

9TH WORKSHOP IN

DECISIONS

G A M E S

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L O G I C

UM, ANN ARBOR | 8-10 JULY, 2016

Conference Program

FRIDAY JULY 8, 2016

2:00-3:30	Joseph Halpern	Decision theory with resource-bounded agents
3:30-5:00	Gordon Belot	Difficulty itself?
5:00-6:00	Hannah Rubin et. al.*	Communication without the cooperative principle

SATURDAY JULY 9, 2016

10:30-12:00	Brian Weatherston	Coordination games, solution concepts, and intuitions
1:30-3:00	Kevin Zollman	The theory of games as a tool for the social epistemologist
3:00-4:30	Katie Steele	Inference and decision in light of norms for seeking evidence
4:30-6:30	Poster Session I	

SUNDAY JULY 10, 2016

10:30-12:00	Michael Caie	Agreement and updating for self-locating belief
12:00-2:00	Poster Session II	
2:00-3:30	Kenny Easwaran	A new framework for aggregating utility
3:30-4:30	Dan Singer, et. al.**	Group polarization as a limitedly rational response to evidence

* The full authorship of this paper, in addition to Hannah Rubin, includes: Justin Bruner, Cailin O'Connor and Simon Huttegger

** The full authorship of this paper, in addition to Dan Singer, includes: Patrick Grim, Aaron Bramson, Bennett Holman, Karen Kovaka, Jiin Jung, Anika Ranginani, and William Zev Berger

Abstracts

MICHAEL CAIE (UNIVERSITY OF PITTSBURGH)

Agreement and updating for self-locating belief. There are well-known results, such as Robert Aumann’s “no agreeing to disagree theorem”, that show that if two or more agents, who have epistemic and credal states that are defined over algebras that do not include any self-locating propositions, have certain information about one another’s epistemic and credal states, then such agents must assign the same credence to certain propositions. We can show, however, that these theorems fail when we consider agents who have epistemic and credal states that are defined over algebras that do include self-locating propositions. In this talk, I’ll consider what sorts of agreement theorems may be shown to hold for agents with credences defined over such algebras. I’ll then consider how these results bear on some tricky questions about how agents should update their credences in light of self-locating information.

KENNY EASWARAN (TEXAS A & M)

A new framework for aggregating utility. My 2014 paper, ‘Decision Theory without Representation Theorems’, describes a project for using utility and probability (or more generally, the distribution of value over possible outcomes of an action) to give norms on preference over actions. The project of this paper applies a similar methodology to give norms on preference over actions that don’t just have multiple possible outcomes, but also affect multiple agents, based on the value of each possible outcome to each agent. The aim is to show that a kind of aggregative utilitarianism can get around many problems that arise with infinitely many agents, especially in combination with uncertainty. This project does not aim to respond to challenges to consequentialism generally. However, it may be able to provide a new way of expressing the motivation and foundations of aggregative utilitarianism.

JOSEPH HALPERN (CORNELL)

Decision theory with resource-bounded agents. There have been two major lines of research aimed at capturing resource-bounded players in game theory. The first, initiated by Rubinstein, charges an agent for doing costly computation; the second, initiated by Neyman does not charge for computation, but limits the computation that agents can do, typically by modeling agents as finite automata. We review recent work on applying both approaches in the context of decision theory. For the first approach, we take the objects of choice in a decision problem to be Turing machines, and charge players for the “complexity” of the Turing machine chosen (e.g., its running time). This approach can be used to explain well-known phenomena like first-impression-matters biases (i.e., people tend to put more weight on evidence they hear early on) and belief polarization (two people with different prior beliefs, hearing the same evidence, can end up with diametrically opposed conclusions) as the outcomes of quite rational decisions. For the second approach, we model people as finite automata, and provide a simple algorithm that, on a problem that captures a number of settings of interest, provably performs optimally as the number of states in the automaton increases. Perhaps more importantly, it seems to capture a number of features of human behavior, as observed in experiments.

(This is joint work with Rafael Pass and Lior Seeman. No previous background is assumed.)

KATIE STEELE (LSE/ANU)

Inference and decision in light of norms for seeking evidence. One of A. J. Ayer's two main criteria for a successful account of scientific method is that the account should make it advisable for scientists to pursue 'free evidence'. Here I reflect on Ayer's claim, interpreted as a norm for judging our models of rational inference and decision. We see that the free-evidence norm, in basic form, is not upheld by theories that deviate from standard Bayesian decision theory, e.g., theories that explicitly incorporate 'risk sensitivity' and theories that accommodate 'severe uncertainty'. One might ask, then, whether some violations of the norm are more defensible than others. Indeed, I consider whether some decision theories (as opposed to others) furnish good reasons to avoid free evidence, and furthermore, what is the theoretical and practical significance of these subtle differences in observing the basic norm.

KEVIN ZOLLMAN (CARNEGIE MELLON UNIVERSITY)

The theory of games as a tool for the social epistemologist. Traditionally, epistemologists have distinguished between epistemic and pragmatic goals. This distinction has cast much of decision and game theory as irrelevant to epistemic enterprises. It is said that these theories only apply in a pragmatic context because they are designed around the satisfaction of pragmatic desires. In this talk, I will show that interesting and complex game theory problems will arise when we consider social epistemology. Even if we restrict attention to purely epistemic motivations, members of epistemic groups will face a multitude of strategic choices. After illustrating the conditions necessary for there to be non-trivial, purely epistemic games, I turn to a few case studies. I illustrate several contexts where individuals who are concerned solely with the discovery of truth will nonetheless face difficult game theoretic problems. Examples of purely epistemic coordination problems and social dilemmas will be presented.

Poster Presentations

William Berger (EMU) et. al.*, “Epistemic sorrows and triumphs of representative democracy: Condorcet and Hong-Page.”

Justin Bruner (ANU), “Bargaining, meta-bargaining and the evolution of divisional norms.”

Will Fleisher (Rutgers), “You don’t even believe that: endorsement and inquiry.”

Mattias Jenny (MIT), “The conditional logic of turing reducibility.”

Zoe Johnson King (Michigan), “On acting when uncertain about the norms governing action under risk and uncertainty.”

Joe McCool and Isaac Davis (CMU), “Almost fair: conjoint measurement theory and score based bargaining solutions.”

Nadiya Kostyuk (Michigan), “Sinister side of the web: principal-agent model of the hacker-government contract.”

Yang Liu (Cambridge), “Towards a more realistic version of savage’s system.”

* The full authorship of this paper, in addition to William Berger, includes: Patrick Grim, Daniel J. Singer, Aaron Bramson, Bennett Holman, and Sean McGeehan.

Miscellaneous

LOCATIONS

All talks will be in Angell Hall 3222, all poster presentations will be in Angell Hall 1171 (Tanner Library)

WI-FI

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