Lloyd G. Humphreys: 1913–2003

Lloyd G. Humphreys died on September 7, 2003, in Urbana, Illinois, at almost 90 years of age; he was born on December 12, 1913, in Lorane, Oregon. Humphreys was among the most admired, respected, and talented differential psychologists and methodologists of the 20th century. He had a well-deserved reputation for an uncompromising approach to socially important psychological phenomena, relying on data—typically large samples of it—and methodological and quantitative rigor to shape his views. He was anything but a dry-boned methodologist; he embraced psychological substance. Following Truman L. Kelley, Hugo Munsterberg, and Lewis M. Terman, respectively, he had little time for "psychological factors of no importance," "precision without usefulness," or "elegant trivia." In addition, he shared Gregory A. Kimble's (1994) concern with the huge feeling-to-thinking and jargon-to-substance ratios in the psychological sciences on politically sensitive topics.

Humphreys earned his undergraduate degree at the University of Oregon (1935); earned his master's degree from the University of Indiana (1936), where he first learned about factor analysis; and began his career as an experimental psychologist with a Stanford PhD (1938, under Ernest Hilgard). His dissertation research on the partial reinforcement effect (or the Humphreys effect) is a citation classic (Humphreys, 1939). After a postdoctoral year with Clark Hull at Yale (1938–1939) and a series of excellent experimental publications, Humphreys devoted his energies to methodology and individual differences in human behavior.

Humphreys was a member of American Psychological Association's 1954 committee on Standards. He played an important role in the early development of construct validity, which he initially called psychological validity (Humphreys, 1949), and he developed the idea of systematic heterogeneity (Humphreys, 1952), a method for building measures of important psychological constructs. In other writing, he championed the idea that predictive validity is a critical component of construct validity (Humphreys, 1979, 1985). His note on the multitrait multimethod matrix (Humphreys, 1960b) underscores a recurring theme in his writings: the idea that statistical unidimensionality does not necessarily reflect psycho-

AMERICAN JOURNAL OF PSYCHOLOGY
Summer 2006, Vol. 119, No. 2, pp. 301–310
Reprinted from *Intelligence*, Vol. 32, No. 3, David Lubinski, "Lloyd G. Humphreys: Quintessential Scientist (1913–2003)," pp. 221–226, 2004, with permission from Elsevier

logical unidimensionality (Hulin & Humphreys, 1980; Humphreys, 1970a). He was fond of saying that just because something can be fractionated is an insufficient basis for concluding that it should be fractionated (Humphreys, 1960b, p. 87). Later in his career, he exemplified this idea in an especially compelling way by showing how Piagetian tasks could be used to augment the construct validity of traditional measures of general intelligence and, simultaneously, that Piagetian tasks contain large components of general factor variance (Humphreys & Parsons, 1979; Humphreys, Rich, & Davey, 1985). These findings, coupled with his "Investigations of the Simplex" (Humphreys, 1960a), reveal his longstanding interests in learning and psychological growth (Humphreys, 1989). He also anticipated early on what is now commonly accepted about the hierarchical organization of cognitive abilities (Humphreys, 1962) and inspired Schmid and Leiman's (1957) article on the hierarchical orthogonalization of factor matrices.

Humphreys served on the faculties at Northwestern University (1939–1945), the University of Washington (1946–1948), Stanford University (1948–1952), and the University of Illinois (1957–1984). He was a Carnegie Fellow in Anthropology (1941–1942, Columbia University) and a research director of the Personnel Laboratory of the U.S. Air Force (1951–1957). His other posts included president of the Psychometric Society (1959–1960), member of the Organizing Committee of the Psychonomics Society (1959–1960), first chair of the Conference of Chairmen of Graduate Training Departments of Psychology (1962–1966), vice president of the American Association for the Advancement of Science (1963), and American Psychological Association board member (1975–1977). In 1970–1971 he received a presidential appointment as assistant director of education of the National Science Foundation, and he served as head of psychology (1959–1969) and acting dean of the College of Liberal Arts and Sciences (1979–1980) at the University of Illinois.

The 1960s were an especially productive time. Humphreys was editor of the *Psychological Bulletin* (1964–1969), and, in this short interval he accepted 4 of the top 10 most widely cited articles ever to appear in that outlet (Sternberg, 1992); he also started its Quantitative Methods section, which subsequently evolved into *Psychological Methods*. Before beginning his appointment as editor of the *American Journal of Psychology* (1968–1979), Humphreys received a letter from E. G. Boring pointing out that Titchener (Boring's advisor) founded this journal and expressing the hope that Humphreys would accept the responsibility of maintaining standards (which he more than did).

Under Humphreys's leadership, the 1960s were a time of growth and rising distinction for psychology at the University of Illinois; he played a critical role in its ascent as a premier graduate training institution. Given the personalities on the faculty, it took an especially strong head to make the department work, and Humphreys filled the bill. One of his proudest moments was when he hired the great psychometrician Ledyard R Tucker. Humphreys was having trouble convincing his faculty (concerned about publication count) that Tucker should be hired as a full professor, so he secured letters from Lee Cronbach, Harold Gulliksen, and Paul Horst, and that settled the matter. This was quite an addition. Back then, modern intellectual leaders such as John Horn and John Nesselroade walked the halls as graduate students, reading the names on the office doors—Raymond B. Cattell,

Lee J. Cronbach, Lloyd G. Humphreys, Henry Kaiser, Ledyard R Tucker—looked at one another, and said, "My God, we're regression toward the mean."

In the 1970s, Humphreys chaired the American Psychological Association Task Force on ability and achievement testing. The conclusions drawn in their final report (Cleary, Humphreys, Kendrick, & Wesman, 1975) continue to be confirmed by modern empirical findings. This report contains one of the clearest and most cogent treatments of achievement and ability tests found in the psychological literature (Humphreys, 1974, anticipated this treatment). The idea was that achievement and ability tests do not differ in kind, only in degree along four dimensions: breadth of sampling, recency of learning, extent to which they are tied to a formal educational program, and purpose of assessment. In addition, during this time he launched a three-decade series of sophisticated writing about the construct of general intelligence (Humphreys, 1970b, 1976, 1979, 1981, 1982, 1985, 1994a). Although he always considered other cognitive and noncognitive attributes important, he deemed a general intelligence test "the single most important test that can be administered for vocational guidance purposes" (Humphreys, 1985, p. 211).

In the 1980s Humphreys began working on building measures of intellectual privilege and deprivation that were much more psychological in orientation than conventional measures of socioeconomic status (Humphreys, Davey, & Kashima, 1986).

In an editorial for *Intelligence,* he introduced the concept of inadequate learning syndrome and argued compellingly that it constitutes a more important social problem than the human immunodeficiency virus epidemic (Humphreys, 1988). During this decade, a Festschrift for Humphreys, edited by Linn (1989), was published with contributions by Lee Cronbach, Ernest Hilgard, John Horn, Lloyd Humphreys, and Sandra Scarr, among others. In his review, Ceci (1992, p. 27) concluded, "[This volume is] worth reading by anyone wishing to challenge his or her cherished beliefs about the value of intellectual assessment, the use of social science data by policy makers, or the validity of the construct of 'general intelligence.' Not all that is espoused in these pages is agreeable, but since when did that become a criterion for judging the value of an intellectual contribution?" This volume is indeed excellent and a must read.

In the 1990s, Humphreys published a series of articles on the utility of the group membership approach for examining the construct validity of psychological tests and how this method complements the prediction of individual differences in criterion performance. Substantively, this was documented by illustrating the importance of spatial visualization for becoming an engineer, physical scientist, or artist (e.g., Gohm, Humphreys, & Yao, 1998; Humphreys, Lubinski, & Yao, 1993). This series was inspired by the methodological advances of the advisor–student lineage of Truman L. Kelley, Phillip J. Rulon, and Maurice M. Tatsuoka, respectively. During this period, Humphreys also introduced innovative methods for uncovering spurious moderator effects (Lubinski & Humphreys, 1990), comparing predictive validities measured with biserial correlations with those generated using relative operating characteristics of signal detection theory (Humphreys & Swets, 1991), and untangling cognitive ability from socioeconomic status (Lubinski & Humphreys, 1992). In addition, he crafted a target article, "Intelligence From the

Standpoint of a (Pragmatic) Behaviorist" (Humphreys, 1994a), which stimulated a series of comments by Brody, Carroll, Ceci, Detterman, Flynn, and Jensen and a rejoinder (Humphreys, 1994b). But these are only a few of his achievements; the full scope of his methodological and substantive contributions is too extensive for a comprehensive list. He wrote on topics and advanced methods for a wide range of psychological phenomena (cf. Linn, 1989, pp. 222–230, for a complete bibliography up to that time).

One of the most dominant themes in his writing is the importance of incorporating reliable and construct valid measures of individual differences into psychological and social science research and, especially, securing large samples. Humphreys learned about the need for large samples in psychological research during his military work in the 1950s. Too much psychological research, he maintained, is based on inadequate sample sizes, which is a key reason why so much psychological research fails to replicate. Long before the advent of meta-analysis, he was aware of how correlations fluctuate when *N*s are small. This is one reason that much of his empirical research in the last 20 years of his career was based on a wonderful longitudinal study, Project Talent (Flanagan et al., 1962). Project Talent is a stratified random sample of U.S. high schools. It consists of four cohorts, grades 9 through 12, with approximately 100,000 students per cohort (totaling more than 400,000 participants). It also contains follow-ups at 1, 5, and 13 years after high school graduation. At Time 1, students were assessed in their high school for a full week on measures of ability, background, general information, interests, and personality, among other things. Humphreys and students under his supervision mined this impressive data bank as thoroughly as anyone. Humphreys believed that psychology would be much better off if resources were concentrated on a small number of such studies across multiple psychological domains rather than the thousands of $N < 100$ psychological investigations, which use measures of unknown psychometric properties and typically contribute little to cumulative knowledge. Findings from Humphreys's empirical research, which focused primarily on the identification and development of intellectual talent, are widely cited in the modern psychological literature, handbooks, and textbooks. As much as any other psychologist, over the course of his career Humphreys provided empirical support for the importance of using "individual differences as a crucible in theory construction," as Underwood (1975) suggested. After decades of experimental research, Underwood (1975, p. 129) reported that he was no longer able to say, "The problem of individual differences is someone else's responsibility. . . . I finally came to accept the notion that individual differences ought to be considered central to theory construction, not peripheral." Humphreys's career highlights the chief importance of this idea.

Among other honors, Humphreys received a decoration for exceptional civilian service from the Air Force during the Korean War, the American Education Research Association (1995) Counseling and Human Development Award, the Educational Testing Service Distinguished Service to Measurement Award (1995), and the Saul Sells Award (1999) from the Society for Multivariate Experimental Psychology.

On June 3, 2000, when the Department of Psychology at the University of Illinois dedicated their Computational Laboratory and Quantitative Reading Room

to Ledyard R Tucker and Lloyd G. Humphreys, respectively, Lloyd spoke at this event. He stressed that his work has always been aimed at applied use. The crowd gasped when he noted, "This has been true ever since my very first publication, 65 years ago" (Buxton & Humphreys, 1935).

Not everyone could work with Humphreys; he placed a premium on science as opposed to ideology and politics. He was fair, generous, and absolutely brilliant, quantitatively. His scientific integrity was as distinguished as his penetrating intellect. A dedicated and helpful colleague and teacher, Humphreys was all business, serious, and passionate about psychological knowledge; he let the chips fall where they may, even if they should fall on the politically incorrect side of controversial issues (cf. Gottfredson, 1997; Humphreys, 1992; Page, 1972).

Although Lloyd was primarily cognitive–rational in orientation, he also was capable of displaying other orientations. For example, his encounter with three reviews of his brilliant "Limited vision in the social sciences" (Humphreys, 1991) left him absolutely beaming (and full of feeling). Reviewer A wrote that the manuscript ranked at least three standard deviations above the mean of the typical social science article, recommended prompt publication, and then provided two pages of comments and suggestions. Reviewer B had a different opinion, suggesting that if Humphreys secured a coauthor and cut the piece down by about half, he might be able to develop something publishable. Reviewer C's remarks were unlike anything he had seen before, and they tipped the decision in the positive direction. This evaluation was on a plain white sheet of paper, written (and signed) in a black felt-tip pen. It consisted of only one sentence: "I read this manuscript because I was ethically obligated to as a referee, but I hardly needed to as everything that Lloyd Humphreys does is great by my lights. Paul E. Meehl."

Lloyd G. Humphreys was truly a professor's professor. He generated empirical findings that not only replicated but also were socially significant, and the methods he invented to uncover them will continue to shed light on social science inquiry for future generations. His many students and the colleagues he influenced continue to enjoy the privileges and pride that come only with being mentored by a world-class scientist.

Lloyd Humphreys married Dorothy Windes in 1937. They had been married for 58 years when Dorothy passed away in 1995. Along with their four children, John, Michael, Margaret, and Susan, they are survived by seven grandchildren and two great-grandchildren.

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Appendix

This appendix lists articles published by Lloyd G. Humphreys from 1988 until his last publication in 2002. Articles published before this time are found in his *Festschrift,* edited by Robert L. Linn (1989). Humphreys continued to write about important psychological and social issues and advanced methodological innovations well into his 80s, and the breadth and depth of his writing during this time remained awe inspiring.

1988

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