

DOCUMENTS OF THE GENERAL FACULTY

**REPORT OF THE MEMORIAL RESOLUTION COMMITTEE FOR
LEE WILLERMAN**

The special committee of the General Faculty to prepare a memorial resolution for Lee Willerman, professor, psychology, has filed with the Secretary of the General Faculty the following report.

John R. Durbin, Secretary
The General Faculty

**IN MEMORIAM
LEE WILLERMAN**

Lee Willerman was born in Chicago on July 26, 1939; he died suddenly and unexpectedly of a heart attack in Austin on January 10, 1997, at the age of 57. He left a wife, Benné, two grown daughters, Raquel and Amiel, two older brothers, and many grieving friends, colleagues, and former and present students.

Lee grew up in tough neighborhoods in Chicago, the youngest of four sons of poor immigrant parents from Russia. He seems to have resisted his academic calling for some time: at age 16 he turned down a scholarship offer from the University of Chicago to concentrate on his skills as a pool player and yo-yo demonstrator. Later he left Roosevelt University during his sophomore year to travel the world on a Danish freighter and write novels. He soon found this life to be less romantic than he had supposed, and returned to college. He received his BA degree from Roosevelt University in 1961, and he and Benné were married in 1962. He obtained his MA from Roosevelt University in 1964 and his PhD from Wayne State University in 1967.

Lee began his professional career with three years in Washington as a research psychologist at the National Institutes of Health, where he was involved in the Collaborative Perinatal Project, a large multi-institution study focusing on pregnancy, birth, and early human development. Next came a post-doctoral year at the University of Michigan in the Department of Human Genetics. In the fall of 1971 he came to The University of Texas at Austin, where he remained until his death, except for a semester in 1983 as visiting Schienfeld Professor at the Hebrew University in Jerusalem. At Texas, he was promoted to associate professor in 1974, to professor in 1981, and became the first Sarah M. and Charles E. Seay Regents Professor in Clinical Psychology in 1985. He directed the Clinical Psychology Training Program in 1979-1980 and from 1981 to 1989.

He was a Fellow of the American Psychological Association and the International Society of Twin Studies, served on the editorial boards of leading professional journals such as *Intelligence*, *Behavior Genetics*, *Contemporary Psychology*, and *Developmental Psychology*, and as consultant to Veterans Administration Hospitals and the March of Dimes. Lee was the author of two influential textbooks: *The Psychology of Individual and Group Differences* and *Psychopathology* (the latter coauthored with David B. Cohen), and of over 50 research articles and chapters in edited volumes.

Research

The main thrust of Lee Willerman's research work over the years was relating behavior to its biological underpinnings. He was never satisfied with purely psychological explanations; his quest for answers took him to domains as diverse as neonatology and sociobiology. Lee was interested in a wide variety of intellectual topics, always full of ideas, and ready to set up a research collaboration at the drop of a hat.

From the beginning, Lee was interested in intelligence and how it is related to both genetic and environmental factors. His first published paper concerned environmental influences: it examined the effect

on IQ of birth weight differences between identical twins. The twin who had been heavier at birth tended to be higher in IQ. Lee especially liked data with a touch of the dramatic—data approaching an old problem from a new and unexpected direction. For example, he looked into the curious association between high IQ and retinoblastoma, a genetically-caused eye tumor that may result in blindness. He also studied the IQs of children from interracial matings. Mixed-race children whose mothers were white had higher average IQs than mixed-race children whose mothers were black. This implicated environmental factors, as children obtain their genes for intelligence equally from both parents. Another paper discussed the interaction of social class and IQ development. Lee found that retardation in development at eight months had decidedly more adverse implications for the later IQs of lower-class children than of higher-class children.

For more than 25 years, Lee worked with his colleagues Joseph M. Horn and John C. Loehlin on a major study of adoptive families, the Texas Adoption Project. An adoption study is a powerful design for untangling genetic and environmental influences on a trait, and thus particularly appealed to Lee. The study involved giving IQ and personality tests to the members of 300 families who had adopted infants from a Texas home for unwed mothers. Lee and his colleagues were able to examine resemblances between the birth mothers and the children with whom they had had no contact since birth, and between biologically related and biologically unrelated members of the adoptive families. The children were studied twice—initially, when they averaged about eight years old, and again, roughly ten years later, when most were late adolescents or young adults. A third round of testing was in the planning stage at the time of Lee's death.

The results for IQ from the adoption study were provocative: the adoptive childrens' IQs resembled those of their birth mothers, whom they had never met, more than those of their adoptive mothers, with whom they had lived all their lives. Genetically unrelated children who grew up together in the same family were somewhat similar in their measured IQs when they were young children, but by late adolescence they were as different as any two individuals randomly selected from among this population, suggesting that it is shared genes, not a shared family environment, that creates lasting IQ resemblance in ordinary families. Lee was a co-author on a dozen papers reporting results from the Texas Adoption Project. Two papers on abilities illustrate the typical Willerman focus on generalizing findings: one showed that the results extended to academic achievement as well as IQ, and a second examined the contribution of a particular component of intelligence, mental processing speed. A third paper on psychopathology showed that differences in antisocial behaviors among the children were also partly genetic.

Lee's recent research on intelligence continued his dual emphases on a link to fundamental processes and a search for the dramatically revealing rather than the routine result. One such example was his foray with his students into information processing foundations of intelligence. These studies showed a link between IQ and the processing time required to make simple auditory pitch discriminations. In the late 1980s Lee became convinced that the new neuroimaging technologies would permit the discovery of brain characteristics responsible for individual differences in IQ, and embarked on a study of neuroanatomical predictors of intelligence. This research showed a stronger association between brain size and IQ than had previously been found using head size or postmortem measures, a result which has helped revitalize interest in the biological bases of intelligence. It also revealed an intriguing sex difference: men with larger left brain hemispheres had better verbal than non-verbal abilities, whereas for women it was the other way around. At the time of his death, Lee and his former student Robert Schultz were completing revisions on a major theoretical paper on "The Physical Basis of Psychometric g and Primary Abilities." They propose that psychometrically-defined general intelligence results from correlated processing capabilities across structurally independent brain modules.

Lee also did important research in the areas of personality and psychopathology. Typical of his approach to the first area was his notion that we ought to measure personality traits as we do ability, in terms of maximal rather than typical performance—we should find out how extraverted a person can be, not just how extraverted he or she usually is. Typical of the work on psychopathology are the ongoing studies of Lee and his students involving the microscopically visible network of capillaries at the base of people's fingernails. A tangled pattern of these had been shown to be associated with a predisposition to schizophrenia. Lee's hypothesis was that this reflected a capillary fragility that might be present in the central nervous system as well, allowing free radicals to leak into the brain. The results so far are suggestive but not conclusive.

Teacher and Friend

According to the testimony of his graduate students, Lee was a highly effective mentor, who motivated students by insuring that their studies were interesting enough that they, and he, would want to know their results. He was quite flexible in terms of topics he would supervise, but he challenged students to think critically and to tackle questions fundamental to the core of human nature, and he showed his impatience with ideas and pursuits which he regarded as pedestrian. Lee conveyed a sense of intellectual excitement that was contagious, and he imparted to his students a sense of intellectual integrity, ambition, and passion for the truth.

Lee was a wonderful person—sympathetic, erudite, entertaining. He was an intellectual enthusiast, always full of new and exciting information. His personal charm and wide-ranging interests made him a central figure in the psychology department and in the broader community. His death brought forth an outpouring of tributes from colleagues, former students, and others. He is missed by everyone who knew him.

This memorial resolution was prepared by a special committee consisting of Professors Joseph M. Horn (chair), John C. Loehlin, and David B. Cohen. It is in part derived from an obituary "Lee Willerman (1939-1997)" *Intelligence*, 1997, **24**, 323-328.

Distributed to the Dean of the College of Liberal Arts, the Executive Vice President and Provost, and the President on April 20, 2000. Copies are available on request from the Office of the General Faculty, FAC 22, F9500. This resolution is posted under "Memorials" at: <http://www.utexas.edu/faculty/council/>

Selected Bibliography

- Leavitt, E. A., Rosenbaum, A. L., Willerman, L., & Leavitt, M. (1972). Intelligence of patients with retinoblastoma and their siblings. *Child Development*, **43**, 939-948.
- Poole, J. H., Maricq, H. R., Alson, E., & Willerman, L. (1991). Negative symptoms in schizophrenia and nailfold plexus visibility. *Biological Psychiatry*, **29**, 757-773.
- Raz, N., Willerman, L., Ingmundson, P., & Hanlon, M. (1983). Aptitude-related differences in auditory backward recognition masking. *Intelligence*, **7**, 71-90.
- Raz, N., Willerman, L., & Yama, M. (1987). On sense and senses: Intelligence and auditory information processing. *Personality and Individual Differences*, **8**, 201-210.
- Willerman, L. (1979). Effects of families on intellectual development. *American Psychologist*, **34**, 923-929.
- Willerman, L. (1979). *The psychology of individual and group differences*. San Francisco: W. H. Freeman.
- Willerman, L., Broman, S. H., & Fiedler, M. (1970). Infant development, pre-school IQ, and social class. *Child Development*, **41**, 69-77.
- Willerman, L., & Churchill, J. A. (1967). Birthweight and intelligence in identical twins. *Child Development*, **38**, 623-630.
- Willerman, L., & Cohen, D. B. (1990). *Psychopathology*. New York: McGraw-Hill.
- Willerman, L., Horn, J. M., and Loehlin, J. C. (1977). The aptitude-achievement test distinction: A study of unrelated children reared together. *Behavior Genetics*, **7**, 465-470.
- Willerman, L., Loehlin, J. C., and Horn, J. M. (1979). Parental problem-solving speed as a correlate of intelligence in parents and their adopted and natural children. *Journal of Educational Psychology*, **71**, 627-634.
- Willerman, L., Loehlin, J. C., & Horn, J. M. (1992). An adoption and a cross-fostering study of the Minnesota Multiphasic Personality Inventory (MMPI) Psychopathic Deviate scale. *Behavior Genetics*, **22**, 515-529.
- Willerman, L., Naylor, A. F., & Myrianthopoulos (1970). Intellectual development of children from interracial matings. *Science*, **170**, 1329-1331.
- Willerman, L., Schultz, R., Rutledge, J. N., & Bigler, E. D. (1991). In vivo brain size and intelligence. *Intelligence*, **15**, 223-228.
- Willerman, L., Schultz, R., Rutledge, J. N., & Bigler, E. D. (1992). Hemisphere size asymmetry predicts relative verbal and nonverbal intelligence differently in the sexes: An MRI study of structure-function relations. *Intelligence*, **16**, 315-328.
- Willerman, L., & Schultz, R. T. (under review). The physical basis of psychometric g and primary abilities.
- Willerman, L., Turner, R. G., & Peterson, M. (1967). A comparison of the predictive validity of typical and maximal personality measures. *Journal of Research in Personality*, **10**, 482-492.