Pedram Heydari

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EMPLOYMENT

Visiting Assistant Professor of Economics **2023–Present**
Northeastern University

Visiting Assistant Professor of Economics **2020–2023**
University of Pittsburgh

Postdoctoral Research Fellow **2018–2020**
Geisinger Health System, Meyer-Chabris Lab

EDUCATION

Ph.D. Economics **2018**
University of California, San Diego
Thesis: Essays in Behavioral Decision Theory and Economic Networks
Advisor: Christopher Chambers

Visiting Research Student in Economics **2016–2017**
Princeton University

M.A. Economics **2017**
University of California, San Diego

B.A. Economics, Applied Mathematics **2012**
University of California, Berkeley

RESEARCH INTERESTS

Primary: Decision Theory, Behavioral Economics, Experimental Economics
Secondary: Social and Economic Networks, Game Theory

PUBLICATIONS AND WORKING PAPERS

Regret, Responsibility, and Randomization: A Theory of Stochastic Choice ***Journal of Economic Theory***

Pedram Heydari

Abstract: I provide a model of deliberate stochastic choice over acts (state-contingent payoffs). In this model, the decision maker finds randomization desirable since it reduces responsibility and regret after the state uncertainty resolves. I provide an axiomatic characterization of stochastic choices compatible with this model. I also discuss the comparative statics and some behavioral implications of the model and outline potential avenues for extending and generalizing the model.

Luce Arbitrates: Stochastic Resolution of Inner Conflicts ***Games and Economic Behavior***

Pedram Heydari

Abstract: I propose and axiomatically characterize a multi-attribute stochastic choice model that simultaneously generalizes the standard model of deterministic choice and the Luce rule. Attributes are cardinal, independent measures of desirability that are endogenously inferred from observed choices, and thus subjective. An item is chosen with a positive probability from a set of available items (menu) if and only if it is undominated attribute-wise in that menu. This randomness of choice reflects the complexity of decision making and a possible lack of decisiveness in the face of conflicting motives due to the multiplicity of attributes. The model leads to the context-dependent evaluation of items by assigning every menu a distinct reference point against which the menu items are re-evaluated. The reference point of every menu takes the minimum values of attributes in that menu. This reference point can be interpreted as a context- dependent version of the commonly used status quo. The model can accommodate the well-known attraction and compromise effects by linking them to diminishing sensitivity to the attributes and complementarity between them. At the end, I discuss an application of the model in strategic settings and derive an analogue of the attraction effect in games, where adding a dominated action can lead to an increase in the probability of playing the dominating action in equilibrium.

Stochastic Choice over Menus ***Theory and Decision***

Pedram Heydari

Abstract: Models of choice over menus aim at capturing the effect of some behavioral or non- standard element of decision-making on the behavior of a single decision-maker. These models are usually compared with the standard model of choice over menus, in which the decision-maker chooses a menu whose best item is better than that of all other available ones. However, in many empirical settings such as experimental studies, choice data come from a population of decision-makers with possibly heterogeneous attitudes and tastes. This heterogeneity can make the observed choices over menus stochastic. This fact calls for a stochastic characterization of models of choice over menus to be able to better compare and contrast different models empirically. In this paper, I do this task for the standard model, which would be an extension of the random utility model to the realm of choice over menus. In particular, I provide the necessary and sufficient conditions, i.e., axioms on (stochastic) choice data over menus for it to be consistent with a population of decision-makers each of whom behaves according to the standard model. The axioms that characterize the model are the axiom of revealed stochastic preferences over singletons and three rationality axioms.

Not All Bridges Connect: Integration in Multi-Community Networks ***The Journal of Mathematical Sociology***

Pedram Heydari, Babak Heydari, Mohsen Mosleh

Abstract: There are many social and economic situations where two or more communities need to be integrated in an efficient and stable way that facilitates overall resource access throughout the network. We study structures for efficient integration of multi-community networks where building bridges across communities incur an additional link cost compared to links within a community. Building on the connections models with direct link cost and direct and indirect benefits, we show that the efficient structure for homogeneous cost and benefit parameters, and for communities of arbitrary size, always has a diameter no greater than 3. We further show that if the internal cost is not small enough to justify a full graph for each community, integration always follows one of these three structures: Single star, two hub-connected stars, and a new structure we introduce in this paper as parallel hyperstar, which is a special multi-core/periphery structure with parallel bridges that connect the core nodes of different communities and includes a wide range of efficiently integrated structures. Then we investigate stability conditions of these structures, using two different definitions: The standard pairwise stability, as well as a new stability notion we introduce in this paper as post transfer pairwise stability, which allows for bilateral utility transfers. We show that while the parallel hyperstar structure can never be both efficient and pairwise stable, once post transfer pairwise stability is used, efficiency guarantees stability. Furthermore, we show that all possible efficient structures can simultaneously be post transfer pairwise stable. In the end, we discuss future extensions of this model to multiple communities.

Elimination by (Endogenous) Aspects: A Characterization ***R&R, Journal of Economic Theory***

Pedram Heydari

Abstract: I provide an axiomatic characterization of elimination by aspects, a well-known model of stochastic choice proposed in Tversky (1972), within a lattice theoretic framework. In my characterization, I assume that aspects are not directly observable and thus, are endogenous. Connections with other related models of stochastic choice are also discussed.

Medical Rationing Choices of Laypeople and Clinicians Are Often Illogical and Inconsistent With Their Own Stated Preferences ***R&R, PLOS ONE***

Pedram Heydari, Christopher F. Chabris, Michelle N. Meyer

Abstract: The sudden onset, rapid spread, and later surges of the COVID-19 pandemic resulted in shortages of ventilators, pharmaceuticals, and other critical resources, leaving individual clinicians to make rationing decisions for which they had little expertise or training. In experiments with laypeople (N=2007) and clinicians (N=1256) we document two inconsistencies in hypothetical rationing decisions: (1) The choice of which of two patients should receive a medical treatment can be systematically affected by adding a third patient who logically should not receive the treatment (an instance of the attraction effect); (2) Decisions as to which patient should receive the treatment are inconsistent with abstract rationing policies that participants themselves endorse. In the light of these observations, we argue that predetermined policies administered by independent decision-makers are necessary to ensure fairness and consistency, as required by law and ethics, in healthcare rationing choices.

When Do Coalitions Survive Over Time? Stationary Stability in Dynamic Cooperative Games ***Working Paper***

Pedram Heydari, Babak Heydari

Abstract: This paper develops a framework based on dynamic hedonic games, a special class of cooperative games, to find conditions for the temporal stability of coalitions for situations where the values of coalitions for players are allowed to change depending on the history of play. We define two notions of dynamic stability and provide conditions that guarantee that a dynamic hedonic game has a stationary stable outcome. We show through a number of examples that all these conditions are needed to guarantee stable stationary outcomes. In the end, we apply our results to an extended example of people's decisions regarding interactions in smaller social groups during a pandemic.

Evidence that the Attraction Effect Results from Changing a Menu-Dependent Reference Point ***Working Paper***

Pedram Heydari, Anh V. Huynh, Christopher F. Chabris

Abstract: The attraction effect, also known as the asymmetric dominance effect, refers to the phenomenon where adding an asymmetrically dominated option to the menu increases the probability of choosing the dominating option in the menu. In two choice experiments (one of them preregistered) with 4066 Amazon Mechanical Turk workers, in four different domains of consumer products and services, we evaluate the mechanism that a family of multi-attribute choice models offers for the generation of the attraction effect. Specifically, these models attribute the attraction effect to changes in an endogenous reference point whose value in every attribute is the minimum (worst) value of that attribute among the available options. To evaluate this mechanism, we consider three scenarios in our experiment, in all of which an asymmetrically dominated option is added to the menu of available options. The first scenario is the standard scenario where the attraction effect has been documented in the previous literature. In the first two scenarios, adding the dominated option changes the reference point, but in the third scenario, the dominated option has no effect on the reference point. Therefore, the reference-dependent models under consideration predict an attraction effect for the dominating option in the first two scenarios, but they predict no attraction effect in the third scenario and more generally, no change in the relative probabilities of choosing the options. We find support for all these predictions in three of the four domains, suggesting that the attraction effect is contingent upon changes in the reference point.

Preference for Ambiguity and Difficult Choices ***Working Paper***

Pedram Heydari, Christopher F. Chabris

Abstract: A well-known finding in behavioral economics is that people often avoid ambiguous gambles whose outcome probabilities are unknown in favor of risky gambles whose outcome probabilities are known, a phenomenon that is called ambiguity aversion. In a novel preregistered online experiment with N=1195 participants, we test the hypothesis that people show a higher preference for ambiguous gambles when they find it hard to rank its outcomes and find support for this hypothesis. We interpret this result as an indication of an aversion to having responsibility over difficult choices and a tendency to delegate such decisions to chance or fate in order to feel less responsible.

Aversion to Pragmatic Randomised Controlled Trials:
Three Survey Experiments with Clinicians and Laypeople in the USA ***British Medical Journal Open***

Randi L. Vogt, Patrick R. Heck, Rebecca M. Mestechkin, Pedram Heydari, Christopher F. Chabris, Michelle N. Meyer

Abstract: Randomized controlled trials (RCTs) are essential for determining the safety and efficacy of healthcare interventions. However, both laypeople and clinicians often demonstrate experiment aversion: preferring to implement either of two interventions for everyone rather than comparing them to determine which is best. We studied whether clinician and layperson views of pragmatic RCTs for Covid-19 or other interventions became more positive early in the pandemic, which increased both the urgency and public discussion of RCTs. We conducted several survey studies with laypeople (total n=2,909) and two with clinicians (n=895; n=1,254) in 2020 and 2021. Participants read vignettes in which a hypothetical decision-maker who sought to improve health could choose to implement intervention A for all, implement intervention B for all, or experimentally compare A and B and implement the superior intervention. Participants rated and ranked the appropriateness of each decision. Compared to our pre-pandemic results, we found no decrease in laypeople's aversion to non-Covid-19 experiments involving catheterization checklists and hypertension drugs. Nor were either laypeople or clinicians less averse to Covid-19 RCTs (concerning corticosteroid drugs, vaccines, intubation checklists, proning, school reopening, and mask protocols), on average. Across all vignettes and samples, levels of experiment aversion ranged from 28% to 57%, while levels of experiment appreciation (in which the RCT is rated higher than the participant's highest-rated intervention) ranged from only 6% to 35%.

To Respond or not to Respond:
The Effect of Forced and Prefer Not to Answer Options in Demographic Questionnaires ***Working Paper***

Henri C. Santos, Rebecca M. Mestechkin, Randi L. Vogt, Daniel Rosica, Patrick R. Heck, Pedram Heydari, et al.

Abstract: Accurately capturing participant's true demographic characteristics can be difficult when participants are reluctant to share personal information but researchers want a complete dataset. While forced response requirements can ensure complete responses, they can also lead to respondent discomfort, attrition, or dishonesty. One solution is to allow participants the option of selecting "prefer not to answer" as their response. To examine the effect of forced responding and a "prefer not to answer" option on self-reported demographic information in web-based surveys, participants (initial sample n = 12,915, replication sample n = 3,794) across 22 surveys completed a set of demographic questions (e.g., sex, race, education). They were randomly assigned to one ofsix conditions, varying the presence of the "prefer not to answer" option and whether they were forced to respond, requested to respond, or had no response requirement. The only statistically significant difference observed in both the initial and replication samples was in the distribution of responses to political ideology questions. Across all comparisons, in both the full sample and the replication sample, we found that when a "prefer not to answer" option was available, fewer participants selected "very liberal"and "liberal"and more participants selected "very conservative."Outside this result, our findings demonstrate that including a "prefer not to answer" option in surveys does not heavily alter the distribution of responses to demographic questions. Researchers, marketers, and policymakers can consider implementing this option to respect participant preferences about disclosing information while collecting valuable data across diverse fields.

Democracy and Voter Turnout ***Manuscript in preparation***

Pedram Heydari

Abstract: Some states use high voter turnout as proof of the health of their democracy. In this paper, I evaluate this claim by studying the relationship between the level of democracy and voter turnout. For this analysis, I use a panel dataset with 1162 data points from 135 countries over different years. The independent variable is the percentage of eligible voters who vote in a country's major elections; presidential or parliamentary, depending on the country. The explanatory variables include a dummy variable associated with compulsory voting and an index of democracy called Polity ranging from -10 to 10. Polity incorporates various factors, such as institutionalized constraints on executive power and the availability of institutions and procedures through which citizens can effectively express their preferences about alternative policies and leaders. I find a statistically significant inverse relationship between voter turnout and Polity with fixed effect and random effect estimation. This finding suggests that more democracy might hurt voter turnout.

RESEARCH IN PROGRESS

Probabilistic Sophistication in Stochastic Choice
Pedram Heydari

Anticipated Regret and Relief in Choices over Menus
Pedram Heydari

Optimal Disclosure of Contributions in Collaborative Projects
Pedram Heydari, Ali Shourideh

Anticipation and Changing Risk Attitudes Over Time
Pedram Heydari, Ali Shourideh

TEACHING EXPERIENCE

Game Theory Principles (Econ 0200) **University of Pittsburgh**

Intermediate Microeconomics (Econ 1100) **University of Pittsburgh**

Microeconomics Principles (Econ 1116) **Northeastern University**

Microeconomic Theory (Econ 2316) **Northeastern University**

PRESENTATIONS

North American Summer Meeting **2023**
Regret, Responsibility, and Randomization: A Theory of Stochastic Choice

University of Pittsburgh (Medley Conference) **2022**
Elimination by (Endogenous) Aspects: A Lattice Theoretic Characterization

New York University (Experimental Economics Seminar) **2019**
An Experimental Assessment of Reference-Dependent Models of Context Effects

Geisinger ADMI (Research Seminar) **2018**
Decision Making: An Economist's Perspective

IBM (T.J. Watson Research Center) **2017**
A Theory of Behavior in the Face of Inner Conflicts

Princeton University (Theory Seminar) **2017**
Reference-Dependent Stochastic Choice with Multiple Endogenous Attributes

University of California, San Diego (Theory Seminar) **2017**
Luce Arbitrates: Stochastic Resolution of Inner Conflicts

PROFESSIONAL SERVICES

Refereeing: International Economic Review, Theory and Decision, Computational Social Networks

HONORS

Graduate Summer Research Fellowship **2013**
University of California, San Diego

Silver Medal **2006**
Iran National Mathematics Olympiad

ADDITIONAL INFORMATION

Citizenship: U.S.A.

Languages: English (Fluent), Farsi (Native)

REFERENCES

Christopher F. Chabris, Geisinger Health System, cfchabris@geisinger.edu

Christopher P. Chambers, Georgetown University, cc1950@georgetown.edu

Faruk Gul, Princeton University, fgul@princeton.edu

Pietro Ortoleva, Princeton University, pietro.ortoleva@princeton.edu