Henry Felix Kaiser (1927–1992)

Henry F. Kaiser achieved worldwide eminence in psychometrics and statistical psychology. He ranks among the most creative and influential thinkers of the second half of this century in his highly specialized field—factor analysis. He died on January 14, 1992, at his home in Oakland, California, of a massive coronary.

Born June 7, 1927, in Morristown, New Jersey, Kaiser received his education, from high school diploma to doctoral degree, in California. With interruptions by service in both World War II and the Korean War, he earned his bachelor's, master's, and doctoral degrees at the University of California, Berkeley, specializing in psychological statistics and measurement. Following his professorships at the University of Illinois (1957–1962) and the University of Wisconsin (1963–1965), he went to Berkeley as Professor of Education. Because of severe health problems, he took early retirement in 1984.

Kaiser was a fellow at the Center for Advanced Study in the Behavioral Sciences (1961–1962), a Louis L. Thurstone Distinguished Fellow at the University of North Carolina (1964–1965), and a Fulbright Distinguished Professor of Computer Science at the University of Zagreb, Yugoslavia (1986). He served as president of the Psychometric Society, the Society of Multivariate Experimental Psychology, and the American Statistical Association (Illinois chapter).

Kaiser was first and foremost a quantitative methodologist. His substantive interests were incidental to the contributions he made to empirical research by the quantitative treatment of psychometric data, particularly factor analysis. The immense influence of his work in this highly specialized and complex field can scarcely be fully appreciated by anyone but experts, although Kaiser's name per se and particularly the name of the computerized technique, Varimax, are widely recognized by behavioral scientists throughout the world. His journal articles, written mostly for advanced specialists in the field, are characterized by their originality, mathematical ingenuity, and a writing style of crisp clarity, incisiveness, and brevity. Among the 110 publications in his bibliography, a relatively small number of path-breaking articles were the basis of his eminence. The five most seminal of his contributions account for two thirds of all his citations in the *Science Citation Index* and the *Social Science Citation Index*. These articles have been cited over the years in the behavioral sciences literature with extraordinary frequency, and in modern textbooks of factor analysis Kaiser's work is cited more often than that of any other figure in the history of factor analysis (introduced by Charles Spearman in 1904). His article on Varimax (*Psychometrika*, 1958), which was his doctoral dissertation, is the third most often cited article in the psychological literature.

Kaiser's major contributions include the following. (a) He created Varimax, a computerized algorithm for the analytic transformation of factor axes to approximate Thurstone's criterion of "simple structure" to the maximum extent allowed by the data. He later devised a computer algorithm for oblique rotation, allowing for correlated factors and hierarchical analysis. (b) Kaiser's analytic criteria for communality estimation, a mathematical rationale for determining the number of factors in a correlation matrix (the Eigenvalues >1 rule), and an index ("Measure of Sampling Adequacy") of the degree to which a given correlation matrix lends itself to meaningful factor analysis are also to his credit. (c) His article "Applications of Electronic Computers to Factor Analysis" played a major role in bringing the electronic computer into use in the behavioral and social sciences. (d) He developed a general computer package ("Little Jiffy") for performing orthogonal and oblique factor analysis that incorporates the mathematical refinements he had contributed to factor analytic technique. (e) Finally, he invented alpha factor analysis, which mathematically relates factor analysis to the well-known Kuder–Richardson formulation of test reliability and yields factors having maximum generalizability.

Relatively few academicians, however, competent they may be, show a touch of creative genius. Kaiser did. But with this quality there often comes a certain eccentricity. It would betray Kaiser's own conspicuous honesty to disguise the fact that he was a true eccentric, a "character" in the colorful sense, even literally. For instance, he painted his shoes with an aerosol spray can to make them any unconventional color he happened to prefer at the time, and when listing his formal degrees, as in biographical directories, he usually added "E.S." (for Eagle Scout), after *PhD*, as his highest degree. Also, he was notorious for the "memos" he frequently distributed to faculty colleagues—always sharp, often hilarious, but occasionally (when written in a moment of pique) scathing and insulting to someone's ideas, attitudes, or values. Although quite seriously religious, and outspokenly conservative in politics, he was an irreverent, radical iconoclast in academic affairs. To those who knew him well, probably his most memorable and endearing quality was his utter absence of guile, pretense, or facade. His great openness was indeed somewhat unusual. It was not at all like that of the outgoing extravert, for he was actually a rather shy introvert. But it was as if nothing he felt as really important in his life, intellectually or emotionally, was ever hidden from others' view.

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