Econ211B: Information Economics
Syllabus
Fall 2019

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This is a topics course in information economics, reaching from the foundational contributions in the statistics literature to the job market papers of recent stars on the econ theory market. It is self-contained, but of course the micro theory sequence as well as the other 2nd year classes will be helpful, in particular the game theory course taught in the fall by Tomasz Sadzik. Realistically, we may cover ~3 of the 6 below topics in the course. We can emphasize topics according to students’ interest. For those enrolled, there will be problem sets and a final examination, possibly as a presentation in class or a mock referee report.

All the papers below should be available online, most of them on JSTOR. I will post lecture notes.

1 Value of Information

Overview: Information enables better decisions. We will study the basic properties of the demand for information such as comparing the value of two signals, the (non-monotonic) marginal value of information and conditions under which signals are substitutes or complements. As applications we may study information acquisition incentives in pricing, auctions, committee decision problems, and security design.

Mathematical Nuggets: Blackwell’s sufficiency theorem, Brownian motion, (relative) entropy

References:

Further References:
Börgers, Hernando-Veciana, Krähmer (2013), “When are Signals Complements of Substitutes?”, *JET, 107*; 421-452
Denti (2019), “Unrestricted Information Acquisition”, mimeo

Frankel Kamenica (2019), “Quantifying Information and Uncertainty”, *AER*

Gershkov, Szentes (2009), “Optimal voting schemes with costly information acquisition”, *JET*, 144; 36-68


Moscarini, Smith (2008), “The Law of Large Demand for Information”, *Econometrica*, 70 (6); 2351-2366


Woodford (2009), “Information-constrained state-dependent pricing”, *Journal of Monetary Economics*, 56; S100-S124

Yang (2015), “Coordination with flexible information acquisition”, *JET*, 158; 721-738

## 2 Experimentation

**Overview:** Often the best way to learn about some new activity or product is to try it out. Even if the chances of success are low, the option value of learning one’s tastes may outweigh static preference consideration. We start with the introduction of the famous Gittins index for “bandit problems” and may proceed to applications in IO, labor economics and finance.

**Mathematical Nuggets:** Gittins’ index theorem

**References:**


Bonatti, Horner (2011) “Collaborating”, *AER*, 101 (2); 632-663

Che, Mierendorff (2019), “Optimal Dynamic Allocation of Attention”, *AER*


Steiner, Stewart, Matejka (2017), “Rational inattention dynamics: Inertia and delay in decision-making”, *Econometrica*, 85; 521-553

**Further References:**


Bergemann, Välimäki (1996) “Learning and Strategic Pricing”, *Econometrica*, 64 (5); 1125-1149


Bonatti, Horner (2015a) “Career Concerns with Exponential Learning”, *TE*

3 Social Learning

Overview: In many settings in financial economics, IO and political economics, agents learn from the behavior of others. If the others’ information can be deduced from their past actions, learning will eventually occur and the decision makers will take the optimal actions. If on the other hand individuals orient their actions too much on past actions and too little on own information “informational cascades” and herds occur and learning stops.

Mathematical Nuggets: Martingale convergence theorem

References:


Liang, Mu (2019) “Complementary Information and Learning Traps”, *mimeo*


Further References:
4 Information Design

Overview: In a single-agent decision problem, additional information can never harm the agent since she can always choose to ignore it. This argument fails in strategic contexts, where the agent choosing the information and the agent choosing the action are not the same. It is then generally optimal to reveal some parts of the information but obfuscate others. Such considerations are relevant when schools release grades of their students, attorneys invoke evidence at court, and central banks perform stress tests. We will also discuss a different “robustness” interpretation of the information design model.

Topics: Bayesian persuasion, Robust predictions.

Surveys:

References:
Kamenica, Gentzkow (2011) “Bayesian Persuasion”, AER, 101; 2590-2615
Roesler, Szentes (2017) “Buyer Optimal Learning and Monopoly Pricing”, AER, 107; 2072-2080

Further References:
Admati, Pfleiderer (1986), “A monopolistic market for information”, JET 39; 400-438
Admati, Pfleiderer (1990), “Direct and indirect sale of information”, Econometrica 58; 901-928
Bergemann, Morris (2013), “Robust Predictions in Games with Incomplete Information”, Econometrica 81; 1251-1308
5 Strategic Communication

Overview: Conflicts of interests can hinder communication. If a division manager, say, anticipates that headquarters will divert funds from his division if he communicates problems, he will try to shade such problems. Similarly in court, an attorney may be reluctant to call a witness if he is uncertain about the testimony and its effect on the jury. These problems are alleviated if talk can be backed up by facts and the only way to lie is by withholding information.

References:

Further References:
Benabou, Laroque “Using privileged information to manipulate markets: Insiders, gurus, and credibility”, *QJE*, **107**: 921-958
Che, Kartik (2009) “Opinions as incentives”, *JPE*, **117**: 815-860
Rappoport (2017) “Evidence and Skepticism in Verifiable Disclosure Games”, *mimeo*
Sobel (2010) “Giving and Receiving Advice” *Lecture at ESWC*
Szalay (2005) “The economics of clear advice and extreme options”, *RESTud*, **72**: 1173-1198
6 Reputation

Overview: In the absence of formal contracts, one channel that keeps economic agents honest is their reputational concerns. A firm that doesn’t fight back when others eat its lunch invites further entry; a firm that is found to sell shady quality loses customers; a manager (or a tenured professor) who fails to deliver will be inferred to be inept and punished by the labor market.

Topics: Commitment types, inept types, mimicking, monitoring, trade-marks, career-concerns, reputational incentives, reputational dynamics.

References:
Fudenberg, Levine (1989), "Reputation and Equilibrium Selection in Games with a Patient Player", *Econometrica*, 57(4), 759-778

Further References:
Board, Meyer-ter-Vehn (2019), "A Reputation Theory of Firm Dynamics" *mimeo*
Faingold (2014), "Reputation and the Flow of Information in Repeated Games", *mimeo*
Horner (2002), "Reputation and Competition", *AER*, 92(3), 644-663
Huang (2014), "Defending Against Speculative Attacks: Reputation, Learning, and Coordination", *mimeo*
Milgrom, Roberts (1982), "Predation, Reputation and Entry Deterrence," *JET*, 27(2), 280-312
Wolitzky (2010), "Dynamic monopoly with relational incentives", *TE*, 5, 479-518