

At a meeting of the FACULTY OF ARTS AND SCIENCES on April 5, 2022, the following tribute to the life and service of the late Jerome Kagan was spread upon the permanent records of the Faculty.

JEROME KAGAN

BORN: February 25, 1929

DIED: May 10, 2021

Jerome Kagan, one of the most influential psychologists of the past century, died on May 10, 2021, while visiting his daughter, Janet, in Chapel Hill, North Carolina. He was 92 years old. Kagan pioneered the integration of biological and psychological methods in his landmark longitudinal studies of child development.

Born in Newark, New Jersey, on February 25, 1929, he was the grandson of Eastern European immigrants and the son of Joseph and Myrtle Kagan who ran a shoe store in Rahway, New Jersey, where he attended elementary and high school. Kagan enrolled at Rutgers University in 1946 keen to study biology. But his growing interest in behavioral development led him to pursue graduate studies in psychology at Yale University, where he worked in the laboratory of the eminent physiological psychologist Frank Beach. His dissertation research involved testing whether male rats would learn the correct response in a T-maze even if their stimulating intromissions failed to result in the reward of an ejaculation.

His academic career began in the fall of 1954 when he was appointed an assistant professor focused on human development at Ohio State University, but only months later he was drafted and assigned to a West Point Army Hospital research team. After Kagan's service, he returned to Ohio but not to the university. Instead, he accepted an offer to oversee a longitudinal study at the Fels Research Institute in Yellow Springs, Ohio, in 1957. The Institute had recruited a large cohort of subjects, assessing them repeatedly from infancy through adolescence. Kagan synthesized these data and conducted follow-up assessments of the now-adult subjects. The findings appeared in his first book, co-written with Howard Moss, *Birth to Maturity: A Study in Psychological Development* (1962). The key conclusion was that psychological attributes of children do not stabilize until about six years of age. Extreme fearfulness was the sole exception, emerging early in infancy.

Kagan was appointed Professor of Developmental Psychology at Harvard in 1963. His first major project here involved a two-year longitudinal study that revealed that all infants between the ages of 8 and 12 months begin to attend to stimuli discrepant from their previous

experience. This reliable finding motivated Kagan to ponder the role of biology in human psychological development. Entering the field in the decade following the Second World War, Kagan had been in the grip of a zeitgeist that had shunned biology and emphasized behaviorism, awarding overwhelming causal significance to the child's environment.

In 1971 Kagan spent a sabbatical observing children in an impoverished village in Guatemala. His findings were startling, further underscoring his focus on biological maturation. Despite their environmental deprivation, these infants developed the basic cognitive capacities of their American counterparts, although somewhat later. His work implied that children flourish across diverse child-rearing settings and practices, which working parents with children in daycare found reassuring.

Kagan's most influential program was his prospective longitudinal research on temperament and behavioral inhibition in children, conducted with Nancy Snidman, J. Steven Reznick, and Cynthia Garcia-Col. The study was motivated by the observation that animals either approach, avoid, or freeze in the presence of novel, unfamiliar stimuli and situations. Kagan found that infants likewise differ dramatically in their response to novelty (e.g., a mobile hovering above them). Infants in the high-reactive group cried and flailed their limbs upon seeing an unfamiliar stimulus, whereas those in the low-reactive group exhibited rapt attention to it. Each group, subsequently termed behaviorally inhibited and uninhibited, comprised about 25 percent of the children, whereas the majority fell in the middle.

Kagan's team repeatedly tested, unobtrusively observed, and rated the behavior of the children throughout the course of development, culminating in early adulthood, with exposure to novel stimuli suitably adjusted to the subject's age. Moreover, Kagan introduced tracking of biological measures, such as heart rate and variability, in tandem with the videotaped observations. His data suggested that children high and low in behavioral inhibition formed two discrete, categorical temperamental types. Behaviorally uninhibited children engaged easily with the interviewers, speaking spontaneously. Novel stimuli captivated their attention and motivated their approach. They were gregarious, confident little extroverts. The behaviorally inhibited children were serious, quiet, reluctant to engage with novel stimuli, and characterized by activation of the sympathetic nervous system. Although many of these very shy youngsters found academic and occupational niches compatible with their temperamental bias, others proved at risk for developing diagnosable anxiety disorders in adolescence and beyond, typically social anxiety disorder. Some of them outgrew their inhibition, moving into the middle group; few became uninhibited. Despite honoring biology, Kagan was not a genetic determinist. He viewed temperament as an inherited proclivity whose manifestations were subject to modification.

Kagan's formal retirement was characterized by immense productivity. After closing his research laboratory, he continued to collaborate with colleagues with whom he co-wrote empirical publications. But most of his efforts were directed to writing a series of books,

integrating diverse bodies of knowledge from neuroscience, genetics, developmental biology, clinical psychology, sociology, and history. He warned psychologists against relying on a single source of data, such as self-reported mental states, and he criticized those who ignored context when applying complex constructs. He objected to using the term *anxiety* to denote the emotional state of a rat reluctant to enter a well-lit chamber or an agoraphobic person wary of entering a shopping mall for fear of having a panic attack.

Forever skeptical of grand theories in psychology, Kagan described himself as a Baconian empiricist who followed the data wherever it led. He was a gregarious, ceaselessly curious, and intellectually generous polymath. His colleagues recall how he would enthusiastically seize them by the arm in the elevators of William James Hall and ask, “And what have you discovered today?” His many former doctoral students recall times when they found his powerful, wide-ranging intellect intimidating. But they all share fond, vivid memories of how he transmitted his love of science, inspiring them to pursue careers driven by the thrill of discovery.

Respectfully submitted,

Susan Carey

Daniel T. Gilbert

Steven Pinker

Richard J. McNally, Chair