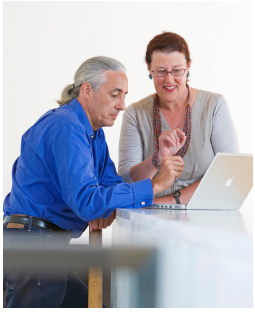
Klaus J. Jacobs Research Prize 2010 – The Recipients



Prof. Avshalom Caspi and Prof. Terrie Moffitt (joint award)

Avshalom Caspi (Israeli and US-American, born 1960) is Professor of Psychology and Neuroscience at Duke University, USA, and Professor of Personality Development at King's College London, UK. Caspi grew up in Israel and received his professional education in the US (Ph.D. at Cornell University). His research spans the fields of psychology, epidemiology, and genetics. His current work is concerned with three broad questions: How do childhood experiences shape the course of health inequalities across the life span? (2) How do genetic differences between people shape the way they respond to their environments? (3) What are the best ways to assess and measure personality differences between people?

For his research on human development and mental health, Caspi has received awards from the American Psychological Association, the Society for Research in Adolescence, the American Public Health Association, and the International Society for the Study of Behavioral Development, as well as the Mortimer D. Sackler MD Prize for Distinguished Achievement in Developmental Psychobiology. He has served on the Executive Council of the International Society for the Study of Behavioral Development, and is involved in international teaching and training initiatives in developmental psychopathology.

Terrie Moffitt (British and US-American, born 1955) is Professor of Psychology and Neuroscience at Duke University, USA, and Professor of Social Behavior & Development at King's College London, UK. She also works, together with Caspi, at the Dunedin School of Medicine, in New Zealand, where she is associate director of the Dunedin Longitudinal Study, which follows 1000 people born in 1972 in New Zealand. As of 2010, she has studied the cohort from birth to age 38 so far. Terrie Moffitt studies how genetic and environmental risks work together to shape the course of abnormal human behaviors and psychiatric disorders. Her particular interest is in antisocial and criminal behavior, but she also studies depression, psychosis, and addiction. She is a licensed clinical psychologist, who completed her clinical hospital training at the UCLA Neuropsychiatric Institute. For her research, Moffitt has received the American Psychological Association's Early Career Contribution Award

(1993) and Distinguished Career Award in Clinical Child Psychology (2006). Moffitt was also awarded a Royal Society-Wolfson Merit Award, and was co-recipient of the Stockholm Prize in Criminology. She is a fellow of the Academy of Medical Sciences, the American Society of Criminology, the British Academy, Academia Europaea, and the American Academy of Political and Social Science. She has served on investigative panels for institutions such as the Nuffield Council on Bioethics (ethics of behavioural genetics research) and the US National Academy of Sciences (research into firearms and drug markets).

Caspi and Moffitt, who are married to each other, have compiled a distinguished record of scientific accomplishments contributing to an informed understanding of human development and mental health. Either alone would be a credible nominee for the KJJ Research Prize since their respective bodies of work have received wide recognition for contributing to successful youth development through sustained research over the past quarter-century. Notwithstanding their individual contributions, the KJJ Research Prize Jury has argued that Caspi and Moffitt's joint work has developed its own scientific synergy, resulting in a further distinct combined profile; they share an academic identity that spans Europe and America and about half their publications are together. Their collaborative work over two decades demonstrates their extraordinarily wide-ranging contribution to the understanding of genetic, situational, and experiential influences on youth development. Beyond the purely scientific value of their research, their work has had wider implications for educational and social policy that promotes child and youth development that fosters productive lives as adults.

Moffitt and Caspi are best known for three central contributions, described next:

- **Understanding origins and consequences of antisocial behavior:** Young people engaging in delinquent behaviors can be characterized in a taxonomy of two distinct types: *"life-course persistent"* antisocial behavior (very rare, ~5%) and *"adolescence-limited"* antisocial behavior (~95%). This taxonomy had a profound impact on psychiatry, psychology, criminology, and law. Legal scholars have used it to argue for reforming the American justice system, noting that *"adolescence-limited"* young offenders should be diverted to avoid a damaging criminal record, and that *"life-course persistent"* young offenders are not competent to be prosecuted in adult courts. Clinicians use it to screen for *"adolescence-limited"* young offenders, because they are candidates for treatment. Policy makers have used the idea to argue for the vital importance of preschool interventions to strengthen parents' ability to rear vulnerable children.

- **Study of gene – environment interaction:** A gene-environment interaction (GxE) occurs when the effect of exposure to an environmental factor on health and behavior is conditional upon a person's genotype, or conversely, when the genotype's effect is moderated by the environment. The notion of gene-environment interaction (GxE) has

been around for many years, but remained an abstract statistical concept in psychology and psychiatry until 2002 when Moffitt and Caspi reported convincing evidence of the complex interplay of genetic and environmental influences on violent and antisocial behavior in humans. Since then they have found GxE interaction evidence in several other domains of human development and behavior. The research caused a stir because it held out the prospect of a simple predictive test allowing those who were likely to commit violent acts as adults to be identified in childhood. It triggered speculation that in future it might be possible to prevent such behavior by early intervention using drugs or better parenting. This work also remains to be controversial, not because of the methodology of the research team (which was generally agreed to be sound!) but because of its broader implications. Modern genetic research such as this increasingly demonstrates that the old arguments about *nature* ***or*** *nurture* are misleading: it is the interaction of both, of genes and the environment that matters.

- **Documenting the childhood origins of adult mental and physical health:** Moffitt and Caspi discovered the first evidence that as many as half of adults with psychiatric disorder had a diagnosable disorder before age 15. These findings underscore the importance of paying attention to children's mental health problems, and recommend that governments should enhance the delivery of mental health prevention and treatment services for children. Moreover, they encourage the application of population-screening methods in primary care doctor's offices and in schools to identify and to help those children most needing treatment.