Behavioral Economics

Topic 1: Choice under Uncertainty
Lecture 4: Evidence that Contradicts Expected Utility, continued

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Taking Stock

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- Finished talking about the standard model – Expected Utility Theory
- Started reviewing evidence that contradicts the standard model

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- Where the evidence points: reference dependence

Logistics:

- Problem Set 2 is posted today – due Thursday, September 24. It is long *by design*: start early
- Problem Set 1 is due Tuesday, September 15 — detailed solutions posted after
  - **Please read them carefully** – treat this as part of the assignment
  - A big way you'll learn in this class is seeing where you went wrong – it's fine to make mistakes, but it's crucial to understand when and why

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- **Big Idea:** This explanation doesn't work, because according to EU, "anything but virtual risk neutrality over modest stakes implies manifestly unrealistic risk aversion over large stakes."

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With a little work, one can show that rejecting the bet implies that $\rho > 18.17026$.

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Point: The degree of risk aversion required to explain your rejection of the moderate-stakes gamble implies ridiculous behavior for larger-stakes gambles.

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- Point: Curvature over small stakes indicates **implausible** risk aversion at large stakes.
- Intuition: The marginal utility of money must decrease extremely rapidly.
- Alternate Intuition: Curves look like straight lines when you zoom in close enough

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  (I'm reasonably confident those students would take that gamble.)

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> *Indeed, what is empirically the most firmly established feature of risk preferences, loss aversion, is a departure from expected-utility theory that provides a direct explanation for modest-scale risk aversion. Loss aversion says that people are significantly more averse to losses relative to the status quo than they are attracted by gains, and more generally that people's utilities are determined by changes in wealth rather than absolute levels. Preferences incorporating loss aversion can reconcile significant small-scale risk aversion with reasonable degrees of large-scale risk aversion (p.1288)*

Prospect Theory

Outline

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Some concepts are hard to get your head around. It can be easier to think about things in the extreme limit.

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- Think about the limit case: a person who is *infinitely* risk averse.
- Now think about the other limit case: a person who is risk neutral.
- In between those lies reality. The **definition** of the term only offers that a person is a teensy tiny itty bitty bit above risk neutrality. How she actually behaves depends on **how** risk averse she is

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Helpful tip to build intuition for a problem: think about limit cases.

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  [The eagle switches back.]

- “Ooh! Whoa, that actually feels good after the crotch!”

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$\Rightarrow$ We should consider the modified utility function $u(x; r)$, not just $u(w + x)$, where r is some reference point or reference level.

We'll explore this idea for the next few lectures. There are deep implications for economics in this simple observation.

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I don't know.

Regardless of your views, it is quite likely that someone in here disagrees with you. It is also exceedingly likely that one (or both of you) are wrong about something that you believe to be true.

So we learn to think and we learn to talk to one another in a fruitful way. And we do this because there *is no alternative.*

Next Class

Today: Evidence that contradicts EU

Next class: An alternative model: Prospect Theory

Remember:

- Problem Set 1 is due next class – Tuesday, September 15
- Problem Set 2 is due Thursday, September 24 – keep chipping away at it