

Psychology 237: Human Rationality

Winter 2020

Mondays, 2:00 - 5:00, Crick Conference Room (3rd floor, Mandler Hall)

Instructor: Craig McKenzie Email: cmckenzie@ucsd.edu

Syllabus: https://pages.ucsd.edu/~mckenzie/Psychology_237.pdf

Overview: Rational explanations of behavior are common and useful in many areas of cognitive psychology (e.g., visual perception, category learning, memory, causal induction). However, rational explanations in the area of judgment and decision making (JDM) are few and far between. In fact, the mainstream view in JDM is that choice behavior departs systematically and routinely from rationality. Attempts to demonstrate and explain the gap between rationality and behavior describes most research in JDM *for almost 50 years* (perhaps since Kahneman & Tversky claimed in 1972 that “man is apparently not a conservative Bayesian: he is not Bayesian at all”). Many of the readings in this seminar challenge the mainstream JDM view, arguing that rational analysis of JDM tasks often reveals that rationality and behavior converge rather than diverge. Rational explanation of JDM behavior that is otherwise considered irrational is not only interesting, it is also more parsimonious and connects JDM with other areas of cognitive psychology at a theoretical level.

Requirements:

1. Thoughtful reading and discussion are required. Participants must do the required reading each week and come to class prepared to discuss it.
2. Each participant must choose (at least) one required reading and lead the discussion for that reading. (I will lead the discussion on Week 1.)
3. Before each meeting (except weeks 1, 3, and 7), each participant must provide at least one potential discussion question for *each* required reading. (Link to a shared document is coming soon.)
4. For week 3 (Jan 20) and week 7 (Feb 17; both days are holidays and *there is no meeting*), email me a 3-page(-ish) double-spaced analysis of/reaction to that week’s required reading. These analyses are due by midnight on the day *after* the (otherwise scheduled) meeting.
5. For a final paper, participants can either write a 3-5 page (double-spaced) (a) analysis of week 10’s three required readings (which should take into account the previous 9 weeks’ reading...) or (b) research proposal related to the course’s content. Email me your paper by midnight on Monday, March 16 (finals week).

Grades will depend on how well the above requirements are met.

→ Required reading
** Recommended background reading
* Suggested additional reading

Week 1 (Jan 6): Contrasting Views I

→ Shafir, E., & LeBoeuf, R. A. (2002). Rationality. *Annual Review of Psychology*, 53, 491-517.

<https://pages.ucsd.edu/~mckenzie/ShafirAnnualReview.pdf>

→ Chater, N., & Oaksford, M. (1999). Ten years of the rational analysis of cognition. *Trends in Cognitive Sciences*, 3, 57-65.

<https://pages.ucsd.edu/~mckenzie/Chater&Oaksford1999TiCS.pdf>

Week 2 (Jan 13): Contrasting Views II

→ Stanovich, K. E., & West, R. F. (2000). Individual differences in reasoning: Implications for the rationality debate? *Behavioral and Brain Sciences*, 23, 645-665. (Target article only.)

<https://pages.ucsd.edu/~mckenzie/StanovichBBS.pdf>

* “Open Peer Commentary” and “Author’s Response” (pp. 665-717). (I suggest that you look over and selectively read some commentaries on the target article and Stanovich & West’s response.)

→ Funder, D. C. (1987). Errors and mistakes: Evaluating the accuracy of social judgment. *Psychological Bulletin*, 101, 75-90.

<https://pages.ucsd.edu/~mckenzie/FunderPsychBull1987.pdf>

Week 3 (Jan 20): Ecological Rationality

There is no meeting this week. Email me a 3-page(-ish) double-spaced analysis of the week's readings by midnight on Jan 21.

→ Chase, V. M., Hertwig, R. & Gigerenzer, G. (1999). Visions of rationality. *Trends in Cognitive Sciences*, 2, 206-214.

<https://pages.ucsd.edu/~mckenzie/Chaseetal1998TiCS.pdf>

→ Chater, N., Oaksford, M., Nakisa, R., & Redington, M. (2003). Fast, frugal, and rational: How rational norms explain behavior. *Organizational Behavior and Human Decision Processes*, 90, 63-74. (These first three sections are most important.)

<https://pages.ucsd.edu/~mckenzie/Chateretal2003OBHDP.pdf>

* Sections 4 and 5 (pp. 74-82).

Week 4 (Jan 27): Hypothesis Testing (Confirmation Bias) and the Selection Task

→ Klayman, J., & Ha, Y.-W. (1987). Confirmation, disconfirmation, and information in hypothesis testing. *Psychological Review*, 94, 211-228.

<https://pages.ucsd.edu/~mckenzie/KlaymanHaPsychReview1987.pdf>

** Wason, P. C. (1960). On the failure to eliminate hypotheses in a conceptual task. *Quarterly Journal of Experimental Psychology*, 12, 129-140.

<https://pages.ucsd.edu/~mckenzie/Wason1960QJEP.pdf>

* McKenzie, C. R. M. (2004). Hypothesis testing and evaluation. In D. J. Koehler & N. Harvey (Eds.), *Blackwell handbook of judgment and decision making* (pp. 200- 219). Oxford: Blackwell.

<https://pages.ucsd.edu/~mckenzie/McKenzieHTest.pdf>

→ Oaksford, M., & Chater, N. (1994). A rational analysis of the selection task as optimal data selection. *Psychological Review*, 101, 608-631.

<https://pages.ucsd.edu/~mckenzie/OaksfordChaterPsychReview1994.pdf>

** Wason, P. C. (1968). Reasoning about a rule. *Quarterly Journal of Experimental Psychology*, 20, 273-281.

<https://pages.ucsd.edu/~mckenzie/Wason1968QJEP.pdf>

* McKenzie, C. R. M., & Amin, M. B. (2002). When wrong predictions provide more support than right ones. *Psychonomic Bulletin and Review*, 9, 821-828.

<https://pages.ucsd.edu/~mckenzie/McKenzie&Amin2002PB&R.pdf>

Week 5 (Feb 3): Covariation Assessment and Framing Effects

→ McKenzie, C. R. M., & Mikkelsen, L. A. (2007). A Bayesian view of covariation assessment. *Cognitive Psychology*, 54, 33-61.

<https://pages.ucsd.edu/~mckenzie/McKenzie&Mikkelsen2007CogPsych.pdf>

** Smedslund, J. (1963). The concept of correlation in adults. *Scandinavian Journal of Psychology*, 4, 165-173.

<https://pages.ucsd.edu/~mckenzie/Smedslund1963.pdf>

** Jenkins, H. M., & Ward, W. C. (1965). Judgment of contingency between responses and outcomes. *Psychological Monographs: General and Applied*, 79, 1-17.

<https://pages.ucsd.edu/~mckenzie/Jenkins&Ward1965PsychMonographs.pdf>

* McKenzie, C. R. M., & Mikkelsen, L. A. (2000). The psychological side of Hempel's paradox of confirmation. *Psychonomic Bulletin and Review*, 7, 360-366.

<https://pages.ucsd.edu/~mckenzie/McKenzie&Mikkelsen2000PB&R.pdf>

→ Sher, S., & McKenzie, C. R. M. (2006). Information leakage from logically equivalent frames. *Cognition*, 101, 467-494.

<https://pages.ucsd.edu/~mckenzie/Sher&McKenzie2006Cognition.pdf>

** Tversky, A., & Kahneman, D. (1986). Rational choice and the framing of decisions. *Journal of Business*, 59, 251-278.

<https://pages.ucsd.edu/~mckenzie/TverskyKahnemanFramingDecisions1986.pdf>

* Leong, L. M., McKenzie, C. R. M., Sher, S., & Müller-Trede, J. (2017). The role of inference in attribute framing effects. *Journal of Behavioral Decision Making*, 30, 1147-1156.

<https://pages.ucsd.edu/~mckenzie/Leongetal2017JBDM.pdf>

* Sher, S., & McKenzie, C. R. M. (2008). Framing effects and rationality. In N. Chater & M. Oaksford (Eds.), *The probabilistic mind: Prospects for Bayesian cognitive science* (pp. 79-96). Oxford: Oxford University Press.

<https://pages.ucsd.edu/~mckenzie/Sher&McKenzieFraming&Rationality2008.pdf>

* McKenzie, C. R. M. (2004). Framing effects in inference tasks -- and why they are normatively defensible. *Memory and Cognition*, 32, 874-885.

<https://pages.ucsd.edu/~mckenzie/McKenzieMem&Cog2004.pdf>

Week 6 (Feb 10): Joint-Separate Reversals and Violations of Dominance

→ Sher, S., & McKenzie, C. R. M. (2014). Options as information: Rational reversals of evaluation and preference. *Journal of Experimental Psychology: General*, 143, 1127-1143.
<https://pages.ucsd.edu/~mckenzie/Sher&McKenzie2014JEPGeneral.pdf>

** Hsee, C. K. (2000). Attribute evaluability and its implications for joint-separate evaluation reversals and beyond. In D. Kahneman and A. Tversky (Eds.), *Choices, values, and frames* (pp. 543-563). Cambridge, England: Cambridge University Press.
<https://pages.ucsd.edu/~mckenzie/Hsee2000K&T.pdf>

→ McKenzie, C. R. M., & Sher, S. (in press). Gamble evaluation and evoked reference sets: Why adding a small loss to a gamble increases its attractiveness. *Cognition*.
<https://pages.ucsd.edu/~mckenzie/McKenzie&SherOnline2020Cognition.pdf>

** Slovic, P., Finucane, M., Peters, E., & MacGregor, D. G. (2002). The affect heuristic. In T. Gilovich, D. Griffin, and D. Kahneman (Eds.), *Heuristics and biases: The psychology of intuitive judgment* (pp. 397-420). Cambridge: Cambridge University Press.
https://pages.ucsd.edu/~mckenzie/GilovichGriffin_ch23_SlovicEtAl.pdf

Week 7 (Feb 17): Resource Rationality

There is no meeting this week. Email me a 3-page(-ish) double-spaced analysis of the reading by midnight on Feb 18.

→ Lieder, F., & Griffiths, T. L. (in press). Resource-rational analysis: Understanding human cognition as the optimal use of limited computational resources. *Behavioral and Brain Sciences*.
<https://pages.ucsd.edu/~mckenzie/Lieder&GriffithsInPressBBS.pdf>

Week 8 (Feb 24): Incoherence

→ Arkes, H. R., Gigerenzer, G., & Hertwig, R. (2016). How bad is incoherence? *Decision*, 3, 20-39.

<https://pages.ucsd.edu/~mckenzie/Arkesetal2016Decision.pdf>

→ Müller-Trede, J., Sher, S., & McKenzie, C. R. M. (2015). Transitivity in context: A rational analysis of intransitive choice and context-sensitive preference. *Decision*, 2, 280-305.

<https://pages.ucsd.edu/~mckenzie/MuellerTredeetal2015Decision.pdf>

** Tversky, A. (1969). Intransitivity of preferences. *Psychological Review*.

<https://pages.ucsd.edu/~mckenzie/Tversky1969PsychReview.pdf>

* Regenwetter, M., Dana, J., & Davis-Stober, C. P. (2011). Transitivity of preferences. *Psychological Review*, 118, 42–56.

<https://pages.ucsd.edu/~mckenzie/Regenwetteretal2011PsychReview.pdf>

Week 9 (Mar 2): Rationality Skeptics

→ Jones, M., & Love, B. C. (2011). Bayesian Fundamentalism or Enlightenment? On the explanatory status and theoretical contributions of Bayesian models of cognition. *Behavioral and Brain Sciences*, 34, 169-188. (Target article only.)

<https://pages.ucsd.edu/~mckenzie/Jones&Love2011BBS.pdf>

* See “Open Peer Commentary” in general, but Chater et al., pp. 194-196, in particular.

→ Bowers, J. S., & Davis, C. J. (2012). Bayesian just-so stories in psychology and neuroscience. *Psychological Bulletin*, 138, 389-414.

<https://pages.ucsd.edu/~mckenzie/Bowers&Davis2012PsychBull.pdf>

* Griffiths, T. L., Chater, N., Norris, D., & Pouget, A. (2012). How the Bayesians got their beliefs (and what those beliefs actually are): Comment on Bowers and Davis (2012). *Psychological Bulletin*, 138, 415–422.

<https://pages.ucsd.edu/~mckenzie/Griffithsetal2012PsychBull.pdf>

Week 10 (Mar 9): Contrasting Views on How to Improve Decision Making

→ Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press. (Introduction and Chapter 1, pp 1-39.)
<https://pages.ucsd.edu/~mckenzie/NudgeIntroCh1.pdf>

* Benartzi, S., et al. (2017). Should governments invest more in nudging?
Psychological Science, 28, 1041-1055.
<https://pages.ucsd.edu/~mckenzie/Benartzietal2017PsychScience.pdf>

→ Hertwig, R., & Grüne-Yanoff, T. (2017). Nudging and boosting: Steering or empowering good decisions. *Perspectives on Psychological Science*, 12, 973-986.
<https://pages.ucsd.edu/~mckenzie/Hertwig&Grune-Yanoff2017PerspectivesPsychSci.pdf>

* Grüne-Yanoff, T., & Hertwig, R. (2016). Nudge versus boost: How coherent are policy and theory? *Minds & Machines*, 26, 149-183.
<https://pages.ucsd.edu/~mckenzie/Grune-Yanoff&Hertwig2016Minds&Machines.pdf>

→ McKenzie, C. R. M., Sher, S., Leong, L. M., & Müller-Trede, J. (2018). Constructed preferences, rationality, and choice architecture. *Review of Behavioral Economics*, 5, 337-360.
<https://pages.ucsd.edu/~mckenzie/McKenzieetal2018RevBehavEcon.pdf>

* Krijnen, J. M. T., Tannenbaum, D., & Fox, C. R. (2017). Choice architecture 2.0: Behavioral policy as an implicit social interaction. *Behavioral Science & Policy*, 3, 1-18.
<https://pages.ucsd.edu/~mckenzie/Krijnenetal2017BehavSci&Policy.pdf>

→ Required reading

** Recommended background reading

* Suggested additional reading