

Game Theory and the Law

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Course Outline

Game theory has been used in economic applications for quite a long time. There is hardly today any field in economics that does not draw on game theory's conceptual framework, analytic methods and conclusions. Although legal scholars were late to follow suit, the language of game theory seems to have taken a prominent position in much of the recent literature in law and economics.

This course introduces students to the basic concepts of game theory, and its main applications in legal analysis. Although the course is based on prior studies in the economic analysis of law, it assumes no previous knowledge of game theory or mathematics. Students will learn how to approach legal questions from a game theoretic perspective, how to construct a game theoretic model, and how to solve this model for its range of possible equilibria. Legal fields that will be discussed include Torts, Contracts, Property, Criminal law, Corporate law, and Civil Procedure.

Course Requirements

Students will be required to register to the course's 'games web site', where they will play various games throughout the course. Participation in these games is anonymous, and it is not graded. The outcomes of these games will be used in class, and compared with outcomes obtained in other classes.

The game web site URL is: <http://gametheory.tau.ac.il/>

Login name: CR691U<student e-mail> - e.g. CR691Ustudent@idc.ac.il

Password: g558173Qx (you will change it upon first entry)

Grades will be based on a final exam, that will be taken with open books.

Literature

The following books will be referred along the course. Letters in parentheses are used for reference to the relevant chapters for each class:

Dixit & Skeath, **GAMES OF STRATEGY** (2nd ED.) (DS)

Baird, Gertner, Picker, **GAME THEORY AND THE LAW** (BGP)

Rasmusen, **GAMES AND INFORMATION** (3rd ed.) (R)

Classes

Class 1

Introduction to decision theory. Rationality and bounded rationality. Ordinal and Cardinal utility numbers. Definition of strategic games.

✚ Steven Shavell, **FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW**, 1-4

✚ DS: 6-14, 18-20, 20-35

✚ R: 11-17

Class 2

The use of matrices to analyze strategic games. The equilibrium concept. Zero sum games. Maxmin equilibria. Elimination of strictly dominated strategies. Nash equilibria.

✚ DS: 84-101

✚ BGP: 6-23

✚ R: 18-31

Class 3

Paradigmatic Games. Multiple equilibria. Focal Points.

Applications to tort liability and joint property regimes.

✚ Thomas C. Schelling, **THE STRATEGY OF CONFLICT**, ch. 4: Toward a Theory of Interdependent Decision

✚ DS: 105-111

✚ BGP: 19-45

✚ R: 31-33

Class 4

Preference under risk. Mixed Strategies equilibria.

Applications to law enforcement and the litigation process.

✚ DS: 185-194, 233-241

✚ R: 66-74

✚ Bruce L. Hay, *Effort, Information, Settlement, Trial*, 24 **J. LEGAL STUDIES** 29 (1995)

✚ Ehud Guttel and Barak Medina, *Less Crime, More (Vulnerable) Victims: The Distributional Effects of Criminal Sanctions*, ssrn.com/abstract=797764

Class 5

Multiple players games. Collective action problems. Tipping models.

Applications to tender offers, the right to disobey the law, social norms and collective sanctions.

✚ Thomas C. Schelling, **MICROMOTIVES AND MACROBEHAVIOR**, ch. 3: Thermostats, Lemons, and Other Families of Models

✚ DS: 387-403

✚ BGP: 188-202

Class 6

Repeated games with finite and infinite repetitions. Folk Theorems. Discounting.

Applications to contract formation, social norms, antitrust, and shaming penalties.

✚ DS: 345-356

✚ BGP: 165-178

✚ R: 109-117

- ✚ Paul G. Mahoney & Chris W. Sanchirico, Norms, Repeated Games, and the Role of Law, 91 **CALIFORNIA L. REV.** 1281 (2003)
- ✚ Ronald J. Gilson, Robert H. Mnookin, Disputing Through Agents: Cooperation and Conflict Between Lawyers in Litigation, 94 **COLUMBIA L. REV.** 509 (1994).
- ✚ Timothy A. Muris, Product Differentiation: Economics and Antitrust, 5 **GEORGE MASON L. REV.** 303 (1997).

Class 7

Dynamic games with complete information. Backward induction and subgame perfect equilibria. Threats and promises.

Applications to negative expected value suits, and contract offer and acceptance.

- ✚ DS: 45-55
- ✚ BGP: 50-77
- ✚ R: 90-95
- ✚ Lucian A. Bebchuk, *A New Theory Concerning the Credibility and Success of Threats to Sue*, 25 **J. LEGAL STUDIES** 1 (1996).
- ✚ Avery Katz, *The Strategic Structure of Offer and Acceptance: Game Theory and the Law of Contract Formation*, 89 **MICHIGAN L. REV.** 215 (1990).

Class 8

Dynamic games under asymmetric information. Signaling and Screening. Separating and Pooling equilibria.

Applications to contract default rules, warranties, anti-discrimination laws and discovery rules.

- ✚ DS: 272-294
- ✚ BGP: 122-157
- ✚ R: 267-277

- ✚ Ian Ayres, Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 **YALE L. J.** 87 (1989).
- ✚ Ian Ayres, Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement to Facilitate Coasean Trade*, 104 **YALE L.J.** 1027 (1995).
- ✚ Lucian A. Bebchuk, Steven Shavell, *Information and the Scope of Liability for Breach of Contract: The Rule of Hadley v. Baxendale*, 7 **J. LAW, ECONOMICS & ORGANIZATION** 284 (1991).
- ✚ George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 **QUARTERLY J. OF ECONOMICS** 488 (1970).
- ✚ Sanford J. Grossman, *The Information Role of Warranties and Private Disclosure About Product Quality*, 24 **J. OF LAW & ECONOMICS** 461 (1981).
- ✚ Bruce L. Hay, *Civil Discovery: Its Effects and Optimal Scope*, 23 **J. OF LEGAL STUDIES** 481 (1994).
- ✚ Daniel J. Seidman, Alex Stein, *The Right To Silence Helps the Innocent: A Game Theoretic Analysis of the Fifth Amendment Privilege*, 114 **HARVARD L. REV.** 430 (2000).