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Economics 201: Lying and Deception for Game Theorists

Description: Econ 201 is a topics class. Normally this means that different instructors pick different topics. I will modify this approach and bundle several loosely related topics together. "Deception" is a unifying theme.

Objectives: For you: Introduction to an advanced topic; experience reading papers criticallyI want the class to organize some ideas that have been on my mind and provide research topics to interested students.

For me: Uri Gneezy and I are working on a review article on the economics of deception. I hope that by the end of the term I will complete my part of this project.

Organization: The class meets on Mondays and Wednesdays at nine AM. I'll be available for consultations immediately after class.

Prerequisites First year micro and a tolerance for theory.

Paternalistic Rant: Do not take the class because you "need" an elective. At this point your academic goal should be to write a good dissertation. Allocate your time accordingly.

Requirements: The formal requirements are subject to negotiation, but I propose three things: class participation, solutions to problems, and a paper. Class participation comes in two forms: being active and engaged when I talk and actually leading discussions on particular papers. At this stage you should be learning to read and evaluate research papers. I will ask you to select one paper every two weeks and prepare a one-page summary. (If the papers on the reading list are inadequate, I will suggest alternatives. I will not create formal problem sets, but I will raise questions in class. Some of these questions may represent details that I do not wish to present in class and others may be novel problems.

Outline and Overview This outline is tentative. I will start at the beginning, but I will make changes based on how things are going.

1. Basic Model

   I'll assume knowledge of "standard" Spence signaling. We need to augment this with models of disclosure (Grossman [28], Hagenbach, Koessler, and Perez [29], Milgrom [37], with a survey from Milgrom [38]) and cheap talk (Crawford and Sobel [17]). Sobel [48] is a recent overview.

2. Multiplicity

   Standard models of communication have multiple equilibria. There are many reasons for this, but one of them is that abstract models of communication do not provide unambiguous meaning to words. I plan to demonstrate the existence of multiple equilibria, show ways in which one (might) resolve the problem and argue that incorporating "natural language" into models is one approach.

   Farrell [19] and [20] provides an early treatment. The literature has separate treatments of communication about intentions and communication about information. Rabin [42] is an early contribution to the first literature. Lo [34], Schlag and Vida [46], and Sobel [49] are more recent approaches.

The selection literature on games of information transmission includes Chen, Kartik, and Sobel [15], Gordon [26], and Kartik and Sobel [31].

Frequently one can think about equilibrium selection as a kind of convention. Lewis [33] discusses conventions in the context of communication. The author of the book is a philosopher, but the treatment is sophisticated from a game-theoretic point of view and contains ideas that are important to economists.

3. Bayesian Persuasion

   Emir Kamenica and Matthew Gentzkow [30], building on Aumann and Maschler [7] and Brocas and Carillo [14], develop one way to avoid the multiplicity problem. They give the informed agent the right to commit to a communication structure. This approach has attracted a lot of attention recently. I do not view it as directly related to the study of lying, but studying the basic ideas may be more useful than my agent. Some recent additions to the literature include: Alonso and Câmara [2], Galperti [23], Anton Kolotilin, Ming Li, Tymofiy Mylovanov, and Andriy Zapechelnyuk [32], and Rayo and Segal [44].

4. Implicature

   Natural language conveys more information than its semantic content. People draw inferences from what is said and what from is not said. Game theory is an appropriate tool for studying these inferences. Linguistic philosophers (Austin [8] and Grice [27]) frame important questions but do not provide models. Parikh [39] is an early (flawed) effort to model some of these ideas. Franke [22], Pavan [41], and Rothschild [45] do a better job.

5. Defining Lies

   One of my objectives is to come up with an operational defining of lying and identify some properties. Since "everyone" knows what lying is, this should be easy. The problem is that "everyone" does not agree. I do not think that it is necessary to come up with a definition that your parents would recognize, but here I must pay respects to research from other disciplines. Philosophers have their ideas (Mahon [35] is a survey, Bok [12] is an accessible mix of scholarly and popular[1] Anthropologists know the answer (Coleman and Kay [16]). Augustine [6] is a saint, so he knows eight different kinds of lie. Even computer scientists have an opinion. Surprisingly, I am not aware of any formal definition and modeling in economics, but perhaps I am searching too narrowly.[2]

6. Defining Deception

   Deception (according to my formulation) is a broader term that lying. The literature contains many examples, but no systematic treatment. I hope to invent the systematic treatment this term. Akerlof and Shiller [1] is a new, popular treatment of deception.[3]

7. Psychological Games

   There is evidence that people do not lie and deceive as much in practice as classical models predict. Extensions of classical models provide a framework for handling these issues. Geanakoplos, Pearce, and Stacchetti [24] introduced the notion of psychological games. They made a case that these games

[1] Bok is a philosopher, but the daughter of a Nobel-prize winning economist (and, in addition, the daughter of a winner of the Nobel peace prize). I'm not sure if this gives her more credibility.

[2] Ariely, who has written many articles and two books (Ari [4] and [5]) probably has a better right to claim he is an economist than I do.

[3] I have read reviews of the book, but I do not have a copy.

capture some aspects of behavior that cannot be fit easily into conventional games theory. Rabin [43] is probably the first successful application of the ideas. BD I view Segal and Sobel [47] as a reformulation of the theory. Battigalli and Dufwenberg [10] uses psychological games to develop a theory of guilt, which is one approach to studies that illustrate the importance of promise keeping.

8. Norms

   In the context of this class, "norms" provide a broad way to think about why agents may behave counter to their (narrowly defined) self interest. Like lying, scholars from other disciplines have been talking about norms forever. Durkheim [18][4] and Parsons [40] are contributions from major figures in twentieth century sociology. Bicchieri [11] is a philosopher, but sometimes shows an understanding of game theory. Bowles and Gintis [13] and Young [51] (I am citing one book each) present what one can view as models of norms using tools of evolutionary game theory.

9. Evidence

   Uri and I propose to integrate theory and evidence. He provides evidence and I make up the theory. I might try to convince him to give an overview of recent experimental work on lying and deception. I might take a stab at describing some of this work myself, but my heart and expertise is elsewhere. Some examples of the research in this area are: Andreoni and Bernheim [3], Battigalli, Charness, and Dufwenberg [9], Fischbacher and Föllmi-Heusi [21], Gneezy [25], Mazar, Amir, Ariely [36], and Vanberg [50].

[4]Durkheim died in 1917. The 1982 edition is a translation of the second-edition of Durkheim's 1901 book.

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