Conference explores risks and brain mechanisms

Cornell University

Most diseases people die from are those borne of bad choices. Whether the decision is to have unprotected sex, smoke, drink and drive, not save for retirement, or to eat fries with that burger, risky decisions permeate our lives, sometimes with disastrous consequences, which is why researchers gathered on campus Sept. 22-23 to better understand risk-taking.

At the Third Biennial Urie Bronfenbrenner Conference, "The Neuroscience of Risky Decision Making," neuroscientists, neuroeconomists and social scientists explored scientific theories about the brain mechanisms underlying risky decision-making, paving the way for translation of basic science into policy and practice.

"From neurons to basic psychological processes, such as memory and meaning, to complex social and economic behavior, we need to build a dialogue across disciplines," said Valerie Reyna, professor of human development in the College of Human Ecology and co-director for Cornell's Center for Behavioral Economics and Decision Research. "We need a common language and collaboration to improve educational and health outcomes and to advance neuroscience research."

The conference, co-organized by Reyna and Vivian Zayas, Cornell assistant professor of psychology, drew scholars from as far away as Europe to share research on such topics as brain maturation, neural responses to rewards and punishments at different ages, emotional regulation and self-control.

Many of those who participated are founders in their field. Paul Glimcher, a professor in New York University's Center for Neural Science and of psychology and economics, for example, literally wrote the book on neuroeconomics in 2003 when he released his seminal work on the biological foundations of economic behavior. At the conference, he reported on some of his findings, such as work that suggests that neural networks are connected -- hungry people, for example, make riskier decisions not just about food, but also about money.

Antoine Bechara, professor of psychology and neuroscience at the University of Southern California, researches the decision-making capabilities of patients with brain damage, such as the case of the 40-cigarette-a-day smoker who no longer had the urge to smoke after suffering a stroke. Bechara's findings shed light on the workings of the brain systems involved in decision-making and addiction.

One of the developmental neuroscientist pioneers, University of Pittsburgh's Beatriz Luna, focuses on the transition from adolescence to adulthood. She reported that incentives have a magnified effect on cognitive control in adolescents, compared with adults. Adolescents performing a particular cognitive control task seem to require incentives in order to succeed, she said, suggesting immaturities in their reward system.

Participants, including program officials from the National Institutes of Health and the National Science Foundation, also debated core assumptions about reward sensitivity and self-control, and their implications for practice and policy.

"There is such tremendous synergy among fields," said Reyna. "Collaborating and thinking together is important for setting a research agenda that will shape the field and have big payoffs in terms of public health and well-being."

The event was the kickoff to multiple interdisciplinary initiatives on campus, including the acquisition of a new neuroimaging facility to be housed in the College of Human Ecology. The American Psychological Association plans to publish a book based on the papers presented at the conference.

The Bronfenbrenner Center for Translational Research, Center for Behavioral Economics and Decision Research, and Institute for the Social Sciences, all at Cornell, co-sponsored the conference.

Karene Booker is an extension support specialist in the Department of Human Development.

SOURCE [1]

Links:
[1] http://www.news.cornell.edu/stories/Oct11/NeuroscienceRisks.html