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OBITUARY[1]

Ronald S. Wilson (1933–1986)

The Behavior Genetics Association mourns the death of its current President, Ronald S. Wilson. In apparently good health and in the prime of his 53 years of life, Dr. Wilson died while playing tennis on a Sunday morning, November 16, 1986. Sports were an important part of his life—he was an All-State football player in North Carolina and an avid tennis and handball player. Dr. Wilson is survived by his wife Lois, a son, a daughter, two stepdaughters, and a stepson.

Ronald Wilson was born in Virginia on March 30, 1933, the son of a Presbyterian minister; his family moved to North Carolina, where he grew up and attended Davidson College. Anyone who met him remembers his southern-gentleman style, charm, and Virginia-tinged speech. Ronald Wilson was competitive professionally as well as in sports, sometimes impatient and quick-tempered, but always chivalrous and fair. For those who mistakenly link an interest in heredity with conservative political beliefs, Ronald Wilson was a counterexample of note. He created a highly effective political group in his community that fought commercial abuses of land and pollution and took a prominent role in faculty governance at the University of Louisville.

Ronald Wilson received a B.S. in 1955 from Davidson College and was awarded an M.S. and Ph.D. in clinical psychology in four years from Yale University. He was an Assistant Professor of Psychology at the University of Iowa from 1959 through 1965. His training was in clinical psychology and his early research focused on electrophysiology. Not until he went to the University of Louisville School of Medicine in 1965 did his interest in behavioral genetics and child development emerge, primarily as a result of his involvement with the Louisville Twin Study. The study, initiated in 1957 by Dr. Frank Falkner, was directed by Steven Vandenberg until 1968, at which time Ronald Wilson became Director, a position he held until his death. He was a Fellow of the American Association for the Advancement of Science and the American Psychological

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Association, a founding fellow of the International Society for Twin Studies (of which he was Vice President from 1980 to 1983), and an active member in the International Society for the Study of Behavioural Development and, of course, in the Behavior Genetics Association, which awarded him the James Shields Award for outstanding twin research in 1980 and elected him to the office of President-Elect in 1984.

His lasting memorial is the longitudinal Louisville Twin Study, the premier study in the field of human developmental behavioral genetics. While he worked with his collaborator of 17 years, Adam Matheny (who will succeed Ronald Wilson as Director of the study), funds were consistently obtained to make it possible to add 25–35 pairs to the Louisville Twin Study each year and to test the twins at 3, 6, 9, 12, 18, 24, and 30 months, then yearly from 3 through 9 years, with a final follow-up at 15 years. The study now includes nearly 500 pairs of twins; over 5000 test sessions have been conducted.

Ronald Wilson realized that the value of longitudinal research far outweighs the considerable difficulties entailed in such research: Longitudinal studies alone can answer questions about change and continuity during development. The only previous long-term longitudinal study in behavioral genetics was Skodak and Skeels' classic parent–offspring adoption study of IQ conducted in the 1940s. Because twins are of the same age, they offer much more power than the parent–offspring design in analyzing change and continuity during development.

Ronald Wilson published influential papers describing the twin results for IQ in infancy (Wilson, 1972a; Wilson and Harpring, 1972), early childhood (Wilson, 1974a), and middle childhood (Wilson, 1977). In 1983, he summarized over 25 years of work on the study of mental development in one figure, reprinted as Fig. 1. This single figure yields a rich store of discoveries about mental development: increasing similarity for identical twins and decreasing fraternal twin resemblance, suggesting increasing heritability during early childhood; identical twin correlations of the same magnitude as age-to-age correlations; stabilization of IQ heritability by the early school years; sib–twin correlations that are lower than fraternal twin correlations, suggesting shared environment specific to twins; and substantial and increasing midparent–offspring correlations, compatible with the hypothesis that genetic influences on mental development scores during infancy and childhood are associated with genetic effects on IQ scores in adulthood. There is no more far-reaching summary from a single research project in the field of human behavioral genetics; this figure is a touchstone for research in the field and should inspire others, especially young researchers, to devote their careers to the large-scale, longitudinal research needed in the field of human behavioral genetics.

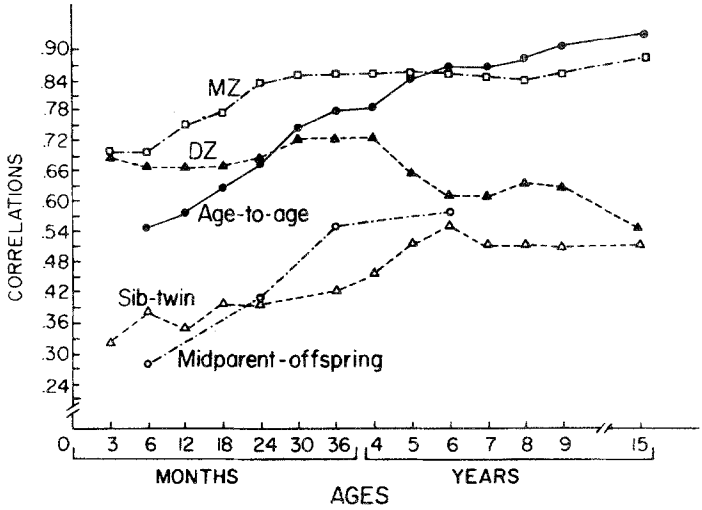

Fig. 1. Mental development correlations for MZ twins, DZ twins, twin–sibling sets, and parent–offspring sets and for each child with him- or herself, age to age. [Reprinted with permission of the Society for Research in Child Development from Wilson (1983, Fig. 4, p. 311).]

Ronald Wilson did not mince words concerning his genetic interpretation of these data:

> The message from these results seems clear: There is a strong developmental thrust in the growth of intelligence that continues through adolescence and is guided by an intrinsic template or ground plan. The template is rooted in genetic processes that act through childhood and adolescence. (1983, p. 311)

Nevertheless, he held out for the influence of family environment:

> Does this suggest that the quality of the home environment is unimportant? Not at all. The contribution of the parents, whether natural or adoptive, is in potentiating the child's inherent capabilities, in creating an atmosphere of enthusiasm for learning, and in adapting their expectations to the child's capabilities. The wide diversity within families emphasizes the importance of giving each child full opportunity for development and indeed of making sure that the opportunity is taken. The ultimate goal is the maximum realization of each child's intelligence coupled with a sense of satisfaction and personal accomplishment in its use. There is no better way to foster such development than by a supportive and appropriately stimulating family environment. (1983, p. 312)

In fact, he conducted novel research on environmental influences relevant to mental development. After adding measures of the home environment to the study, his analyses led him to suggest that heredity might be importantly involved in mediating relationships between measures of the home environment and mental development. As another example, he ana-

lyzed longitudinal IQ data for low-birth-weight twins and argued "for a high degree of resilience in mental development in the face of prenatal stress and for a powerful effect of heritage and home environment in guiding the recovery from early deficit" (Wilson, 1985, p. 795).

His interest in mental development went beyond IQ. For example, his article on twin analyses of the Wechsler Preschool and Primary Scale of Intelligence at 4, 5, and 6 years of age is a classic (Wilson, 1975a). In addition to reporting twin correlations for the Wechsler subscales which suggested greater genetic influence at those ages for performance tests than for verbal tests, he found even greater evidence of genetic influence on the difference between Verbal IQ and Performance IQ and for the twins' patterning of subtest scores, suggesting a genetic role in the patterns of cognitive strengths and weaknesses.

Although it is difficult to predict which of his many accomplishments will prove to be most influential, Ronald Wilson is perhaps most well known among developmentalists for his concept of genetic influence on "spurts and lags" in mental development. The concept of spurts and lags is depicted vividly in his frequently reprinted figure of longitudinal profiles of scores for individual pairs of identical twins and pairs of fraternal twins. That is, infants and young children often show dramatic changes from year to year in their scores on mental tests; however, identical twins change in tandem, more so than fraternal twins. These results led him to conclude that "while the developmental trends may have generated sharp peaks and troughs over ages, the MZ pairs in particular displayed a synchronized pattern of change" (1983, p. 302). His work on this topic has succeeded in convincing many developmentalists of the possibility of genetic change as well as continuity during development.

Ronald Wilson's electrophysiological research led him to develop trend analysis for use with the repeated measurements obtained in such research (Wilson, 1967, 1968, 1974b; Wilson and Bartels, 1968; Wilson and Scott, 1970); he then extended this approach to the analysis of longitudinal twin data (Wilson, 1972b, 1975b, 1979) and to the analysis of profiles of strengths and weaknesses in cognitive abilities (Wilson, 1975a). He had recently developed a way of expressing each pair's concordance for developmental profiles in terms of a "developmental synchronies" index, which reflects the goodness of fit between the curves of the twin partners (Wilson, 1983). In his latest statement, published last year in *Behavior Genetics* (Wilson, 1986a), he brought together his work on profiles of abilities and developmental profiles. An important conclusion from this work was that "genetic influence may be found for both continuity and change in the cognitive ability profile, although continuity was clearly

more prominent at these ages [middle childhood]. Prior to 3 years, change played a far larger role" (Wilson, 1986a, p. 59).

Less well known to members of the Behavior Genetics Association than Ronald Wilson's work on mental development is his extensive research on physical development (Wilson, 1974c, 1976, 1979b, 1986b). This research contributes the clearest extant evidence of genetic change during development for polygenic characteristics: neither height nor weight is heritable at birth, but they show steadily increasing heritability throughout infancy, and by early childhood, heritability reaches magnitudes comparable to those of heritabilities in adulthood.

In addition to his work on mental development and physical development, Ronald Wilson extended his interest in behavioral development to the study of temperament. Some data relevant to temperament had been collected since the early days of the Louisville Twin Study using maternal interviews to assess behavioral differences within twin pairs (Wilson *et al.*, 1971; Matheny *et al.*, 1981) and a rating instrument completed by the examiner following the administration of standardized tests of mental and motor development (Matheny *et al.*, 1976). Beginning in 1976, however, a structured laboratory assessment sequence that is videotaped and rated later was devised and incorporated into the Louisville Twin Study; this research is particularly important because of its objective observations in a field dominated by parental ratings. The research has just begun to bear fruit (Wilson, 1982; Wilson and Matheny, 1983; Matheny *et al.*, 1984, 1985); preliminary behavioral genetic analyses of these data were reported recently in a paper that summarizes the Louisville Twin Study effort in the temperament domain (Wilson and Matheny, 1986). The importance of this work was recently acknowledged by the award of a grant from the National Institute of Child Health and Human Development to continue the temperament research of the Louisville Twin Study. Ronald Wilson's influence on the field of temperament is considerable. For example, he organized one of the first interdisciplinary conferences on temperament in September 1978 in Louisville (Wilson and Matheny, 1980). The conference proved so successful that it led to four subsequent conferences.

In addition to his empirical and methodological contributions, in recent years Ronald Wilson became increasingly interested in general models of developmental behavioral genetics. The breadth of his thinking—spanning evolution, neurobiology, and molecular genetics—first became apparent in a 1978 *Science* article, for which Ronald Wilson was awarded the AAAS Socio-Psychological Prize in 1979. His thinking about models of development continued to evolve in more recent publications (Wilson, 1983, 1984).

The field of behavioral genetics has lost a stalwart scientist, one of the founders of the subdiscipline of developmental behavioral genetics. Ronald Wilson's achievements during his twenty years in the field are exceptional. He had the vision to see the importance of a large-scale longitudinal twin study and the determination, courage, and tenacity to fulfill that grand aim. It is a striking achievement and a model for future generations of behavioral geneticists.

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