

Economics 201: Contract Theory

Winter 2003, Joel Watson

In this course, we will survey the contract-theory literature and explore some of the issues and concepts that have dominated the literature in recent years (verifiability constraints, contracting costs, renegotiation opportunities, incompleteness, specific contractual forms, etc.). We have two goals: (a) to develop a working knowledge of advanced theories of contract and (b) to identify promising theoretical and applied projects.

Most class sessions will feature a paper from the recent literature. Early in the quarter, the classes will be conducted in lecture format. Later in the quarter, students will assist in the presentation of papers. Grades will be determined on the basis of the students' performance on (a) a few problem sets, (b) the presentations, and (c) a short paper.

Preliminary Outline:

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| Weeks 1-2 | Technical tools — implementation theory, bargaining theory Basic concepts (alienability, verifiability, enforcement, etc.) |
| Weeks 4-5 | Standard models of contract (moral hazard, teams, adverse selection, hold up) |
| Weeks 5-6 | Renegotiation Theoretical considerations |
| Weeks 7-8 | Incompleteness, costs, property rights, and legal institutions |
| Weeks 9-10 | Relational settings and other topics |

1. Bargaining theory

a. Cooperative solutions

- Kalai, E. (1977), "Proportional Solutions to Bargaining Situations: Intertemporal Utility Comparisons," *Econometrica* 45: 1623-1630.
- Kalai, E. and M. Smorodinsky (1975), "Other Solutions to the Nash Bargaining Problem," *Econometrica* 43: 513-518.
- Koster, R. de, H. Peters, S. Tijs, and P. Wakker (1983), "Risk Sensitivity, Independence of Irrelevant Alternatives and Continuity of Bargaining Solutions," *Mathematical Social Sciences* 4: 295-300.
- Luce, R. D. and H. Raiffa (1957), *Games and Decisions*, Wiley: New York.
- Myerson, R. B. (1977), "Two-Person Bargaining Problems and Comparable Utility," *Econometrica* 45: 1631-1637.
- Myerson, R. B. (1981), "Utilitarianism, Egalitarianism, and the Timing Effect in Social Choice Problems," *Econometrica* 49: 883-897.
- Nash, J. F. (1950), "The Bargaining Problem," *Econometrica* 18: 155-162.
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- Peters, H. (1985), "A Note on Additive Utility and Bargaining," *Economics Letters* 17: 219-222.
- Peters, H. (1986), "Simultaneity of Issues and Additivity in Bargaining," *Econometrica* 54: 153-169.
- Thomson, W. (1994), "Cooperative Models of Bargaining," to appear in *The Handbook of Game Theory* (R. Aumann and S. Hart, eds.).
- Thomson, W. (forthcoming), *Bargaining Theory: The Axiomatic Approach* (San Diego: Academic Press).
- Thomson, W. and R.B. Myerson (1980), "Monotonicity and Independence Axioms," *International Journal of Game Theory* 9: 37-49.

b. Basic strategic models

- Binmore, K. (1990), "Perfect Equilibria in Bargaining Models," in Binmore, K. and P. Dasgupta (eds.), *The Economics of Bargaining*, Basil Blackwell.
- Binmore, K. and P. Dasgupta (1990), *The Economics of Bargaining*, Basil Blackwell.
- Osborne, M. (1991), "Iterated Elimination of Dominated Strategies in Rubinstein's Bargaining Game of Alternating Offers," mimeo.
- Osborne, M. and A. Rubinstein (1990), *Bargaining and Markets*, Academic Press.
- Roth, A. (1985), *Game-theoretic Models of Bargaining*, Cambridge University Press.
- Roth, D. (1993), "Strategic Delay in Bargaining as a Coordination Failure," University of Michigan working paper.
- Rubinstein, A. (1982), "Perfect Equilibrium in a Bargaining Model," *Econometrica* 50: 207-211.

c. Variants and applications

- Avery, C. and P. Zemsky (1994), "Money Burning and Multiple Equilibria in Bargaining," *Games and Economic Behavior* 7: 154-168.
- Binmore, Ken, Ariel Rubinstein and Asher Wolinsky (1986), "The Nash Bargaining Solution in Economic Modeling," *RAND Journal of Economics* 17: 176-188.
- Chun, Y. (1988), "Nash Solution and Timing of Bargaining," *Economics Letters* 28: 27-31.
- Herrero, M. J. (1993), "Two Issue Bargaining," mimeo.
- Ponsati, C. (1992), "Unique Equilibrium in a Model of Bargaining over Many Issues," *Annales d'Economie et de*

Statistique 25/26: 81-100.

Ponsati, C. and J. Sakovics (1995), "Rubinstein Bargaining with Two-Sided Outside Options," Barcelona.

Ponsati, C. and J. Watson (1997), "Multiple-Issue Bargaining and Axiomatic Solutions," *International Journal of Game Theory*.

Roth, A. E. (1995), "Bargaining Experiments," in J. H. Kagel and A. E. Roth (eds.), *The Handbook of Experimental Economics*, Princeton University Press.

Shaked, A. (1994), "Opting Out: Bazaars Versus 'Hi Tech' Markets," *Investigaciones Economicas* 18: 421-432.

Shaked, A. and J. Sutton (1984), "Involuntary Unemployment as a Perfect Equilibrium in a Bargaining Model," *Econometrica* 52: 1351-1364.

d. Incomplete information

Admati, A. and M. Perry (1987), "Strategic Delay in Bargaining," *Review of Economic Studies* 54: 345-364.

Ausubel, L. and R. Deneckere (1989), "Reputation in Bargaining and Durable Goods Monopoly," *Econometrica* 57: 511-531.

Ausubel, L. and R. Deneckere (1992), "Bargaining and the Right to Remain Silent," *Econometrica* 60: 597-625.

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Bikhchandani, S. (1992), "A Bargaining Model with Incomplete Information," *Review of Economic Studies* 59: 187-213.

Chatterjee, K. and L. Samuelson (1987), "Bargaining with Two-sided Incomplete Information: An Infinite Horizon Model with Alternating Offers," *Review of Economic Studies* 54: 175-192.

Cho, I.-K. (1990), "Uncertainty and Delay in Bargaining," *Review of Economic Studies* 57: 575-595.

Cho, I.-K. (1994), "Stationarity, Rationalizability, and Bargaining," *Review of Economic Studies* 61: 357-374.

Cramton, P. (1992), "Strategic Delay in Bargaining with Two-sided Uncertainty," *Review of Economic Studies* 59: 205-225.

Fudenberg, D., D. Levine, and J. Tirole (1985), "Infinite-horizon Models of Bargaining with One-sided Incomplete Information," in A. Roth (ed.) *Game-theoretic Models of Bargaining*, Cambridge University Press.

Fudenberg, D. and J. Tirole (1983), "Sequential Bargaining with Incomplete Information," *Review of Economic Studies* 50: 221-247.

Grossman, S. and M. Perry (1986), "Sequential Bargaining under Asymmetric Information," *Journal of Economic Theory* 39: 120-154.

Gul, F. and H. Sonnenschein (1988), "On Delay in Bargaining with One-Sided Uncertainty," *Econometrica* 56: 601-611.

Kennan, J. and R. Wilson (1993), "Bargaining with Private Information," *Journal of Economic Literature* 31: 45-104.

Rubinstein, A. (1985a), "A Bargaining Model with Incomplete Information about Time Preferences," *Econometrica* 53: 1151-1172.

Rubinstein, A. (1985b), "Choice of Conjectures in a Bargaining Game with Incomplete Information," in A. Roth (ed.) *Game-theoretic Models of Bargaining*, Cambridge University Press.

Wang, R. (1993), "Signaling and Delay: A Solution to Bargaining Models with Two-Sided Uncertainty," Queen's University Working Paper.

Watson, J. (1998), "Alternating-Offer Bargaining with Two-Sided Incomplete Information," *Review of Economic Studies*.