



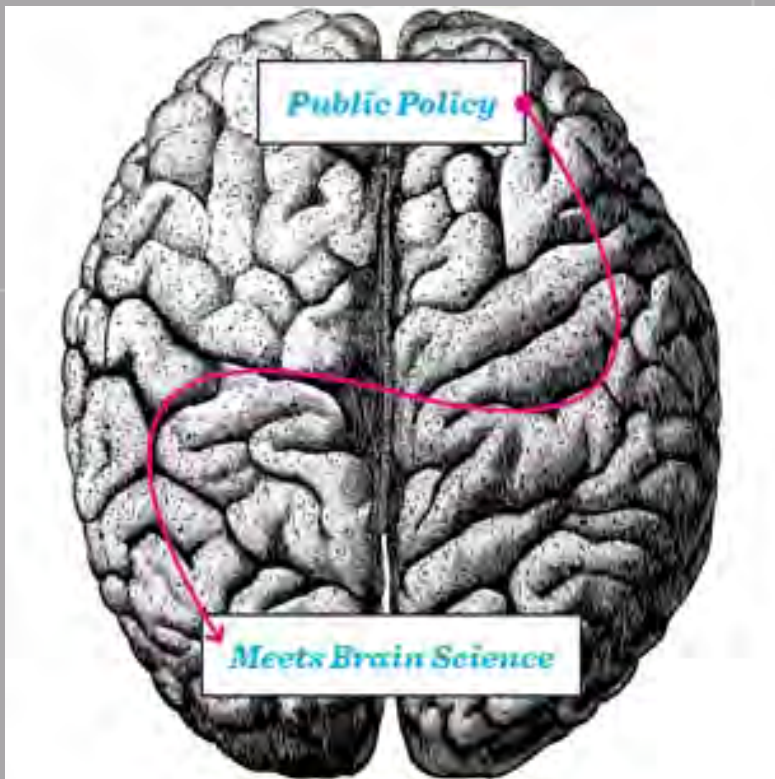
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Public Policy Meets Brain Science

CAN NEUROSCIENCE BE HARNESSSED TO MAKE PUBLIC POLICIES MORE EFFECTIVE AND ATTRACTIVE?



Radcliffe Magazine

By Corydon Ireland

Decisions, decisions. They come to us from the neural machinery housed in the human brain, a three-pound device teeming with 86 billion neurons. These flashing lights of connectivity create electrochemical signals that, minute by minute, define who we are and—of special importance to society—what we want.

The brain, in ways that remain largely a mystery, influences how we make decisions, a form of personal behavior that considered collectively has immense social and economic consequences. And decision-making is of special interest to lawyers, economists, educators, doctors, and those who write the public policies that preserve the commonweal. So it follows:

The brain itself should interest them too. Can neuroscience be harnessed to make public policies more

effective and attractive? To influence health outcomes such as rates of obesity and diabetes? To spur social good such as better planning for retirement?

These questions brought together a varied group of experts for “Public Policy and the Brain,” a two-day Exploratory Seminar hosted last fall by the Radcliffe Institute. Every year, Harvard faculty members or Radcliffe fellows organize about 20 of these explorations.



Seminar leaders Cass R. Sunstein of Harvard Law School co-organized the seminar with Tali Sharot of University College London. Photo by Webb Chappell

Lawyers and economists met with psychologists and neuroscientists to discuss how brain science might help public policy. The proceedings were charged, but optimism flared around the notion that disparate disciplines could cooperate. “I’m someone who loves to string together different streams of work,” said the social psychologist Jennifer S. Lerner, a 2013–2014 Radcliffe fellow. (She’s a professor of public policy and management at Harvard Kennedy School, where she cofounded the Harvard Decision Science Laboratory.)

Seventeen experts presented studies and then quizzed and challenged one another. Afterward they began sharing papers on the Radcliffe Institute website to continue dialogue and spur collaboration. They expect that in the future a book of their collected work will plumb neuroscience’s potential as a public policy tool.

“In 10 years, I expect that this is going to be immensely influential and very well known,” said Cass R. Sunstein ’75, JD ’78, a Harvard Law School professor and the Walmsley University Professor. (He has written widely on behavioral law and economics and for a time ran the White House Office of Information and Regulatory Affairs.) A government Behavioral Insights Team is already at work in the UK, Sunstein said. “Nations all over are thinking of creating these entities, focusing on actual behavior, and the brain is certainly relevant to that.”

HIGH STAKES

The Columbia University epidemiologist Claire Wang is an expert in food-choice strategies who creates mathematical models of decision-making. At the seminar, she drilled down to the level of 16-ounce sodas, an arena of fast-food choice that—writ large—contributes to a global epidemic of obesity and diabetes. The public health implications of personal food choices “are pretty significant,” agreed Paul W. Glimcher, who runs a New York University lab on decision-making that blends the disciplines of economics, psychology, and neuroscience. High stakes mark the environmental arena too, where decisions can make the seas rise and drought descend. The effect of choices on nature was a seminar leitmotif. Elke Weber, of the Earth Institute at Columbia and a scholar of risk-taking and decision-making, presented on the psychology of preferences. The Vanderbilt University law professor Michael P. Vandenberg, who studies informal social regulation as a means of shifting behavior, recommended a new concept: a “climate legacy registry” to systematize pledges to future generations. Giving personal choice a longer time horizon could have a huge impact, Weber agreed. But she added, with modern fatalism, “You only want to invest in the future if the future is going to be around.”

The decision theorist Richard Zeckhauser, the Frank Plumpton Ramsey Professor of Political Economy at Harvard Kennedy School, presented a paper on ignorance and public policy. “People make poor choices even after they recognize their ignorance,” he said—and Americans spend too little time planning for the next crisis.

YELLOW LIGHT

Let's be cautious about using neuroscience in public policy, said Glimcher. "These are very, very early days. I see risks everywhere." One, he said, was reading too much into what brain scans—a staple of brain science research—can tell us about making choices.

Over the two days, Sunstein kept coming back to what neuroscience might offer in the policy realm—including insights into what many researchers already see: that people often behave irrationally, despite the notion in classical economics that a "rational actor" is at work in making choices. "Some people don't pay attention to their future selves," he said, offering a common example of economic irrationality. "Patient people consider themselves a year from now. But impatient people see themselves [in the future] as strangers."

Tali Sharot, a cognitive scientist at University College London, added that people often display "unrealistic optimism," despite ample discouraging evidence. "We have input all the time that should change our minds."

This irrepressible natural optimism could, however, inform policy-making: "Everyone learns better from good news," said Sharot, who tracks optimism in brain regions. (But under stressful conditions, she added, our ability to learn from bad news returns.)

Stress is of special interest to Lerner, the social psychologist, whose main area of inquiry is how judgment and decision-making are affected by emotion—a factor that was left out of the science of behavior until the 1980s, she said, because it was "not considered real." She has found, for example, that anger, unlike fear, makes people feel optimistic. "It gives people a sense of individual control and predictability," Lerner said.

INSIGHTS FROM MANY DISCIPLINES

Yale's **LAURIE SANTOS** studies primate cognition, and has discovered that monkey business can be as economically irrational as the human kind.

SIAN L. BEILOCK, a University of Chicago psychologist, studies intersections between neuroscience and the classroom, including the impact of stress on performance.

NICHOLAS D. WRIGHT, a neuroscientist at the Carnegie Endowment for International Peace, has studied how brain science can inform the strategic political decisions made during international confrontations.



Laurie Santos photo courtesy of Yale University; Sian L. Beilock photo by Dan Dry; Nicholas D. Wright photo courtesy of Carnegie Endowment for International Peace

LOOKING AHEAD

Sunstein predicted that beneficial synergies between neuroscience and public policy will evolve and grow. Looking into the future of those synergies was the behavioral economist David Laibson, who directs Harvard's Foundations of Human Behavior Initiative. He believes that "genoeconomics," the study of how genes influence economic traits such as risk-taking and generosity, "will transform social sciences in the next 30 years," in part by uncovering phenotypes that reveal likely educational

achievement. But this “science fiction future” also raises questions about privacy and fairness, Laibson said. “What are the consequences for the world we are used to?”

The ethical quandaries that will beset genoconomics pointed to another seminar theme: What about the moral sense that, classically, informs good decision-making? Harvard psychologist [Joshua D. Greene](#) said that moral sense is compromised by the “moral tribes” that divide the modern world. (Greene recently published a book titled *Moral Tribes: Emotion, Reason, and the Gap Between Us and Them*, Penguin, 2013.) Disparate cultures of behavior have yet to find common ground. Everyone has “moral machinery on board,” said Greene, and these “automatic settings” regulate behavior pretty well. But confronting strangers from other moral tribes reveals “the inflexibility of moral intuition,” he said. “We have heartstrings, but they’re not designed to be tugged from very far away.”

Within the human brain’s teeming neurons are connections we all share and that influence moral decisions. Science is still on the hunt for them. Meanwhile, Greene has an aspirational name for where neural commonalities might lead: metamorality—the behaviors we can all agree on, though imperfectly.

The origins of decision-making remain a mystery, but neuroscience suggests that physical regions of the brain are influential. Knowing more might bring humanity closer to what for policymakers is the Holy Grail: good decisions, which make public civility, health, and prosperity more likely.

Corydon Ireland is a staff writer for the Harvard Gazette.

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