

Hello, I am Todd Davies, the Associate Director of the Symbolic Systems Program, and I am here to welcome you on behalf our Program to another in our series of Distinguished Speaker events. The Symbolic Systems Program is an interdepartmental degree-granting program at Stanford, which brings together Bachelors and Master of Science students with faculty who study symbolic systems in two broad senses: systems that are composed of symbols, such as natural languages, programming languages, logics, and notational systems; and systems that produce and use systems, such as the human mind and brain, computers, networks, and complex social systems.

Since 1991, the Symbolic Systems Program has annually hosted special lectures by speakers who have made distinguished contributions to the theory or applications of symbolic systems. Past speakers have included Steven Pinker, Doug Engelbart, Daniel Kahneman, Marvin Minsky, Alison Gopnik, Edward Snowden, and our recent speaker earlier this year, Maryanne Wolf. We generally only host one per year, but this year we have two, to make up for our lack of an event in 2018.

I first met Daniel Ellsberg in 1987, when he visited Stanford as a guest of my dissertation advisor, the late psychologist Amos Tversky. Amos, together with Danny Kahneman, are widely credited as pioneering the field now known as behavioral economics. But Amos beamed with pleasure when Dan visited our campus that year, describing Dan as one of his heroes. I soon learned that Dan had done perhaps the earliest work that is still part of the canon in the field of behavioral decision theory, especially in his 1961 paper which introduced the now-famous Ellsberg paradox of decision theory. In a simple formulation, the Ellsberg paradox is that people are more willing to wager on a fair coin than on a coin with an unknown bias toward heads or tails, even though the probability assigned to heads and tails is assumed to be 50% for each outcome under both bets. The paradox captures our reluctance to bet on probabilities that are vague or ambiguous, and was a major challenge to the theory of subjective expected utility developed by Len Savage, adapting the work of John von Neumann and Oscar Morgenstern in the 1940s and 50s at the dawn of decision theory. The Ellsberg Paradox, together with an earlier challenge to decision theory posed by Maurice Allais, formed the basis for the area that became known as the psychology of heuristics and biases, or the study of judgment and decision making. This was the field that was brought to prominence among economists by Tversky and Kahneman (who were psychologists), which led to Kahneman winning the Nobel Prize for Economics in 2002. That came, tragically, six years after Tversky's death at the age of 59.

Amos Tversky led the Symbolic Systems Program's concentration in Decision Making and Rationality, and tonight's lecture is in part a tribute to him. One of Amos's greatest worries was the topic of tonight's program, namely the prospect of nuclear war. After his brief career as an academic, Dan Ellsberg moved into work as a defense analyst and nuclear planner at the Rand Corporation. His role as a whistleblower is that for which he is most well known, having made the profound decision to leak the Pentagon Papers to the New York Times and Washington Post in 1971. Ellsberg's life is chronicled in two Oscar-nominated films. He is the subject of the documentary *The Most Dangerous Man in America*, and a central if mostly offscreen character

in the movie *The Post*, starring Meryl Streep and Tom Hanks. What is less well known is his role as an architect of U.S. nuclear policy, which is the subject of his recent book *The Doomsday Machine: Confessions of a Nuclear War Planner*. Tonight's program will focus on that work.

Before we continue I just want to highlight something about which Dan has spoken often: that his inspiration for turning from being a Cold War defense analyst to an antiwar activist came initially from meeting Randy Kehler, who was at the time a Stanford student active in the antiwar movement, and then also from David Harris, former Student Body President at Stanford and founder of the national draft resistance movement known as the Resistance, as well as David's former wife, Joan Baez, who still lives in Palo Alto. So in many senses, we are welcoming Dan to a place on which he has had a profound impact, and which he says has had a big impact on him.