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DOCTORAL STUDIES Massachusetts Institute of Technology (MIT)
PhD, Economics, Expected completion June 2019
DISSERTATION: "Essays on Beliefs and the Macroeconomy"

DISSERTATION COMMITTEE AND REFERENCES

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PRIOR EDUCATION University of Pennsylvania 2013
PhD, Electrical and Systems Engineering
University of Pennsylvania 2010
MSE, Electrical Engineering
Sharif University of Technology 2008
BS, Electrical Engineering

CITIZENSHIP Iran, US permanent resident

FIELDS Primary Fields: Macroeconomics, Theory
Secondary Field: Behavioral Economics

TEACHING EXPERIENCE	<p>14.04 Intermediate Microeconomic Theory (MIT, undergrad) 2015,17 Teaching Assistant to Professor Juuso Toikka</p> <p>14.02 Principles of Macroeconomics (MIT, undergrad) 2016,18 Teaching Assistant to Professor Jim Poterba</p> <p>14.18 Mathematical Economic Modeling (MIT, undergrad) 2016 Teaching Assistant to Professor Alex Wolitzky</p> <p>14.03 Microeconomic Theory and Public Policy (MIT, undergrad) 2017 Teaching Assistant to Professor David Autor</p>
RELEVANT POSITIONS	<p>Research Assistant to Professor Daron Acemoglu 2014–17 Graduate Resident Tutor, Baker House, MIT 2016–</p>
FELLOWSHIPS, HONORS, AND AWARDS	<p>Graduate Fellowship, Department of Economics, MIT 2013–14 Neekeyfar Fund Award, Office of Graduate Education, MIT 2016</p>
PROFESSIONAL ACTIVITIES	<p>Referee: <i>Econometrica</i>, <i>AEJ: Micro</i>, <i>International Economic Review</i>, <i>Operations Research</i></p> <p>Invited presentations: Workshop on Information and Social Economics (Caltech, 2016), Minneapolis Fed Junior Scholar Conference (scheduled)</p>
PUBLICATIONS	<p>P. Molavi, A. Tahbaz-Salehi, and A. Jadbabaie, “A Theory of Non-Bayesian Social Learning,” <i>Econometrica</i>, 86(2): 445–490, 2018.</p> <p>P. Molavi, C. Eksin, A. Ribeiro, A. Jadbabaie, “Learning to Coordinate in Social Networks,” <i>Operations Research</i>, 64(3): 605–621, 2016.</p> <p>A. Jadbabaie, P. Molavi, A. Sandroni, A. Tahbaz-Salehi, “Non-Bayesian Social Learning,” <i>Games and Economic Behavior</i>, 76(1): 210–225, 2012.</p>
RESEARCH PAPERS	<p>“Macroeconomics with Learning and Misspecification: A General Theory and Applications” (Job Market Paper)</p> <p>This paper explores a form of bounded rationality where agents learn about the economy with possibly misspecified models. I consider a recursive general-equilibrium framework that nests a large class of macroeconomic models. Misspecification is represented as a constraint on the set of beliefs agents can entertain. I introduce the solution concept of constrained-rational-expectations equilibrium (CREE), in which each agent selects the belief from her constrained set that is closest to the endogenous distribution of observables in the Kullback–</p>

Leibler divergence. If the set of permissible beliefs contains the rational-expectations equilibria (REE), then the REE are CREE; otherwise, they are not. I show that a CREE exists, that it arises naturally as the limit of adaptive and Bayesian learning, and that it incorporates a version of the Lucas critique. I then apply CREE to a particular novel form of bounded rationality where beliefs are constrained to factor models with a small number of endogenously chosen factors. Misspecification leads to amplification or dampening of shocks and history dependence. The calibrated economy exhibits hump-shaped impulse responses and co-movements in consumption, output, hours, and investment that resemble business-cycle fluctuations.

“A Theory of Dynamic Selection in the Labor Market”

I propose an equilibrium search and matching model with permanent worker heterogeneity, asymmetric information, and endogenous separations and study the dynamics of adverse selection in the labor market. The interaction between asymmetric information and endogenous separations leads to a cyclical adverse selection problem that has testable predictions both for the aggregate variables and for individual workers' outcomes. First, a deterioration in the distribution of ability in the pool of the unemployed leads firms to raise their hiring standards, thus resulting in shifting out of the Beveridge curve. Second, if the separation rate is log-supermodular (log-submodular) in productivity and ability, the pool of the unemployed becomes more (less) adversely selected in downturns. Third, firms rationally discriminate against the long-term unemployed by demanding more unequivocally positive signals of their ability before hiring them. Fourth, this scarring effect is more (less) severe for lower-ability workers and after deeper recessions if the separation rate is log-supermodular (log-submodular).

“Tests of Bayesian Rationality”

What are the testable restrictions imposed on the dynamics of an agent's belief by the hypothesis of Bayesian rationality, which do not rely on the additional assumption that the agent has an objectively correct prior? In this paper, I argue that there are virtually no such restrictions. I consider an agent who chooses a sequence of actions and an econometrician who observes the agent's actions and is interested in testing the hypothesis that the agent is Bayesian. I argue that—absent a priori knowledge on the part of the econometrician on the set of models considered by the agent—there are almost no observations that would lead the econometrician to conclude that the agent is not Bayesian. This result holds even if the set of actions is sufficiently rich that the agent's action fully reveals her belief about the payoff-relevant state and even if the econometrician observes a large number of identical agents facing the same sequence of decision problems.

“Media Capture: A Bayesian Persuasion Approach” (with Arda Gitmez)

We present a model of *media capture*, a politician having control over the editorial policies of media. At the heart of the model is the trade-off faced by a politician who wants to persuade the citizens: she wants to capture the media and produce news in her favor, but capture leads the citizens not to follow the media as they find them uninformative. The model is a Bayesian persuasion model (à la Kamenica and Gentzkow, 2011) with an audience of heterogeneous priors. We identify conditions on the distribution of priors that guarantee full information revelation and no information revelation by the captured media. The model also has several testable predictions: (i) the information content of the news provided by the captured media decreases as the politician becomes more popular, (ii) in societies with more polarized opinions, the media are more likely to produce “negative” news than “positive” ones, and (iii) in societies where the media are less accessible to citizens, they are more informative.

**RESEARCH IN
PROGRESS****“Intrapersonal k-Rationalizability”**

I propose a boundedly-rational model of behavior for dynamic decision problems and study its implications in the context of a standard consumption-saving problem. A decision maker behaves as if she is performing k rounds of elimination of strictly dominated strategies in a game against her future selves. I call such a decision maker an *intrapersonal level- k thinker*. I apply the general solution concept to a standard infinite-horizon consumption-saving problem with standard preferences and argue that the theory has robust and testable predictions for the consumer’s behavior. When the elasticity of intertemporal substitution (EIS) is larger than 1, then an intrapersonal level- k consumer exhibits present bias for any $k \geq 1$, whereas when the EIS is smaller than 1, she exhibits future bias. The model can therefore provide an epistemic foundation for present-biased and future-biased behaviors.

“Bounding Aggregate Predictions in Heterogeneous Agents Models” (with Olivier Wang)

We provide bounds on the predictive power of heterogeneous agent models for aggregate impulse responses to macroeconomic shocks. We first solve for the minimal restrictions implied by market clearing and budget constraints in a model with general heterogeneity and incomplete markets. Building on the Sonnenschein-Mantel-Debreu “anything goes” theorem, we show how any aggregate impulse response to monetary and fiscal shocks can be obtained with sufficient heterogeneity, even with standard preferences. To discipline the heterogeneity, we map imperfect knowledge of micro moments, such as the “intertemporal marginal propensities to consume” introduced by Auclert, Rognlie and Straub (2018), to cross-restrictions on aggregate responses.