as professor of human genetics in the medical school. He devoted much of the remainder of his teaching career, from 1967 to 1984, to his position as Leslie Spier Professor of Anthropology at the University of New Mexico. He also taught anthropology and zoology at Ohio State University, Columbus, and lectured in anthropology at the University of Colorado, Boulder.

In the late 1950s, Spuhler introduced one of the first courses in the new field of human

behavioral genetics at the University of Michigan. He also consulted as a geneticist at the National Institutes of Health, Bethesda, Maryland, and even now, when asked about his favorite field of research, chooses human population genetics and the genetical aspects of human and higher primate evolution.¹² Accordingly, reviews in this field (for example, *Genetic Diversity and Human Behavior*¹⁶ and "Empirical studies on quantitative human genetics") also appear in Table 1.¹⁷

Like Lindzey, Spuhler was affiliated with the Center for Advanced Study in the Behavioral Sciences. He completed two one-year fellowships there, one from 1955 to 1956 and the other from 1971 to 1972. As noted in our essay on Lindzey, fellows at the center "are free to further their intellectual development in a secluded, relatively unstructured environment, with the opportunity for stimulating interaction with scholars from many different disciplines."¹⁵ In the spring of 1956, Spuhler formed a work group to study the origins of the incest taboo with six other fellows, including David F. Aberle, who was then affiliated with Brandeis University, Waltham, Massachusetts. In response to "a new wave of



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interest in the theoretical and empirical study of the incest taboo," the findings of this work group were published in a paper entitled "The incest taboo and the mating patterns of animals" (see Table 1).¹⁸

Table 1: James N. Spuhler's 10 most-cited publications in the *SCT*[®] (1945-1990), *SSCT*[®] (1956-1990), and *A&HCT*[®] (1975-1990). A=number of citations. B=bibliographic citation.

A	B
138	Loehlin J C, Lindzey G & Spuhler J N. <i>Race differences in intelligence</i> . San Francisco, CA: Freeman, 1975. 380 p.
99	Spuhler J N. Assortive mating with respect to physical characteristics. <i>Eugen. Quart.</i> 15:128-40, 1968.
49	Spuhler J N & Kluckhohn C. Inbreeding coefficients of the Ramah Navaho population. <i>Hum. Biol.</i> 25:295-317, 1953.
40	Spuhler J N. Empirical studies on quantitative human genetics. <i>The use of vital and health statistics for genetic and radiation studies: proceedings of the seminar sponsored by the United Nations and the World Health Organization</i> , 5-9 September 1960, Geneva, Switzerland. New York: United Nations, 1962. p. 241-52.
39	Aberle D F, Bronfenbrenner U, Hess E H, Miller D R, Schneider D M & Spuhler J N. The incest taboo and the mating patterns of animals. <i>Amer. Anthropol.</i> 65:253-65, 1963.
39	Spuhler J N, ed. <i>The evolution of man's capacity for culture</i> . Detroit, MI: Wayne State University Press, 1959. 79 p.
39	Spuhler J N. Genetic, linguistic, and geographical distances in native North America. (Weiner J S & Huizinga J, eds.) <i>The assessment of population affinities in man</i> . Oxford, UK: Clarendon Press, 1972. p. 73-95.
37	Spuhler J N, ed. <i>Genetic diversity and human behavior</i> . Chicago, IL: Aldine, 1967. 291 p.
30	Jorde L B & Spuhler J N. Statistical-analysis of selected aspects of primate demography, ecology, and social behavior. <i>J. Anthropol. Res.</i> 30:199-224, 1974.
25	Spuhler J N & Clark P J. Migration into the human breeding population of Ann Arbor, Michigan, 1900-1950. <i>Hum. Biol.</i> 33:223-6, 1961.

Spuhler's second fellowship at the center drew on his background in physical anthropology and human biology. He was invited by the center, along with John C. Loehlin, University of Texas, and Lindzey to investigate "the question of the relative importance of genetic and environmental variations in accounting for racial-ethnic IQ differences."¹⁹ Loehlin, a professor of psychology and computer science, contributed his quantitative skills to the project, and the fellowship resulted in the publication of *Race Differences in Intelligence*.⁶ This book, which treats an obviously controversial subject, turned out to be Spuhler's most-cited publication (see Table 1). Paul T. Baker, Evan Pugh Professor Emeritus of Anthropology, Pennsylvania State University, University Park, describes this review as having been "instrumental in the resolution of what had become increasingly acrimonious discussions often devoid of sound scientific evidence."¹⁹ It is probably an excellent example of a work that has prevented a lot of wasted time pursuing half-baked ideas on this topic.

In addition to teaching and researching, Spuhler has performed in an editorial capacity for several professional journals. In particular, he served on the editorial boards of the *American Journal of Physical Anthropology*, the *Annual Review of Anthropology*, the *Journal of Anthropological Research*, *American Naturalist*, and *Anthropological Linguistics*. Early in his career, Spuhler edited a variety of anthropology and genetics journals including the *Yearbook of Physical Anthropology*, *Human Biology*, *American Anthropologist*, and the *American Journal of Human Genetics*. These experiences helped to stir Spuhler's editorial interests and led to his understanding of the need for reviewer literature. Otherwise how can an editor judge the importance or significance of a manuscript?

Spuhler also participated in the international exchange of anthropological research. He was a visiting professor of genetics at Shaanxi University, Xian, People's Republic of China, and a Douglas Ormonde Butler Memorial Lecturer at the University of

Queensland, Australia. He also completed fellowships to the Japan Society of Human Genetics and the Royal Anthropological Institute of Great Britain and Ireland and directed the Child Health Survey of the Atomic Bomb Casualty Commission in Hiroshima, Japan. In addition, he has published articles in several languages, such as French, Japanese, Spanish, and Russian.

Although retired from teaching since 1984, Spuhler maintains an active professional life. He is an affiliate at the Genetics Group, Los Alamos National Laboratory, where he conducts part-time research on the Human Genome Project and is involved in team-teaching molecular genetics to post-doctoral associates. In 1988 he was chosen as the Raymond Pearl Memorial Lecturer by the Human Biology Council and spoke on the evolution of mitochondrial DNA in humans and other organisms. He continues to serve on the editorial board of *Anthropological Linguistics* and remains an active fellow in several organizations, including the American Association for the Advancement of Science, Washington, DC; the American Anthropological Association, Washington, DC; the Explorers Club, New York; the New York Academy of Sciences; and the Michigan Chapter of Sigma Xi.

Spuhler continues to produce quality reviews as well. He is perhaps the prototypical senior scientist described by David Kritchevsky of the Wistar Institute, Philadelphia, in a recent commentary in *The Scientist*.²⁰ Since 1984 he has published 14 review articles, with two more in press. Good-enough discussed Spuhler's recent reviews in the NAS selection committee's letter of nomination. Among these publications, he says, is "one of the best reviews of the controversial subject of evolution and 'scientific creationism'²¹ and...a stunning review of new methods for examining evolutionary history and the relationships of species based on the analysis of mitochondrial DNA,²² including a cogent appraisal of the resulting controversies about the timetable of events in human evolution."¹ At present, Spuhler is "working on a review of chromosomal evolution in simian primates including hu-

mans" and is "especially interested in the contributions of molecular and cellular biology to behavior."¹²

In his study of the "science of human beings,"²³ Spuhler has reviewed "scientific evidence on a broad array of social problems [and, therefore,] his work has been not only a guide in the field of anthropology but has illuminated problems common to many scientific disciplines and social policy questions."¹⁹ Surely the NAS selection committee recognizes that contribution and has

therefore honored Spuhler with this award. In so doing the committee has, once again, underscored the immense significance that skillful reviewing carries in the understanding of the scientific literature.

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