Nikoloz Pkhakadze

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Education

Georgetown University — Washington, DC, USA
Ph.D. candidate — *2015-2021(expected)*

International School of Economics at TSU (ISET) — Tbilisi,Georgia
Master of Economics — *2011-2013*

Vienna University of Technology (TU Wien) — Vienna, Austria
Master of Computer Science (European Master Program in Computational Logic) — *2008-2010*

Tbilisi State University (TSU) — Tbilisi, Georgia
Bachelor of Exact and Nature Sciences (Mathematics) — *2004-2008*

Research Interests

Microeconomics, Microeconomic Theory, Industrial Organization

Teaching Experience

Instructor

Principles of Microeconomics — Summer 2020
Undergraduate level, Georgetown University, Washington, DC

Managerial Economics — Spring 2014, Fall 2014,Spring 2015
Master level, University of Georgia, Tbilisi, Georgia

Intermediate Microeconomics — Fall 2014, Spring 2015
Undergraduate level, University of Georgia, Tbilisi, Georgia

Principles of Microeconomics — Spring 2014
Undergraduate level, University of Georgia, Tbilisi, Georgia

Graduate Teaching Assistant

Principles of Microeconomics — Spring 2020, Spring 2019, Fall 2018, Spring 2017
Head TA for Professors: Axel Anderson, Arik Levinson, Mustafa Karakaplan
Undergraduate level, Georgetown University, Washington, DC

Intermediate Micro — Fall 2016, Fall 2017, Spring 2018, Fall 2019
TA for professors: Ian Gale, Arik Levinson, Andrea Wilson
Undergraduate level, Georgetown University, Washington, DC

Game Theory — Spring 2013
TA for professor Avner Shaked
Master level, ISET, Tbilisi, Georgia

Microeconomics — Fall 2012
TA for professor Florian Biermann
Master level, ISET, Tbilisi, Georgia

Professional and Research Experience

Research Assistant Summer 2020, Summer 2019
For Professor Axel Anderson

Research Fellow 2013-2015
ISET Policy Institute

Intern Summer 2013
IMF Georgia

Intern Summer 2012
Macroeconomic and Statistics Department in National bank of Georgia

Creating SAT problems 2011, 2013
For National Examination Center of Georgia

Young Researcher 2007-2008
at Open Institute of the Georgian Language, Logic and Computer
at Ilia Vekua Institute of Applied Mathematics

Research

Ressearch in Progress

1. Polarizing Cheap Talk (*JMP*)
2. Polarizing Persuasion (jointly with Axel Anderson)
3. Deferred Acceptance Algorithm when mixed sets of men and women are offering
4. Market of experience goods and targeting

Earlier Research

1. 2010 "*Quantifier elimination in quantified propositional Lukasiewicz Logic*", Master Thesis which was published as a book by VDM Verlag.
   Quantifier elimination in quantified propositional Lukasiewicz Logic
   Book on Amazon
2. 2006-2008 Co-author and Co-translator of several articles in Georgian in the field of Natural Language Processing.

Skills

Languages
Georgian (Native), English (Advanced), Russian(Advanced), German(Intermediate).
Software
R, Stata -(advanced proficiency)
MATLAB, Python - (beginner proficiency)

Extended abstract of *Polarizing Cheap Talk (JMP)*

In this paper, I explore privately informed agents' incentives to induce public polarization for their own gain. In order to discipline the exercise, I assume that the audience being polarized is rational and processes all new information using Bayes' rule. I start with the pure cheap talk communication game of (Crawford and Sobel 1982) and add a second receiver to make belief polarization meaningful. Specifically, the sender must choose one costless but unverifiable message, *publicly* observed by both receivers. After observing this common signal, the receiver's update their beliefs according to Bayes' rule, and then each takes a separate action. The sender's payoff depends on the average action taken, and the state-contingent preferences of the sender and each receiver are not fully aligned. In contrast, the receiver's have identical state-contingent preferences.

To allow *rational* belief polarization, I use the approach used in (Benoit and Dubra 2016). I assume that the state space is two dimensional. The *payoff irrelevant* dimension is a scalar that directly enters the payoff function for all agents. The payoff irrelevant dimension is a binary variable that does not directly enter any payoff functions but nonetheless may affect posterior beliefs. Receivers agree on the prior distribution of the payoff relevant variable, but their beliefs about the payoff irrelevant variable are different. Receivers in my model are rational but have different beliefs.

To avoid contradicting the disagreement theorem in (Aumann 1976), I assume that agents agree to disagree. Formally receiver 1 does not update his belief based on the prior of receiver 2 and vice versa. I assume that receivers rationally process all *new* information, despite the initial disagreement.

If the sender employs a *one-dimensional partition*, i.e. the partition which either fully reveals the payoff irrelevant state or does not reveal any additional information about this binary variable. The set of equilibria with one dimensional partitions in the current model is payoff equivalent to the set of equilibria in the standard cheap talk model. However, allowing for the payoff irrelevant dimension introduces a continuum of new equilibria and expands the set of equilibrium payoffs.

I characterize a set of *polar equilibria* and prove that this set of equilibria spans the sender's payoff space. I also show that in these equilibria, receivers are polarized. Namely, their posterior beliefs are ordered with first-order stochastic dominance order. Moreover, I show that if receivers disagreement rises, then there is more scope for manipulation by the sender. Specifically, the set of aggregate actions (and thus sender payoffs) that can be supported in equilibrium expands as the receivers' posterior beliefs diverge. I show that even slight disagreement about payoff irrelevant state is enough for influential equilibrium to exist for any bias level. When disagreement increases, the equilibria set expands, and the bias threshold above which there are no informative equilibria also increases.
