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## BEHAVIORAL DECISION THEORY

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### **Course Description and Objectives:**

Decision making is a process in which we select a course of action among available options. It begins when we need to do something but we do not know what. First, we embark on a journey into a land of rationality to study the normative approach. Since our ability to think and knowledge are limited and time is pressing, it is not surprising that some behavioral biases will be observed in decision making processes. Of course, this will require adjusting our normative theories to capture these biases. This will be the second purpose of this course.

### **Description of the Topics:**

In real life, we usually find ourselves in situations which we need to make a decision. This decision might be really important: Should we rent or buy a house? Which house should we buy? How many rooms do we need? There are also some less important decisions we need to make: What should I wear today? What do I eat this morning? In general, there are different types of decisions: Riskless choice, Choice under risk and uncertainty, Intertemporal (dynamic) choice, and Random choice.

A large amount of experimental and empirical data on individual choice behavior has demonstrated regularities that are inconsistent with standard economic models of choice behavior. In this course, we focus on analyzing realistic models of choice behavior with the specific aim of allowing for non-standard decision making processes. To do this, we utilize insights from psychology to decide which assumptions of the classical model need to be revised and how to best revise them to make the models more realistic. For example, people are often attracted to default options merely because of the “default” label; people often attach special significance to receiving an outcome “today” as opposed to some later date; people often do not pay attention to all available products when making choices. These regularities do not fit in the standard paradigm of mainstream economics, which typically assumes that individuals are perfectly rational and make choices that maximize some well-behaved objective. As a result, economists have been forced to revisit many of the standard theories of choice that underlie economics.

The course will introduce some new approaches to choice theory: e.g. the reference-dependent models where initial holdings matter (Tversky and Kahneman (1991), Masatlioglu and Ok (2005, 2013), Koszgi and Rabin (2006)), a model of choice from lists (Rubinstein and Salant (2006)), shortlisting (Manzini and Mariotti, (2007)), rationalization (Cherepanov et al. (2013)), models of limited attention (Masatlioglu, Nakajima, and Ozbay (2012), Lleras et al. (2017), Manzini and Mariotti (2013), Masatlioglu (2015)), frames (Salant and Rubinstein, (2008)). We see two different modeling approaches. First, we introduce a functional form and investigate the implication of the functional form. Second, instead of assuming a model, we derive the models from the basic components of choice (axiomatic approach). The axiomatic approach allows the development of models that are consistent with observed behavior and never allow for contradictory behavior. In addition, this approach breaks down a particular model into various components of observable choice behavior, which can then be tested separately.

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## Topics and Papers:

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### Limited Consideration

- Manzini P. and M. Mariotti (2007), “Sequentially rationalizable choice,” AER.
- Cherepanov, V., T. Feddersen, and A. Sandroni (2013), “Rationalization,” TE.
- Lleras, J., Y. Masatlioglu, D. Nakajima and E. Ozbay (2010), “When More is Less: Choice by Limited Consideration,” JET.
- Masatlioglu, Y., D. Nakajima, and E. Ozbay (2012), “Revealed attention,” AER.

### Reference-Dependent Choice

- Tversky, A. and D. Kahneman (1991), “Loss Aversion in Riskless Choice: A Reference-Dependent Model,” QJE.
- Masatlioglu, Y. and E. Ok (2005), “Rational Choice with Status Quo Bias,” JET.
- Masatlioglu, Y. and E. Ok (2014), “A Canonical Model of Choice with Initial Endowments,” RESTUD.
- Rubinstein A. and Y. Salant (2012), “Eliciting Welfare Preferences from Behavioral Data Sets,” RESTUD.
- Salant Y. and A. Rubinstein (2008), “Choice with frames,” RESTUD.
- Kahneman D. J. Knetsch, and R. Thaler (1991), “The Endowment Effect, Loss Aversion, and Status Quo Bias: Anomalies,” JEP.
- Koszegi B., and M. Rabin (2006), “A Model of Reference-Dependent Preferences,” QJE.
- Dean, M., Y. Masatlioglu, and O. Kibris (2015), “Limited Attention and Status Quo Bias,” JET.

### Search

- Rubinstein A. and Y. Salant (2006), “A model of choice from lists,” TE.
- Masatlioglu, Y., and D. Nakajima (2013), “Choice by Iterative Search,” TE.
- Masatlioglu, Y., and E. Suleymanov (2016), “Decision Making with Product Network,” mimeo.
- Caplin A., M. Dean and D. Martin (2011), “Search and Satisficing,” AER, 2011.
- De Los Santos B., A. Hortacsu, and M. Wildenbeest (2012), “Testing models of consumer search using data on web browsing and purchasing behavior.” AER.

### Random Choice

- Luce D, (1959) “Individual Choice Behavior: A Theoretical Analysis,” Book.
- Gul, F., P. Natenzon, and W. Pesendorfer (2010), “Random choice as behavioral optimization,” mimeo.

- Manzini P. and M. Mariotti (2014), “Stochastic Choice and Consideration Sets,” ECMA.
- Masatlioglu, Y., and M. Cattaneo (2015), “A Random Attention Model: Identification, Estimation and Testing,” mimeo.

### **Time Preference**

- Fishburn P. and A. Rubinstein (1982), “Time Preference,” IER.
- Ok and Masatlioglu (2007), “A Theory of (Relative) Discounting,” JET.
- Andreoni J. and C. Sprenger (2012), “Estimating Time Preferences from Convex Budgets,” AER.
- Filiz-Ozbay E., J. Guryan, J., K. Hyndman, M. Kaerney, and E. Ozbay (2015), “Do Lottery Payments Induce Savings Behavior? Evidence from the Lab,” JPubE.

### **Self-Control and Willpower**

- Gul, F. and W. Pesendorfer (2001), “Temptation and Self-Control,” ECMA.
- Masatlioglu, Y., D. Nakajima, and E. Ozdenoren (2013), “Limited Willpower,” mimeo.