Graham Noblit, Ph.D.

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Interests

Cultural Evolution · Reinforcement Learning · Game Theory · Political Economy · Institutional Design & Applied Cultural Evolution · Cognition and Culture

Education

Harvard University, Ph.D. · Human Evolutionary Biology 2022

Dissertation: The Cultural Evolution of Political Institutions

University of Texas: Austin, BA · Major in Anthropology · Minor in Mathematics 2012

Principal Positions

University of Toronto: Schwartz Reisman Institute for Technology and Society 2022 - Present

Post-Doctoral Scholar

Vector Institute for Artificial Intelligence 2022 - Present

Post-Doctoral Scholar

Publications

Working Papers

The Evolution of Chinese Lineages

I aim to understand variation in an important and temporally novel socio-political institution, the Chinese lineage. Notably, extensive geographic variation exists in the historical prominence and relevance of lineages. Using ethnographic and historical-economic evidence, I construct a theory explaining lineages as risk-pooling institutions, which provide lineage members with access to land. More so, variation in regional demand for risk-pooling and/or access to land likely stems from well-studied rice-wheat agro-economic differences. I test this hypothesis by examining whether lineage activity is associated with landholding size, precipitation predictability, and historically documented precipitation disasters. In all cases, I find strong support for they hypothesis of lineages as risk-pooling institutions.

Ostracism and the Evolution of Cooperation in Public Goods Dilemmas

Understanding how humans successfully stabilize public good contributions is a major ongoing question in the social and behavioral sciences. The use of targeted sanctions against defecting strategies is an important solution to this problem. However, ethnographic and behavioral evidence suggests that punishment is often only rarely used against defectors to stabilize cooperation — punishment instead is either light and insufficient to spurn cooperation or takes the form of verbal repudiations urging defectors to reform their behavior. Should defectors not reform, they are then ostracized. I construct a cultural evolutionary game-theoretic public goods model to evaluate the viability of ostracizing strategies. I demonstrate that ostracizing strategies are not likely to be evolutionarily viable. However, a hybrid sanctioning-ostracizing strategy is and more

so it demonstrates advantages over simple sanctioning strategies: it can stabilize costlier public goods, lowers the harm associated with sanctioning or being sanctioned, and handles recalcitrant defectors far more efficiently. This model also makes predictions concerning the nature of a group's ecology and the levels of punishment expected to be empirically observed.

The Political Psychology of Chinese Lineages

A broad body of work indicates that institutional variation induces psychological and behavioral variation across populations. I study the determinants of Chinese citizens' perception of the state as a function of the historical strength of Chinese lineages. Historically, lineages behaved very much like states: they laid claim to lineage members' behavior, enforcing lineage-rule systems through sanctions and education; adopted adjudicatory and punitive functions; organized collective defense and public infrastructure projects; and collected taxes. Lineage institutions were also an often a site of explicit resistance against the state either in the form of organized violence or tax evasion. I hypothesize that individuals from regions where lineages were historically strong will be less supportive of the state. Using survey data, I find extensive support for this hypothesis: individuals from strong-lineage counties are less trusting of state officials, show weaker emotional connections to China, display less demand for government intervention, are more accepting of critics of the Chinese Communist Party, and are more likely to explicitly say that the state is too strong.

In Prep

Second-Order Prestige Learning

Prestige transmission is an important human social-learning strategy whereby naïve individuals broadly copy the traits of successful individuals in the hope of adopting the specific behaviors that produce said success. "First-order" prestige strategies rely on a visible distribution of skill, or a signal correlated with skill, to pick teachers. In turn, first-order prestige strategies produce a public signal of teachers' *prestige* (*e.g.* the relative size of teachers' audiences) that second-order prestige strategies can use to indirectly infer the distribution of teachers' skills. In this paper, using game-theoretic and computational techniques, I model the evolution of such second-order prestige strategies. I find that second-order prestige strategies can invade populations of first-order prestige learners when evaluating the skill distribution is costly. Additionally, I examine whether the presence of second-order prestige types incentivizes teachers to lie and inflate the size of their audience or emit false signals of skill.

Grants & Fellowships

Harvard University: Graduate School of Arts and Sciences 2021

Dissertation Completion Fellowship

Harvard University: Mind Brain and Behavior 2020

Interdisciplinary Project Grant

Harvard University: Ash Center for Democratic Governance and Innovation 2020

Fellow with the Harvard Project for American Indian Economic Development

Harvard University: Department of Human Evolutionary Biology 2018

Travel Grant

Seminar and Conference Presentations

Berkeley Multi-Agent Reinforcement Learning Seminar 2021

Cultural Evolution Society (CES) 2021

Harvard Experiments Working Group 2020

Human Evolutionary Biology Department Seminar 2020

Professional Activities

Refereeing

Conference on Neural Information Processing Systems

Skills

Computational

R · Python · Julia (beginner) · SQL (beginner)

Statistical

Econometrics · Geospatial Data · Machine Learning

Methodological

Game Theory · Vignette Studies & Survey Design · Cross-Cultural Study Design

Fieldwork Experience

Caucasus Mountains · Pankisi Gorge with Kist ethnic group 2018

Workshops

Anti-Monopoly and Regulated Industries Summer Academy Summer 2020
Asia Fellows Workshop: Harvard Kennedy School, Ash Center Spring & Summer 2020

References

Joseph Henrich
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Thomas Talhelm
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+1-617-495-4966 · joe_kalt@hks.harvard.edu

Dan Kelly
Purdue University · Department of Philosophy
+1-765-494-4290 · drkelly@purdue.edu

Teaching

Harvard University Head Teaching Fellow 2019-2021

Introduction to Quantitative Methods for Economics

Fall 2019 - Spring 2020 · Instructor · Michael Parzen · michaelparzen@gmail.com

Fall 2020 - Spring 2021 · Instructor · Katy McKeough · kmckeough@fas.harvard.edu

Course is a rigorous introduction to statistics for students intending to study economics. Examples drawn from finance, decision analysis and economic decision-making.

· Managed team of 12+ teaching fellows and course assistants.

· Settled student administrative, personal, and other course-related issues as main communicative link between course instructor and student body

· Led course sections designed to build conceptual understanding of statistical inference and process of hypothesis testing as well as technical experience in the coding language, R.

Harvard University Teaching Fellow 2018-2019

Evolving Morality: From Primordial Soup to Superintelligent Machines

Instructor · Joshua Greene · jgreene@wjh.harvard.edu

Course examines the evolution of morality from the emergence of cooperation through the psychology of intelligent primates and into the a future inhabited by machines that may be more intelligent than humans. What is morality? Where does it come from, and what does it do? How is it implemented in our brains? We then apply our scientific understanding of morality to foundational moral and political questions: How should human societies be organized? Finally, we consider the distinctive moral challenges posed by increasingly powerful artificial intelligence. Will artificial intelligence displace human labor? If so, how can we adapt?

· Led weekly section discussions with students. I designed section topics and guided discussions in order to develop students' critical thinking skills, encouraging them to use scientific evidence in order to support their broader arguments.

· Graded and provided feedback on students' argument papers. I designed the rubric and my feedback such that students learned to make original arguments which were supported with formal reasoning and empirical evidence.

What Game Theory Reveals About Social Behavior

Instructor · Bethany Burum · bethanyburum@gmail.com

Course examines the ultimate genetic and cultural evolutionary forces which design human behavior. Topics include the evolution of altruism, costly signaling, and modesty. Material introduces students to game theoretic reasoning and, in particular, teaches students how to test mathematical models with psychological experiments.

· Met with students individually on a weekly basis. I designed interactions to encourage students to think about course material outside of examples presented in class in addition to assess facilitate each student's distinct understanding of the course material.

· Guided students through process of designing psychological experiments meant to test mathematical models of behavior they encountered in lecture.