Econ 637 - Decision Theory

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 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 our selves 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. (2010), 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.

Our class time will include lecture and discussion. Any changes to this outline will be announced in class. Additional readings may be assigned as the semester proceeds.

Instructors' Contact Information and Class Logistics:

Instructor: Yusufcan Masatlioglu

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Class Lectures: Tu-Th 12:30-1:45 TYD 2109

Pre-requisites: Completing ECON603 and ECON604 is required. Non-Econ students are required to complete these courses with a letter grade of B+ or better before starting Decision Theory.

Course Website: If you are registered for this course, you should use your directory ID and password to access https://elms.umd.edu. Copies of this syllabus, announcements, and other relevant documents will be made available through the course website.

Email: The University has adopted email as the primary means of communication outside the classroom, and I will use it to inform you of important announcements. Failure to check email, errors in forwarding email, and returned email due to "mailbox full" or "user unknown" will not excuse a student from missing announcements or deadlines. You are encouraged to contact me by email, and I will do my best to respond within 24 hours. PLEASE include course code in the subject line, so that I can quickly distinguish your message from spam or other less important matters. PLEASE also include your name and any previous messages we've exchanged within every message you send to me.

Expectations of Students: Your grade for the course is based upon your weighted performance in several areas. These areas and the corresponding weights are indicated below in tabular form.

Task	Percentage of Course Grade
Homework	20
Class Participation	20
Referee Report	20
Presentations	40

Homework: I will give some exercises in class and assign them as homework (due Tuesday of the following week). Since the homework questions will be given in class, the class attendance is very important. If you miss a class, you need to contact with your classmates or me in order to get the homework questions. You are allowed to work together on the homework. However, you are not allowed to copy others' answers. Each student should hand in solutions separately that reflect his/her own understanding. You should acknowledge collaborators at the top of the relevant homework. Directly copying someone else's work will be considered a violation of the university's code of ethics.

After you submit your homework, I will assign it to one of your classmates for evaluation. So each student will be evaluating one other student's homework. DO NOT grade your peer evaluation (I will grade them after you read them). Please ONLY highlight the mistakes in a solution and comment why you think it is not correct. Be friendly and respectful in your comments. Understanding alternative solutions and figuring out mistakes of others are very important for refereeing for academic journals, so I hope that this exercise will be part of your training as a researcher. I will provide the correct answers for reference.

Referee Report: Each student will write a referee report on a recently published or forthcoming paper (at a well-respected Economics Journal). You are expected to choose a paper related with the class material. Theoretical papers are preferred but you may review a paper which has both theory and experiments.

Class Presentation: Some papers from the syllabus will be assigned to students to be presented in class. You need to volunteer to present a specific paper. If nobody volunteers, I will assign the papers randomly to one student who has not presented before. If there are more students than the papers that we have on the syllabus, then joint presentations will be allowed. If there are more papers than students, then you may present multiple times. Evaluation of presentations will be based on the following:

- The intellectual merit of the paper should be well understood.

- The presenter should know how to place the paper in the literature.

- A clear analysis of the model should be presented, the proofs that are necessary in order to understand the paper should be given, and the intuition of the results should be well discussed.

- The presenter should be critical of the paper and identify the weaknesses of the paper.

- Questions that are left open should be discussed.

Course Participation: Students are expected to participate classes regularly. You will get much more out of the class if you read the material before it is covered in class. Participation in class discussion is encouraged. I believe that most successful students spend a significant amount of time reading, studying, and working through examples outside of class. Consistent participation greatly improves the likelihood of success in this course.

If you find that you can't follow the class discussions, please talk to me during my office hour. If you anticipate or experience any problem fulfilling the requirements of the course, you must inform me as soon as possible to maximize the possibility that I can help you. Contacting me about such problems at the end of the term when your grade is lower than what you would like is definitely too late.

Members of athletic teams must present to instructor, prior to each absence because of the membership on athletic teams, a written statement signed by the appropriate authority specifying the exact date of any such proposed absence.

I look forward to receiving your feedback on the course at the end of the semester, so please use the University's on-line course evaluation system at the end of the semester. Please contribute to a positive learning environment. We can make the most of this opportunity if you are willing to work at it. Students are expected to treat each other and me with courtesy and respect. Disruptive behavior will be referred to the Office of Student Conduct or the Campus Police.

Academic Integrity: The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards applicable to all students, and you are responsible for upholding these standards as you complete assignments and take exams in this course. Please make yourself aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information see www.studenthonorcouncil.umd.edu. For review new campus-wide policies and procedures for class, please visit http://www.ugst.umd.edu/courserelatedpolicies.html.

Students with Disabilities: Your success in the class is important to me. If there are circumstances that may affect your performance in this class, please let me know as soon as possible so that we can work together to develop strategies for adapting assignments to meet both your needs and the requirements of the course.

In order to receive official university accommodations, you will need to register and request accommodations through the Office of Disability Support Services. DSS provides services for students with physical and emotional disabilities and is located in 0106 Shoemaker on the University of Maryland campus. Information about Learning Assistance Services or Disability Support Services can be found at www.counseling.umd.edu/LAS or www.counseling.umd.edu/DSS. You can also reach DSS by phone at 301-314-7682.

Students in Distress: Sometimes college students experience academic, personal, and/or emotional distress. The Counseling Center in Shoemaker Hall provides comprehensive support services that promote personal, social, and academic success of UMD students. The cost of these services is covered by fees you already paid when you registered, so there is no additional charge if you use these valuable resources. Proactively explore the range of services available including the Counseling Service, the Disability Support Service, the Learning Assistance Service, and the Testing Office, all described at http://www.counseling.umd.edu.

Topics and Papers:

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.

Rational Inattention

- Caplin A., and M. Dean (2011), "Revealed preference, rational inattention, and costly information acquisition." AER.

- Sims, Christopher A. (2003) "Implications of rational inattention." JME.

- Caplin A., M. Dean and J. Leahy (2017), "Rationally Inattentive Behavior: Characterizing and Generalizing Shannon Entropy," WP.

- Gabaix, Xavier (2014), "A sparsity-based model of bounded rationality," QJE.

- Gabaix, Xavier, et al. (2016) "Costly information acquisition: Experimental analysis of a boundedly rational model." AER.

- Dean, Mark and Nathaniel Neligh, (2017), "Experimental Tests of Rational Inattention," WP.

- Bartos, V., et al. (2016), "Attention Discrimination: Theory and Field Experiments with Monitoring Information Acquisition." AER.

Salience

- Bordalo P. , N. Gennaiolli, and A. Shleifer (2013), "Salience and Consumer Choice," JPE.

- Ellis A., and Y. Masatlioglu(2018), "A Regional Approach to Salience," WP.

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., O. Kibris, and Y. Masatlioglu (2015), "Limited Attention and Status Quo Bias," JET.

- Kibris O., and Y. Masatlioglu, and E. Suleymanov (2018), "Salience and Endogenous Reference Point," WP.

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.

- Caplin A., and M. Dean (2011), "Search, choice, and revealed preference," TE.

- Brown M., C. J. Flinn, and A. Schotter, (2011), "Real?time search in the laboratory and the market," AER.

Random Choice

- Luce D, (1959) "Individual Choice Behavior: A Theoretical Analysis," Book.

- Gul, F., P. Natenzon, and W. Pesendorfer (2014), "Random choice as behavioral optimization," ECMA.

- Manzini P. and M. Mariotti (2014), 'Stochastic Choice and Consideration Sets," ECMA.

- M. Cattaneo, X. Ma, Y. Masatlioglu, and E. Suleymanov (2018), "A Random Attention Model," WP.
  Aguiar, V. H., M. J. Boccardi, and M. Dean (2016), "Satisficing and stochastic choice," JET.

- Lu, J. (2016), "Random choice and private information." ECMA.

- Matejka, F., and A.McKay (2015), "Rational inattention to discrete choices: A new foundation for the multinomial logit model." AER.

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.

- Chakraborty, Anujit, (2018) "Present Bias," WP.

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," WP.