

Chapter 9

Psychology of Probability: Predictable Irrationality

There is a huge body of academic research, building on 1970s work of psychologists Daniel Kahneman and Amos Tversky, on how people make decisions under uncertainty, and in particular decisions involving risks and rewards. Nowadays this topic forms part of broader disciplines such as *cognitive science* (\mathcal{W}) and *behavioral economics* (\mathcal{W}). Conclusions are mostly based on experimental or survey data, typically obtained from the most convenient source of subjects (undergraduates attending psychology courses) and based on hypothetical questions – *what would you choose if presented with these choices?*. In this regard it is quite different from our Lecture 1; here we are prompting people to think about chance, whereas there we were seeking to understand in what contexts people (unprompted) perceive chance as playing a role in their lives.

There are many accounts summarizing the topic. Perhaps the least technical brief account is in Peter Bernstein’s *Against the Gods: The Remarkable Story of Risk*. A book length account is in Raymond Nickerson’s *Cognition and Chance: The psychology of probabilistic reasoning*. This work touches upon many different topics, and gives around 1000 references, so it’s an invaluable resource for seeing the big picture of what scholars have thought about, and for leads into the research literature. Dan Ariely’s *Predictably Irrational*, though not so directly relevant to issues of chance, is an entertainingly well written “popular science” book on behavioral economics.

I have no original perspective on the topic, so will not write out a lecture. The closest to what I *would* write is an article by Eliezer Yudkowsky¹. What I say in class is material from that paper and the books above.

¹*Cognitive biases potentially affecting judgement of global risks,*
<http://singinst.org/upload/cognitive-biases.pdf>