
John Bissell Carroll (1916–2003)

John Bissell (Jack) Carroll was an early leader in the development of psycholinguistics and a dominant contributor to psychometrics and the study of individual differences in cognitive abilities. His seminal work in evaluating foreign language proficiencies across multiple cultures combined his expertise in psycholinguistics with that in psychometrics and defined fundamental issues in the study of language acquisition. It also provided a rich empirical knowledge base for teaching foreign languages. The intellectual depth of his scholarly products is matched only by the overwhelming amount of data collection and analysis in which he engaged before venturing empirical generalizations and theoretical speculations. His career brings to mind E. O. Wilson's idea about the creation of important scientific products—brains for analysis, energy for synthesis—because Jack Carroll's work reflects the teaming of extraordinary amounts of each.

Jack was born in Hartford, Connecticut, on June 5, 1916. Early on, he manifested wide-ranging interests and precocious talents. With his aunt's guidance, Jack learned to read before starting first grade, and he began practicing the piano at age three. He had perfect pitch and color synaesthesia. During childhood, his interests and proficiencies in language and music were especially noteworthy. He would entertain friends and family members with piano compositions and improvisations, and he performed with his father, a professional tenor. By 17, he had gained admission to the American Guild of Organists. He also had studied Latin and Greek and was reading texts in French and German; he pored over the grammars of Sanskrit and Armenian as a pleasurable pastime.

At age 13, Jack attended a lecture by Benjamin Whorf on the Aztec and Mayan Indians of Mexico and Central America. Whorf, a student of Edward Sapir's, communicated his fascination with Mexican languages. This motivated Jack to approach him after his lecture to learn even more. They developed a close friendship, and Whorf shared with him his ideas and manuscripts about the close relationship between language and culture. For many years, they worked together on translations and deciphering, a time when Jack learned phonetics, phonemics, and a variety of linguistic skills. Eventually, Jack edited a selection of Whorf's work (*Language, Thought, and Reality: Selected Writings*, 1956).

Jack attended Wesleyan University, majoring in classics and graduating with highest honors in 1937. That summer, he attended the University of Michigan's Linguistic Institute, where Sapir was a faculty member. Even though Jack's primary passion remained with languages and linguistics, he developed an interest in psychology, particularly in assessing foreign language aptitudes. Because of better career prospects, Whorf and Sapir encouraged him to consider psychology. So, he applied to graduate school at the University of Minnesota, where B. F. Skinner had joined the faculty as one of the few psychologists interested in language in the 1930s. Skinner boasted that he had just secured

the best graduate student in the country. However, Skinner's experimental work with single subjects (rats and pigeons) did not fit well with Jack's interests. Following a colloquium by Thurstone, Jack thought working in psychometrics with a large number of tests and human participants would be much more appealing. Thus, Skinner arranged for Jack to work with Thurstone and others at the University of Chicago (summer 1940). His dissertation was completed soon after he assumed his first academic position, at Mount Holyoke College, and was subsequently published in *Psychometrika* ("A Factor Analysis of Verbal Abilities," 1941). It remains a cogent treatment of the structure of verbal abilities.

At Mount Holyoke, Jack met Mary Elizabeth Searle; she was a senior when Jack arrived there. They married in 1941. From there, they moved to Indiana University (1942–1943) and the University of Chicago (1943–1944). Then, Jack served as an aviation psychologist in the U.S. Navy (1944–1946), followed by a stint as a research psychologist for the Department of the Army (1946–1949) in Washington, DC. Subsequently, Jack secured a position at Harvard's Graduate School of Education (1949–1967). There, he rose from assistant professor to Roy E. Larsen Professor of Education. Jack and Mary then moved to the Educational Testing Service (ETS) and, in 1974, to the University of North Carolina (UNC), Chapel Hill, where Jack became the William R. Kenan, Jr., Professor of Psychology and director of UNC's renowned L. L. Thurstone Psychometric Laboratory (1974–1979). This was their last move together. Jack became emeritus at UNC in 1982. Throughout these transitions, Mary enthusiastically and proudly supported Jack's work. She edited and typed his manuscripts and painstakingly proofread his tables and references. He relied heavily on her judgment in many practical matters, and she took a very personal interest in his graduate students.

Jack's career reflects an unfolding of multiple lines of accomplishment, any one of which would constitute an impressive academic career. Many consider Jack, for example, the leading contributor to educational psycholinguistics of the 20th century. His leadership was especially apparent at Social Science Research Council (SSRC) meetings. The formal founding of psycholinguistics as a discipline occurred at a meeting Jack chaired during the summer of 1951 (Cornell University). SSRC had assembled a group of psychologists and linguists to examine relations between linguistics and psychology. Over the summer, they crafted a report to expand the council's work in their newly christened field, "psycholinguistics." The council then went on to set up another summer group (1953) at Indiana University to advance the new discipline. Jack was a part-time member of that group and contributed to the monograph *Psycholinguistics: A Survey of Theory and Research Problems* (C. E. Osgood & T. A. Sebeok, Eds., 1954).

Jack's pioneering work "Notes on the Measurement of Achievement in Foreign Languages" (1954) developed impor-

tant questions that many psycholinguists are still trying to answer. Most people mark the beginning of modern language testing with Jack's 1961 paper "Fundamental Considerations in Testing for English Language Proficiency of Foreign Students." The 25-year anniversary of the paper was marked by a special conference held at the Center for Applied Linguistics, Washington, DC, in 1986. Yet, when his 1954 contribution became more widely available, people realized how visionary Jack actually was because his 1961 insights had been anticipated by the earlier publication. Today, his writings on foreign language aptitude are considered to be the most comprehensive and authoritative available. It was Jack's understanding of both linguistics and psychology that made his contributions so important.

The other dominant line of scholarship pursued by Jack originated in the factor-analytic work he began as a graduate student and pursued for decades. His 800-page magnum opus, *Human Cognitive Abilities: A Survey of Factor-Analytic Studies* (1993), is among a handful of the best treatments ever published on individual differences in cognitive abilities. It is certainly the most definitive treatment of their nature and organization. Jack reanalyzed over 460 data sets, which, over the years, he had meticulously collected and organized. Prior to *Human Cognitive Abilities*, different models were proposed to characterize and organize human cognitive abilities. Spearman stressed one factor, whereas (at uniform molarity levels) Thurstone preferred 7, and Guilford argued for 120 or more dimensions. Jack's three-stratum model cast a clarifying light on the dominant, minor, and tiny currents of covariation traveling through the indicators assembled by these and other early pioneers. Furthermore, he illustrated how these nascent formulations, as well as others like Cattell's and Vernon's, did not require a complete jettisoning but did require augmentation, refinement, and structural rearrangement. Undoubtedly, *Human Cognitive Abilities* will be found on the bookshelves of scholars of the subject for decades. Jack showed definitively that cognitive abilities are organized hierarchically, and, although others had observed a similar outline, no one has documented its existence as clearly and comprehensively.

Anything but a "dry-boned" methodologist, Jack was deeply enmeshed in psychological substance. A revealing collection of the scope of Jack's broader influence in education and the psychology of learning is found in L. W. Anderson's (Ed.) *Perspectives in School Learning: Selected Writings of John B. Carroll* (1985). Moreover, when empirical findings contradicted the contemporary social science point of view, Jack did not shy away from controversy (see, e.g., his 1995 review of *The Mismeasurement of Man*). His writing possessed a rare combination of sensitivity and scientific integrity. Thus, in the 1990s, when misinformation on all sides of the contentious debate about assessing human cognitive abilities peaked, it was not surprising that *Psychological Science* (1992) and *Intelligence* (1997) chose Jack to craft opening articles for special treatments of key findings and issues.

Jack also was a superb role model and a generous mentor, inviting graduate students to join him in prestigious coauthorships. On the American Psychological Association's (APA) Division 5 electronic mailing list, Jack responded to methodological queries with detailed, highly informative responses. When Jack moved from ETS to assume the directorship of the Thurstone

Laboratory, UNC learned what ETS had already known: A large room was needed for his extensive library. It was worth it. Jack generously shared this treasure trove with faculty and students, and they were forever impressed by his elaborate system of cross-referencing (long before software appeared for such purposes). Jack's scientific integrity and personal qualities are why the International Society for Intelligence Research found it fitting to christen their annual award for the best graduate student paper presentation the John B. Carroll Award.

Although his curriculum vitae is certainly noteworthy in terms of its sheer size, approximately 500 publications, it is not one that pales when sophisticated scientists examine it deeply. Jack's ideational products are extraordinary blends of analytic-critical and creative-synthetic scholarship. His is the kind of work that would be chosen to impress scientists in other disciplines. In Jack's methodical and systematic way, personally imperturbable and entirely self-confident, he showed by example how psychology could be practiced as a cumulative discipline. He also showed how models of individual differences reveal consistent patterns of covariation, which reach out and form important external connections and complement experimental applications, even over decades of cultural change. Without careers like Jack's, psychology as a scientific discipline would have much less of which to be proud.

For his accomplishments and leadership roles, he received too many awards and presided in too many posts to list comprehensively. Among the more noteworthy are president of the Psychometric Society (1960-1961), founding member of the National Academy of Education (vice president 1977-1981), the E. L. Thorndike Award from APA's Division 15 (1970), the Diamond Jubilee Medal (Institute of Linguistics, London, 1971), ETS's Award for Distinguished Service in Measurement (1980), the Distinguished Research Award from the National Conference on Research in English (1990), the Lifetime Contribution Award from APA's Division 5 (1997), James McKeen Cattell Fellow of the American Psychological Society (1998), and APA's Gold Medal Award for Life Achievement in the Science of Psychology (2002).

In the early 1980s, following Jack and Mary's move to Chapel Hill, Mary's health began to decline. During her last five years in a wheelchair, Jack lovingly assumed the role of primary caregiver until her death in 2001. They were married for 60 years. Subsequently, Jack moved to Fairbanks, Alaska, where he lived with his daughter and son-in-law. There, Jack immediately became enmeshed in community activities, and continued to pursue his scholarly interests.

Jack Carroll, polymath, known by his colleagues, family, and friends for his profound intellectual gifts, curiosity, optimism, wit, and unfailing integrity and sincerity, died on July 1, 2003, shortly after he was diagnosed with pancreatic cancer. He will be missed deeply by all who had the privilege of knowing and learning from him. Jack is survived by two sisters, Helen H. Wetherby of Manchester, Connecticut, and Alice Stambaugh of Littleton, Colorado; a daughter and son-in-law, Melissa and F. Stuart Chapin of Fairbanks, Alaska; and two grandsons, Keith Chapin of New York City, New York, and Mark Chapin of Fairbanks, Alaska.

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