

## OUTLINE

1. DOMINANT STRATEGY IMPLEMENTATION
  - (a) Maskin monotonicity
  - (b) Gibbard-Satterthwaite theorem
  - (c) random dictatorships
  - (d) economic environments
  - (e) Groves-Clarke-Vickrey mechanisms
2. NASH IMPLEMENTATION
3. REFINEMENTS OF NASH EQUILIBRIUM
  - (a) strong Nash equilibrium
  - (b) undominated Nash equilibrium
  - (c) sub-game perfect equilibrium
4. BAYESIAN IMPLEMENTATION
5. TOPICS IN IMPLEMENTATION THEORY
  - (a) bounded implementation
  - (b) virtual implementation
  - (c) double implementation

## GENERAL SURVEY ARTICLES

- Dasgupta, Partha, Peter Hammond, and Eric Maskin (1977), “The Implementation of Social Choice Rules: Some General Results on Incentive Compatibility,” *Review of Economic Studies*, 46:185-216.
- Moore, John (199?), “Implementation, Contracts, and Renegotiation in Environments with Complete Information,” in *Advances in Economic Theory*, J.-J. Laffont (ed.), Cambridge: Cambridge University Press, pp. 182-281.

### 1. DOMINANT STRATEGY IMPLEMENTATION

#### (a) Maskin monotonicity

- Duggan, John and Thomas Schwartz (1993), “Bogosity Results for Maskin Monotonic Social Choice Rules,” mimeograph awaiting revisions.
- Muller, Eitan and Mark A. Satterthwaite (1977), “The Equivalence of Strong Positive Association and Strategy-proofness,” *Journal of Economic Theory*, 14:412-418.
- Saijo, Tatsuyoshi (1987), “On Constant Maskin Monotonic Social Choice Functions,” *Journal of Economic Theory*, 42:382-386.

#### (b) Gibbard-Satterthwaite theorem

- Gibbard, Allen (1973), “Manipulation of Voting Schemes: A General Result,” *Econometrica*, 41:587-602.
- Satterthwaite, Mark A. (1975), “Strategy-Proofness and Arrow’s Conditions: Existence and Correspondence Theorems for Voting Procedures and Social Welfare Functions,” *Journal of Economic Theory*, 10: 187-217.

#### (c) random dictatorships

- Duggan, John (1994), “A Geometric Proof of Gibbard’s Random Dictatorship Theorem,” *Economic Theory* (forthcoming).
- Gibbard, Allen (1977), “Manipulation of Schemes that Mix Voting with Chance,” *Econometrica*, 45:665-681.

#### (d) economic environments

- Barbera, Salvador and Matthew O. Jackson (1992), “Strategy-proof Exchange,” S.E.E.D.S. working paper.
- Hurwicz, Leonid and Mark Walker (1990), “On the Generic Nonoptimality of Dominant-Strategy Allocation Mechanisms: A General Theorem that Includes Pure Exchange Economies,” *Econometrica*, 58:693-704.

- Zhou, Lin (1991), “Impossibility of Strategy-Proof Mechanisms in Economies with Pure Public Goods,” *Review of Economic Studies*, 58: 107-119.
- (e) Groves-Clarke-Vickrey mechanisms
- Green, Jerry and Jean-Jacques Laffont (1977), “Characterization of Satisfactory Mechanisms for the Revelation of Preferences for Public Goods,” *Econometrica*, 45:427-438.
  - Groves, Theodore (1979), “Efficient Collective Choice with Compensation,” in *Aggregation and Revelation of Preferences*, J.-J. Laffont (ed.), Amsterdam: North-Holland, pp. 37-59.
  - Roberts, Kevin (1979), “The Characterization of Implementable Choice Rules,” in *Aggregation and Revelation of Preferences*, J.-J. Laffont (ed.), Amsterdam: North-Holland, pp. 321-348.

## 2. NASH IMPLEMENTATION

- Groves, Theodore and John Ledyard (1977), “Optimal Allocation of Public Goods: A Solution to the ‘Free Rider’ Problem,” *Econometrica*, 45: 783-809.
- Maskin, Eric S. (1985), “The Theory of Implementation in Nash Equilibrium: A Survey,” in *Social Goals and Social Organization: Essays in Memory of Elisha Pazner*, L. Hurwicz, D. Schmeidler, H. Sonnenschein (ed.s), Cambridge: Cambridge University Press, pp. 173-203.
- Moore, John and Rafael Repullo (1990), “Nash Implementation: A Full Characterization,” *Econometrica*, 58:1083-1099.
- Repullo, R. (1987), “A Simple Proof of Maskin’s Theorem on Nash Implementation,” *Social Choice and Welfare*, 4:39-41.
- Saijo, T. (1988), “Strategy Space Reductions in Maskin’s Theorem: Sufficient Conditions for Nash Implementation,” *Econometrica*, 56: 693-700.

## 3. REFINEMENTS OF NASH EQUILIBRIUM

### (a) strong Nash equilibrium

- Maskin, Eric (1979), “Implementation and Strong Nash Equilibrium,” in *Aggregation and Revelation of Preferences*, J.-J. Laffont (ed.), Amsterdam: North-Holland, pp. 433-439.

### (b) undominated Nash equilibrium

- Palfrey, Thomas R. and Sanjay Srivastava (1991), “Nash Implementation Using Undominated Strategies,” *Econometrica*, 59: 479-501.

(c) sub-game perfect equilibrium

- Abreu, D. and Sen A. (1990), “Subgame Perfect Implementation: A Necessary and Almost Sufficient Condition,” *Journal of Economic Theory*, 50:285-299.
- Moore, J. and Repullo R. (1988), “Subgame Perfect Implementation,” *Econometrica*, 46:1191-1220.

#### 4. BAYESIAN IMPLEMENTATION

- Jackson, Matthew O. (1991), “Bayesian Implementation,” *Econometrica*, 59: 461-477.
- Palfrey, Thomas R. and Sanjay Srivastava (1989), “Implementation with Incomplete Information in Exchange Economies,” *Econometrica*, 57: 115-134.

#### 5. TOPICS IN IMPLEMENTATION THEORY

(a) bounded implementation

- Jackson, Matthew O. (1992), “Implementation in Undominated Strategies: A Look at Bounded Mechanisms,” *Review of Economic Studies*, 59:757-775.

(b) virtual implementation

- Abreu, D. and H. Matsushima (1990, revised 1992), “Virtual Implementation in Iteratively Undominated Strategies: Incomplete Information,” mimeograph.
- Abreu, D. and H. Matsushima (1992), “Virtual Implementation in Iteratively Undominated Strategies: Complete Information,” *Econometrica*, 60:993-1008.
- Abreu, D. and A. Sen (1991), “Virtual Implementation in Nash Equilibrium,” *Econometrica*, 59:997-1021.
- Duggan, John (1994), “Virtual Implementation with Incomplete Information,” revisions in progress.

(c) double implementation

- Tatamitani, Yoshikatsu (1993), “Double Implementation in Nash and Undominated Nash Equilibria in Social Choice Environments,” *Economic Theory*, 3:109-117.