Teaching Judgment and Decision Making Through the "Rationality Debate"

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prepared for the BDRM Pre-Conference on Teaching Decision Making, June 15, 2006

Overview

- Course: **"The Rationality Debate" - a small reading and discussion seminar** aimed at juniors and seniors studying cognitive science at Stanford
- Taught 3 times: Spring 2001 (two sections), Winter 2002, and Winter 2004
- **Student discussion leaders** rotated
- Course structured around normative theory-derived experimental research, counterposing "heuristics and biases" school against its critics
- **Debate angle gave students a framework** for understanding the "first generation" literature in JDM, but is less well suited to "second generation" literature (e.g. "behavioral economics")

Course Description

"Evidence and perspectives on whether or not the human mind is generally rational. Normative frameworks for rationality such as probability and utility theory are contrasted with descriptive, experimental studies. Opposing views are represented through readings from disciplines including psychology, statistics, philosophy, and economics. Prerequisites: familiarity with the basic theory of probability. Recommended [prior course]: Introduction to Cognitive Psychology. Limited enrollment. (3 [quarter] units)"

Format

- Each session 2 to 2.5 hours: (a) **overview of week's reading** by 1-2 students, (b) **discussion** led by students with instructor as interlocutor, (c) **preparatory material** from instructor for next reading (mini-lectures and/or handouts).
- Student work: **discussion leading**, **final paper** and two **shorter commentaries**

Organization of Readings

Each version of the course was structured around a set of research domains or units, defined by sets of readings -- usually **journal articles by primary authors** -- providing...

- a normative theory -- introduced either in a separate reading, as background in a "mini-lecture", or embedded in a paper about descriptive research,
- experimental research, generally from the Tversky/Kahneman "heuristics/biases" school, arguing for systematic departures from normativity in human judgment and decision making, and
- experiments and/or theoretical arguments supporting an adaptationist or rational analysis view of human behavior in the domain in question, sometimes in explicit opposition to the heuristics and biases interpretation.

Typical Units

- **The Wason selection task**

Overview by Baron from *Thinking and Deciding*; Evolutionary view by Cosmides and Tooby ("Cognitive Adaptations for Social Exchange"); Rational analysis view by Chater and Oaksford

- **Probability theory and judgment heuristics**

Original articles by Tversky and Kahneman (e.g. "The Psychology of Prediction", "Judgment Under Uncertainty: Heuristics and Biases"); Critique by L.J. Cohen (e.g. "On the Psychology of Prediction: Whose Is the Fallacy?"); Responses and Counter-responses from both sides

- **Base-rates**

Behavioral and Brain Sciences target article by J.J. Koeler ("The Base Rate Fallacy Reconsidered: Descriptive, Normative, and Methodological Challenges") plus responses – students divide up responses for discussion, and the discussion reviews articles read earlier in the course

- **Prospect theory**

Background reading by Savage, Ellsberg, Raiffa; K&T '81 ("The Framing of Decisions and the Psychology of Choice"); Luce ("Where Does SEU Fail Descriptively?"); K&T '92 ("Advances in Prospect Theory"); Camerer ("PT in Wild")

- **"Fast and frugal" reasoning**

Gigerenzer and Goldstein ("Reasoning the Fast and Frugal Way"); Chater et al. ("Fast, Frugal, *and* Rational")

Observations/Conclusions

- Initial simplification of the literature into "pro" and "con" concerning whether humans are generally rational set up good discussions about the **meaning of rationality**, the **normative-descriptive-prescriptive** trichotomy, and where the **rational/irrational dichotomy** breaks down
- Presenting readings in a sequence of **thesis**, **antithesis, and (sometimes) synthesis** as predicted helped upper division undergraduates see the dialectic of science, often missing from lecture and survey courses
- Emphasis on **original classic papers** as well as **recent research** helped students see how research is actually done and led to good discussions of methodology; it also interested the few graduate students who enrolled
- Setting up the course as a question or series of questions about rationality provided students **motivation to apply earlier education** and to **think critically**
- But... students taking the course to fulfill a requirement or who were otherwise uninterested in the material tended to drag down the discussion; although guidelines for discussion leading and participating were provided, the **quality of discussion was mixed** – *asking more specific questions in advance would have helped*

Student Reactions

- Overall ratings: **3.6** / 5 (24/31, 2001); **3.9** / 5 (12/19,2002); **4.1** / 5 (10/13,2004)
- A few representative comments:

"Very good. Enjoyed seeing multiple perspectives on the material."

"the real stuff. no second hand bull crap."

"Some [readings] were a little long, some were a little too math-oriented."