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DECISION BEHAVIOR

BA 525

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How do people make decisions? How can judgments and choices be improved? Together these two questions define the field of Behavioral Decision Research (BDR). The purpose of this course is to provide students with an introduction to behavioral decision research and its applications.

Behavioral decision research is intensely interdisciplinary, employing concepts and tools from economics, statistics, and other disciplines, as well as the core discipline of psychology. Behavioral decision research (BDR) has been applied to business problems in management, marketing, operations, accounting, and finance. In addition, BDR has had an impact on the fields of medicine, law, military science, environmental sciences, and public policy more generally. While this course is a course in the business school we will draw upon research, and applications, from various fields of study.

The course is organized as follows: The first class session will provide an overview of topics, debates, methods, and application areas in BDR. Next, we will spend several weeks (3-4) reviewing the psychology of beliefs (probability) judgments about uncertain events. This topic area has gotten much press in terms of the biases that people often exhibit in making forecasts about future events. The next section of the course will deal with the psychology of preferences. Unfortunately, the world is not structured so that we can get everything we desired at once. How do people make decisions between options that are both better (and worse) than other alternatives in meeting one's objectives. This section on preferences will again take 3 to 4 weeks to cover. Next, we will focus on two special forms of decision making that have received much attention. The first topic is decision making under risk where there are tradeoffs to be made between how much of a good thing one receives (or how little of a bad thing) and the probability of receiving a given outcome. The classic example is the tradeoff between return and risk in investment. Risky choice is the first area of active decision research and some of the basic ideas in this area of study can be traced back centuries. The second topic is inter-temporal preference where one has to choose between getting a smaller amount of a good thing sooner or a larger amount of a good thing later. Increasingly, inter-temporal preferences are seen as core to understanding various aspects of "real-world" decision behavior such as retirement planning.

The material covered on the psychology of beliefs, the psychology of preferences, and the combination (risky choice) represent the heart of behavioral decision research, and this course. We will, however, also touch on how decisions might be improved in various ways including the use of groups rather than individuals to make decisions.

CHANGE IN SEMINAR LOCATION: Our first class meeting will meet on Wednesday, August 31, 2011 in the McKinley Seminar Room. Future classes will meet at the same time in Classroom G. Class will meet from 8:45 a.m.-11:15 a.m.

Please get the readings from my assistant, Bobbie Clinkscales (660-7862), workspace A303D Academic Center, prior to the class on August 31st. Future readings will be in the classroom before class begins. Each week we will discuss approximately 4 to 5 articles. You should think about a few questions and/or comments about each article. You should also think about “real world” examples of the judgment/decision phenomenon described in each paper. The articles to be read will be a mixture of “classic” and recent papers. In addition to the readings I will provide a set of Power Point slides for each section of the course, an online version of the slides may be viewed at: <http://faculty.fuqua.duke.edu/~jpayne/ba525.htm>. Classes will involve lecture and, hopefully, lots of discussion. Students will be expected to take an active role in the class sessions.

Your grade will be based on your participation in class discussion and on a paper written by you on a BDR topic of your choice. Please talk with me about possible topics before you begin work on your paper. For most students, the paper should be some form of a literature review. It can be a paper that goes into depth on a topic like overconfidence in judgment or relates an area of BDR to an applied topic such as the environment. Several of the papers we will read for the class are examples of good theory-based literature reviews. Experimental or empirical papers on decision making are possible but they are hard to complete in a semester course. The paper is due Monday, December 12, 2011. The paper should be no more than 30 pages double-spaced. Please use American Psychological Association (APA) style guidelines for how to handle references, headings, etc.

Schedule of Topics and Readings

**This schedule is tentative. We will take longer than one class session on some topics depending on class interest. We may also read a few additional papers depending on student interest. Therefore, if you have to miss a class be sure to check with me or one of your fellow students on what will be needed to be read for the following week.

Class Session #1 (8/31) - Introduction: 1) Course Overview, 2) the Rationality versus Bounded Rationality debate, and 3) the Methods for Decision Research. Depending on how much time is spent on the introduction, we may start the section on judgment under uncertainty (see paper #3).

1. Simon, H.A. (1955). A behavioral model of rational choice. Quarterly Journal of Economics, 69, 7-19. [Some would argue that this paper is the foundation paper for the field of BDR.]
2. Shah, A. J. & Oppenheimer, D. M. (2008). Heuristics made easy: An effort-reduction framework. Psychological Bulletin, 134, 207-222. [This article builds upon the paper by Simon (1955). This paper also provides a recent, and good, example of a “literature review” with a theoretical perspective.]
3. Milkman, K. L., Chugh, D., & Bazerman, M. H. (2009). How can decision making be improved? Perspectives on Psychological Science, 4, 379-383.
4. Tversky, A. & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. Science, 185, 3-20. [This may be the most influential article on subjective probability judgments ever written.]

Questions to think about:

- a. How would you judge a decision as a “good” one? More generally, what defines “rationality” in judgment and choice?

- b. What does the concept of “bounded rationality” mean? How does it differ from the assumptions about decision making found in most economic textbooks?
- c. What is a judgment heuristic? In particular, according to Tversky and Kahneman what are defining characteristics of judgmental heuristics? How is the definition the same (or different) from that of Shah and Oppenheimer?

Class Session #2 (9/7) – Probabilistic Reasoning I: Heuristics and Biases. (This session will definitely extend to session #3)

1. Tversky, A. & Kahneman, D. (1983). Extensional versus intuitive reasoning: The conjunctive fallacy in probability. Psychological Review, 90, 293-315. [This paper, in my opinion, gives the best introduction to the “heuristics and biases” perspective on subjective probability judgments. What is the logic of studying judgment by focusing on errors in reasoning?]
2. Klayman, J. Soll, J.B., Gonzales, Vallejo, C. & Barlas, S. (1999). Overconfidence: It depends on how, what, and whom you ask. Organizational Behavior and Human Decision Processes, 79, 216-247. (Overconfidence is one of the most studied judgmental biases. Follow-up papers are Soll, J. & Klayman, J. (2004). Overconfidence in interval estimates. Journal of Experimental Psychology: Learning, Memory, and Cognition, 30, 299-314 and Tsai, C. I., Klayman, J., & Hastie, R. (2008). Effects of amount of information on judgment accuracy and confidence. Organizational Behavior and Human Decision Processes, 107, 97-105.)
3. Rottenstreich, Y. & Tversky, A. (1997). Unpacking, repacking, and anchoring: Advances in support theory. Psychological Review, 104, 406-415.
4. Simmons, J. P., & Nelson, L. D. (2006). Intuitive confidence: Choosing between intuitive and nonintuitive alternatives. Journal of Experimental Psychology: General. 135, 409-428. This paper illustrates the use of a mixture of experimental and “real-world” data.
5. Payne, J. W., Sagara, N., Shu, S. B., Appelt, K. C., & Johnson, E. J. (2011). Life expectation: A constructed belief? Manuscript.

Questions to think about:

- a. What areas of business, law, medicine, etc., might be influenced by overconfidence effects?
- b. With probability judgments, how you ask the question matters a lot. Try to think of examples applied to your area of study.
- c. What tasks in the applied fields you are interested in are most likely to be influenced by judgmental heuristics?
- d. Will experts also show judgmental biases? If so, why?

Class Session #3 (9/14) – Probabilistic Reasoning II.

1. Kahneman, D., & Frederick, S. (2002). Representativeness revisited: Attribute substitution in intuitive judgment. In T. Gilovich, D. Griffin, & D. Kahneman (eds.) Heuristics and biases: The Psychology of Intuitive Judgment. Cambridge University Press.
2. Kruglanski, A. W., & Gigerenzer, G. (2011). Intuitive and deliberate judgments are based on common principles. Psychological Review, 118, 97-109. Gigerenzer and his colleagues have strongly advocated the study of the heuristics used in judgment and choice but from a different perspective than Kahneman and Tversky.

3. James, G., & Koehler, D. J. (2011). Banking on a bad bet: Probability matching in risky choice is linked to expectation generation. Psychological Science, 22, 707-711. The phenomenon of probability matching is one of the oldest, and most studied, “biases” in human judgment. There is evidence that the search for patterns is a basic “human” trait.
4. Brownstein, A.L. (2003). Biased predecisional processing. Psychological Bulletin, 129, 545-568. For a recent example of experimental work in this domain of study see Fischer et al. (2011). Threat and selective exposure: The moderating role of threat and decision context on confirmatory information search after decisions. Journal of Experimental Psychology: General, 140, 51-62.

Questions to think about:

- a. What is your opinion about the research approaches of Kahneman and Tversky and Gigerenzer? Why, for example, might the use of heuristics that use less information, computation, and time might improve judgmental accuracy as well as lead to systematic biases?
- b. Recently it was argued that “If one were to attempt to identify a single problematic aspect of human reasoning that deserves attention above all others, the confirmation bias would have to be among the candidates for consideration” Do you agree? Why?
- c. What are some of the unanswered questions that you see in terms of probabilistic reasoning?

Class Session #4 (9/21) – Judgment with Multiple Cues and Summary of the section on thinking under uncertainty.

1. Lusk, C.M. & Hammond, K.R. (1991). Judgment in a dynamic task: Microburst forecasting. Journal of Behavioral Decision Making, 3, 55-73. [Social Judgment Theory (SJT) or “policy capturing” is one of the most active areas of BDR. While this is an “old” paper it does a good job of illustrating the SJT approach. Cooksey, R. W. (1996), Judgment analysis: Theory, methods, and applications. Academic Press, is a good summary of much of this work.
2. MacCormick, A. D., & Parry, B. R. (2006). Judgment analysis of surgeons’ prioritization of patients for elective surgery. Medical Decision Making, 255-264. This paper uses judgment analysis to identify distinct clusters of surgeons who differ in how they assign priorities for surgery.
3. Shah, A. K., & Oppenheimer, D. M. (2011). Grouping information for judgments. Journal of Experimental Psychology: General. 140, 1-13.
4. Stanovich, K. E. & West, R. F. (2008). On the relative independence of thinking biases and cognitive ability. Journal of Personality and Social Psychology, 94, 672-695.

Questions to think about:

- a. What tasks (problems) that you are interested in could be studied using the methods of Lusk and Hammond?
- b. Are there likely to be cultural as well as individual differences in rational thought?
- c. To what extent do you believe people can correct judgmental errors that may exist?

*Depending on how quickly we cover material, the sessions on probabilistic reasoning may be extended.

Class Session #5 (9/28) – Preferences and dealing with Conflicting Objectives: Basic Tasks, Models, and Modes of Thought. [This class will extend over to the next week.]

1. Tversky, A. (1972). Elimination by aspects: A theory of choice. Psychological Review, 79, 281-299.
2. Payne, J.W., Bettman, J.R., & Johnson, E.J. (1988). Adaptive strategy selection in decision making. Journal of Experimental Psychology: Learning, Memory and Cognition, 14, 534-552.
3. Broder, A., & Schiffer, S. (2006). Adaptive flexibility and maladaptive routines in selecting fast and frugal decision strategies. Journal of Experimental Psychology: Learning, Memory and Cognition, 32, 904-918.
4. Dijksterhuis, A., Bos, M. W., Nordgren, L. F., & van Baaren, R. B. (2006). On making the right choice: The deliberation-without-attention effect. Science, 311, 1005-1007.
5. Payne, J. W., Samper, A., Bettman, J. R., & Luce, M. F. (2008). Boundary conditions on unconscious thought in complex decision making. Psychological Science, 19, 1118-1123.

Questions to think about:

- a. A compensatory process is often viewed as the “rational” way to deal with problems involving conflicting objectives. Do you agree? If not, why not?
- b. Why would people use noncompensatory decision strategies even if the strategies are not fully rational? Also, when, and by whom, are heuristic strategies more likely to be used?
- c. What is the difference between output and process methods in the study of decisions?
- d. How might conscious and unconscious thought differ in terms of decision making? When might one form of thought be better?

Class Session #6 (10/5) – Task and Context Effects.

1. Lenton, A. P., & Francesconi, M. (2010). How humans cognitively manage an overabundance of mate options. Psychological Science, 21, 528-533. The effects of the number of alternatives available on both what and how people choose is one of the classic task questions.
2. Tversky, A., Sattath, S., & Slovic, P. (1988). Contingent weighting in judgment and choice. Psychological Review, 95, 371-384.
3. Hsee, C.K., & Zhang, J. (2010). General evaluability theory. Perspectives on Psychological Science, 5, 343-355.
4. Tversky, A. Simonson, I. (1993). Context-dependent preferences: Management Science, 10, 1179-1189.
5. Hogarth, R. M., & Karelaia, N. (2007). Heuristic and linear models of judgment: Matching rules and environments. Psychological Review, 114, 733-758. (This is a theoretical paper that is harder to read but worth it. It relates context variables to the work on probabilistic reasoning as well as to the study of preferences.)

Questions to think about:

- a. If A is preferred to B under some circumstances while B is preferred to A under other circumstances, do people really have preferences to be measured?
- b. What factors such as product familiarity should impact the size of task and context effects?

Class Session #7 (10/12) – Emotions and Other Issues in Multi-Attribute Judgment and Choice.

1. Luce, M.F. (1998). Choosing to avoid: Coping with negatively emotion-laden consumer decisions. Journal of Consumer Research, 24, 409-433.
2. Finucane, M.L., Peters, E., & Slovic, P. (2003). Judgment and Decision Making. The dance of affect and reason. In S. Schneider & J. Shanteau (Eds.) Emerging Perspectives on Judgment and Decision Research, Cambridge University Press.
3. Simonson, V. (2007). Clouds make nerds look good: Factors on decision making. Journal of Behavioral Decision Making, 20, 143-152. [One of the recent trends in BDR is an interest in how “incidental” factors such as how you are feeling due to the weather can influence important judgments and choices.]

Questions to think about:

- a. What are the differences between cognitive and emotional factors in decision-making?
- b. How do affect and reason interact in judgment and choice?

Again, we may need to push the following classes on decisions under risk back a week depending on how quickly we cover the previous material.

Class Session #8 (10/19) – Decisions Under Risk. Please treat sessions 8 – 10 as one unit. Almost certainly we will extend session 8 to the following week.

1. Lopes, L.L. (1995). Algebra and process in the modeling of risky choice. In Decision Making from the Perspective of Cognitive Psychology, Academic Press.
2. Kahneman, D. & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica, 47, 263-291. [This article is the most cited article ever in this leading economics journal. Kahneman won the Nobel Prize in Economics for this article and related work.]
3. Tversky, A., & Kahneman, D. (1992). Advances in Prospect Theory: Cumulative representation of uncertainty. Journal of Risk and Uncertainty, 5, 297-323.
4. Brandstatter, E., & Gigerenzer, G. (2006). The priority heuristic: Making choices without trade-offs. Psychological Review, 113, 409-432.
5. Venkatraman, V., Payne, J. W., Bettman, J.R., Luce, M. F., & Huettel, S. A. (2009). Separate neural mechanisms underlie choices and strategic preferences in risky decision making. Neuron, 62, 593-602.

Questions to think about:

- a. What are the differences and similarities between expected utility theory and prospect theory?
- b. How important is the distinction between risk and uncertainty?
- c. What kinds of heuristics might people use in solving risky decision problems?
- d. How might neurosciences help us understand risk-taking?
- e. How might problems that you are interested be thought of in terms of decision making under risk (uncertainty)?

Class Session #9 (10/26) – Alternative Perspectives on Risk Taking.

1. Rottenstreich, Y., & Hsee, C.K., (2001). Money, Kisses, and Electric Shocks: On the affective psychology of risk. Psychological Science, 12, 185-190.
2. Shiv, B., et.al. (2005). Investment behavior and the negative side of emotion. Psychological Science, 16, 435-439.
3. Rakow, T., & Newell, B. (2010). Degrees of uncertainty: An overview and framework for future research on experience-based choice. Journal of Behavioral Decision Making, 23, 1-14.

Questions to think about:

- a. How do the motivational factors involved in risky choice relate to the earlier papers on affect and reason?
- b. How might emotions and cognition relate to risk taking?
- c. What are some examples of risky decisions that are likely to be more description or experience based?

Class Session #10 (11/2) - Finish section on Risky Decisions. This is a “catch-up” class. There is only one “new” reading. Please be prepared to discuss your ideas for a paper for class.

1. Weber, E.U., & Hsee, C. (1998). Cross-cultural differences in risk perception, but cross-cultural similarities in attitudes towards perceived risk. Management Science, 44-1205-1217.

Questions to think about:

- a. What cross-cultural differences in decision behavior might exist?
- b. What 3 topics would you like to write about for your class paper?

Class Session #11 (11/9) – Time preferences (discounting the future). ***I may need to be in NYC on this date. If so, I will either have a substitute teach or we will push the class back a week.***

1. McClure, S. M., Laibson, D. I., Loewenstein, G., & Cohen, J. D. (2004). Separate neural systems value immediate and delayed monetary rewards. Science, 306, 503-506.
2. Read, D., & Read, N. L. (2004). Time discounting over the lifespan. Organizational Behavior and Human Decision Processes, 94, 22-32.
3. Weber, E.U., Johnson, E.J., Milch, K.F., Chang, J.C., Brodscholl, J.C., & Goldstein, D. G. (2007). Asymmetric discounting in intertemporal choice: A query-theory account. Psychological Science, 18, 516-523.

Class Session #12 (11/16) – Improving Decisions.

1. Payne, J.W., Bettman, J.R. & Schkade, D.A. (1999). Measuring constructed preferences: Towards a building code. Journal of Risk and Uncertainty, 19, 243-270.
2. Benartzi, S. & Thaler, R.H. (2007). Heuristics and biases in retirement savings behavior. Journal of Economic Perspectives, 21, 81-104. This paper illustrates how BDR might impact public policy debates.
3. Botti, S. & Iyengar, S. S. (2006). The dark side of choice: When choice impairs social welfare. Journal of Public Policy & Marketing, 25, 24-38.

4. Wilson, T.D. & Brekke, N. (1994). Mental contamination and mental correction: Unwanted influences on judgments and evaluations. Psychological Bulletin, 116, 117-142. [This article makes clear how difficult it can be to eliminate judgmental biases.]
5. Goldstein, D. G., Johnson, E. J., Herrmann, A., & Heitman, M. (2008). Nudge your customers towards better choices. Harvard Business Review, December.

Questions to think about:

- a. What are the implications of the psychology of decision behavior for efforts to improve decisions?
- b. Why might people not use decision aids?

11/23 No Class – Thanksgiving Break

Class Session #13 (11/30) – Group Decision Behavior and Review.

1. Stasser, G. & Titus, W. (2003). Hidden profiles: A brief history. Psychological Inquiry, 14, 304-313.
2. Payne, J. W. (2011). Investment Committee Decisions: Potential Benefits, pitfalls, and Suggestions for Improvement. Unpublished manuscript. Duke University.
3. Soll, J & Larrick, R. (2009). Strategies for revising judgment: How (and how well) people use others' opinions. Journal of Experimental Psychology: Learning, Memory, and Cognition, 35, 780-805.
4. Herzog, S. M., & Hertwig, R. (2009). The wisdom of many in one mind. Improving judgment with dialectical bootstrapping. Psychological Science, 20, 231-237.
5. Weber, E. U. & Johnson, E. J. (2009). Mindful judgment and decision making. Annual Review of Psychology.

Questions to think about:

- a. When will 2 or more heads be better than 1 head in making a decision?
- b. What could be done to improve group decision processes?
- c. How would you describe humans as decision makers? That is, how do you think people generally make judgments and choices?
- d. How good is human decision making? How might it be improved?
- e. What 3 decision problems do you think should be investigated next by the BDR field?

Class Session #14 (12/7) – Wrap Up – If Needed.

RECOMMENDED BOOKS

New and Popular Books: Below are six recent (and very popular) books that are based on behavioral decision research. These books are highly recommended. The past few years has seen a rapid growth in best-selling books written for the general public that deal with behavioral decision research topics.

Ariely, D. (2008). Predictably Irrational: The hidden forces that shape our decisions. Harper Collins. A best-selling book on behavioral economics by one of Fuqua's own. I highly recommend that you watch a video by Dan on decision making that can be found on www.Ted.com/talks.

Lehrer, J. (2009). How we decide. Houghton, Mifflin Harcourt. This is an easy to read book that builds on recent neuroscience work on decision making.

Makridakis, S., Hogarth, R., & Gaba, A. (2009). Dance with chance: Making luck work for you. One World Publications.

Thaler, R. H. & Sunstein, C. R. (2008). Nudge: Improving decisions about health, wealth, and happiness. Yale University Press. One of the authors, Cass Sunstein, is the new Czar for regulation in the Obama administration.

Lewis, M. (2004). Moneyball: The art of winning an unfair game. (Paperback version.) This is not a book on decision behavior research. However, it is a fun read on intuitive judgment versus statistical reasoning.

Taleb, N. N. (2007). The black swan: The Impact of the highly improbable. Random House. This is not a book on decision research. However, it addresses issues of human judgment in a very thought-provoking matter. The recent crash of the financial markets has made this a very popular book.

Research and Text Books:

Hastie, R. & Dawes, R.M. (2001). Rational Choice in an Uncertain World. Sage Publications. An easy to read and good overview of the psychology of judgment and decision making.

Russo, J. E. & Schoemaker, P. J. H. (2002). Winning Decisions, New York: Currency. This book was written for executives. It is filled with lots of management examples of behavioral decision concepts and advice for making better decisions.

Koehler, D.J., & Harvey, N. (2004) (Eds.) Blackwell handbook of judgment and decision making. Blackwell Publishing. This book is a large and expensive volume that gives an overview of much of the current thinking in BDR. A paperback version is forthcoming.

Lichtenstein, S. & Slovic, P. (2006). (Eds.) The Construction of Preferences. Cambridge University Press. A large collection of articles supporting the idea that preferences are often "constructed".

Payne, J. W., Bettman, J. R., & Johnson, E. J. (1993). The Adaptive Decision Maker, Cambridge University Press. This book provides a framework for understanding when, and how, people decide how to decide.

Hammond, J.S., Keeney, R.L. & Raiffa, H. (1999). Smart Choices: A Practical Guide to Making Better Decisions. Harvard Business School Press. This book, as suggested by the title, provides an excellent introduction to decision analyses as a tool for making better decisions.

Kahneman, D. & Tversky, A. (2000). Choices, Values, and Frames. Cambridge University Press. This book contains a selection of articles growing out of “Prospect Theory” (Kahneman & Tversky, 1979)

Gilovich, T., Kahneman, D. & Griffin, D. (Eds.) (2002). Heuristics and Biases: Psychology of Intuitive Judgment. Cambridge University Press. This book contains a selection of chapters (articles) on intuitive probability judgment.