832 is a second semester course in "formal" (i.e. mathematically formulated or expressed) theories of political behavior. It is a survey which covers game theory (theories of non-cooperative bargaining; and theories of coalitions), expansions of material on social choice (to issues of liberalism and efficiency), and the sorts of distributive outcomes one can expect from differing arrangements and how these relate to differing notions of justice. Students should have either the first semester course (or equivalent), a course in calculus, or a course in logic.

The theories are all based on (i.e. derived from) psychological assumptions consistent with rational behavior as used in micro-economics. They include not only those of ordinal preference theory, but also those of utility theory. In the first semester, these axioms were introduced. In the process of developing the axioms and their implications, you spent some time looking at collective action (i.e. public goods), and collective choice (Arrow problems, and majority rule in spatial contexts), and spatial voting models. To do these things, you looked at some parts of two person game theory such as Prisoner Dilemma Games.

TOPICS: This semester, we shall develop our applications of these basic tools into new areas.

1. We start with a brief review of preference and social choice theory, with an extension of a number of topics to refresh our understanding of their formal properties and how they fit into a broader theoretical concern. We emphasize their implications for politics. These include:

   A. The liberal paradox and its connections to the structure of Pareto optimality and to social choice as defined by Arrow; and to prisoner dilemma games.
   B. The testing of the simple game theoretic models (regarding prisoner dilemmas and then also the core) via experiments.
   C. The general non-existence of the core in competitive and other (e.g. social choice) games and its implications. This leads us to consider the possibility of substitutes and extensions of the core to deal with these failures.

2. We then move to some important political questions which were raised by the earlier material, but which have not yet been pursued in the curriculum. These include:

   A. What determines the outcomes of bargains, and which are the predictable outcomes; and more generally, what can we expect from cooperative behavior?
   B. Which political coalitions we can expect to form; and what are their properties. We will apply this material to many situations, including voting games.
   C. Examining bargaining, and the deals made to hold coalitions together will force our attention to turn to notions of fairness in distribution and in bargaining: i.e. how much should each individual get?

3. This forces us to consider whether we can get around the issue of fairness by considering more market like, and less "political" mechanisms. Certainly, we can ask when efficiency can be achieved by some of those mechanisms. Specifically:
A. What exactly are the implications of rationality for the results of markets?
B. How one might get market like efficiency when people are struggling over public, rather than private, goods?
C. Can one develop "market like" properties by setting up special institutions to aggregate preferences? Or can we do it by permitting citizens to freely migrate between political jurisdictions? These topics are partially handled by the theories of demand revelation and of clubs. Surprisingly, perhaps, these also lead us directly to questions of distributive justice.

4. We then pursue the topic of distributive fairness directly:

A. What is the nature of distributive justice, if we accept preferences as its basis?
B. Should rationality, or rational self-interest be the starting point for such analyses? At least according to some scholars (Sen, Baier etc.) these constitute questionable starting points for ethical analysis. This possible line of criticism goes deep, and
C. gives us occasion to reconsider some of the behavioral assumptions at the foundation of the theories.

PAPERS: We end the semester by letting each of you present a research design of a test, or an extension, or an application of a proof from some of the material of the 2 semesters to an area of interest to you. For those taking the course for credit, half of your grade will depend upon this (split 20-30-50 on the first draft, presentation and last draft of the paper). After the first draft (due 4/13) is handed back with comments, you will present the material, and after discussion, you will be expected to rework the paper, and write it up as a semester paper. In this, length is not a virtue; quality and care of thought are. The final paper is to be handed in, typed, no later than Wednesday, May 11.

All the regularly enrolled students will also take a final exam. The time for the exam will be arranged at everyone’s convenience. Study guides and questions will be made available in April.

Course grading:
20% on class discussion
20% on 5 mandatory exercises (but only 3 are specified now, 1 today, 2 in syl.)
45% on final RD paper, (9% on first draft, 13.5% on presentation, 22.5% on final draft)
15% final exam

Only Axelrod and Ordeshook are required texts. The many articles will be available from BelJean in unbound xeroxes. I recommend they be purchased, even though they are likely to cost more than $100. For those interested, the following books are useful reading in the course, and may be useful to purchase as general reference works or classics in the field: (Those with an * are not generally available but are occasionally around, while those with a + are on reserve at the graduate reserve desk.)


*Barry and Hardin, Rational Man and Irrational Society. Sage. ISBN 0-8039-1851-9 -- a collection of essays on collective action, majority rule and social choice. We will read many of them but they are also all available in journals. However, the editors of the volume added solid, short, interpretative essays to help the under understand each of the technical pieces. I recommend all purchase this volume.

political migration. You will be given a choice of readings and this may be one of them.

*Luce and Raiffa, Games and Decisions. Wiley, 1957. -- This is the old standard text for
game theory and a must for the first semester course. We will use one chapter. It is
expensive ($29.50) (or not even available, as it is out of print) but excellent as a first
solid text.

*Margolis, Howard Selfishness, Altruism, and Rationality -- A new look at the relationship
between rationality and self-interest. Not bad but pricey.

expensive, useful but not essential for purchase. Soon to be released as a better

*Niskanen, Wm. A. Jr. (1971) Bureaucracy and Representative Government. Aldine:
Chicago.


*Rapoport, Anatol (1966) Two-Person Game Theory: The Essential Ideas. Ann Arbor:
University of Michigan Press. -- a good deal for a clear exposition of 2 person
textory. Solid material on bargaining. Not as good as Luce and Raiffa. Currently out
of print.

Michigan Press: Ann Arbor, (esp. good on the origins and limitations of the
characteristic function and the solution concepts.)


*Sen, A. K. Collective Choice and Social Welfare. Holden Day -- This will be one of the
major texts and thus might be purchased.

*Sen, A. K. On Economic Inequality. One of my favorite little books in political science.
This one is a beaut and chock full of information of value to all of us interested in
distributive questions.

A bit more advanced as a text. Interesting treatment of the material.

Also available at the reserve desk are:

Ellis Horwood, Ltd. Chichester, UK. Chap. 9 "Measurement, Modelling and
Interpretation."

Cambridge.

*Public Choice, Vol. XXIX, no. 2. Special supplement to Spring 1977, on alternative
demand revealing procedures.

ASSIGNMENTS (+ are available at the res. desk):

#1. REVIEW OF ESSENTIALS: EXTENSIONS OF OLD ARGUMENTS. (3 WEEKS)

-- GVPT 832 - Spring 94 -- p. 3 --
1/19 - Reviewing the Preference, Pareto Material: Extending Arrow - Liberal Paradox

Required:

Sen, Collective Choice and Social Welfare, Ch. 6 & 6*


Exercise: Pick a political institution of interest to you. Show (briefly, shouldn't take more than 1-3 pages) in what way it exhibits a liberal paradox problem.

Recommended:


Bonner, John *Introduction to the Theory of Social Choice* Chap. 11.


Potential Research Frontiers:

*What are the general costs of the values which underlie Western Democracies? There are very few works which deal with any of these questions. But, quite obviously, this is one of the important questions for a less one-sided argument regarding political arrangements. It is the implicit question in Arrow and Sen.*

1/26 & 2/2 (two weeks): **2 Person Games - PDG Extensions and Tests**

Required:


--- GVPT 832 - Spring 94 -- p. 4 --


Isaac, R. Mark, James M. Walker, Susan H. Thomas, (1984) "Divergent Evidence on Free Riding: An Experimental Examination of Possible Explanations." PUBLIC CHOICE, 43, 113-149. (in the xerox packet or on reserve)


Kanigel, Robert (1986), Apprentice to Genius: The Making of a Scientific Dynasty. Macmillan:

Exercises:

Assignment #1: (next week) Pick a collective action problem of interest to you. Show it to be a problem in the supply of public goods. Discuss how the properties of public goods lead you to develop hypotheses about the problem.

Assignment #2: (due in 2 weeks) develop a research design (of an experiment) to test a particular aspect of the PD problem you identified last time. Make sure you can understand the interplay between the production functions, and the utility functions, etc.

Recommended:

For All Practical Purposes, The Prisoner Dilemma and Chicken Game video tape, available at the non print media desk of Hornbake Library.


Potential Research Frontiers:
What is the role of experiments in political science research? Is Smith correct that experiments require incentive compatibility? Is this true for in class simulations as well? What is its role in pedagogy? How does this effect our thinking about curricula, and other matters?

#II. COOPERATIVE 2 & N PERSON GAMES (5 WEEKS)

2/2: CHARACTERISTIC FUNCTIONS, COOPERATION & COALITIONS

Required:

Ordeshook, Chap. 7 (Along the way, be sure to pick up an understanding of such terms as SIMPLE & STRONG games). You can skip or skim lightly section 7.1.

+Shubik, Ch. 6 to p. 145.

Recommended:


2/9: The Core (2 weeks)

Required:

Ordeshook, Chap. 8 (to p. 353)

+Shubik, Chapter 6, (p. 153-157; 171-173). (xerox packet)


Exercises:

A. Go back to spatial voting. Demonstrate that the core of a 3 person spatial voting game is the triangle of the bliss points.

B. Prove that the core doesn't exist for a zero sum or redistributational game.

Potential Research Frontiers:

To what extent is the classic definition of politics (who gets what when and how) indicating that at root politics is often close to zero sum and thus there is no core? What is the importance of this finding for the limitations of democratic (and other "desirable") forms of government?

2/16: The Core - II - Experimental Tests

Ordeshook (p. 353-355)


Recommended:


Potential Research Frontiers:

Little other research has really been done on the general limits of the core (when it exists) as a predictor. The PD game is just a hint of what promises to be a pretty serious question regarding the general properties generating instability of the core.

2/23 & 3/2: Alternatives to the Core: The Bargaining Set, and Competitive Solution

Required:

Ordeshook, Chap. 9.


Recommended:


The original papers defining the Bargaining Set solution concept are not overly difficult and are extraordinarily interesting. See Aumann and Maschler, "The Bargaining Set for Cooperative Games," in Dresher, Shapley, and Tucker, Advances in Game Theory.
Potential Research Frontiers:

*What are the best theoretical descriptions of coalitional questions?* Does it vary as we change context? Look, here, at some of the current work of G. Miller and C. Eavey. How to choose among good theories - the role of experimentation.

#III. EFFICIENCY and EQUITY: Interconnections in Politics via Public Goods - two weeks

3/9 & 23: *Clubs and other Demand Revealing Processes & Questions of Distributive Justice*

Required:

+ Mueller, Public Choice, Chapters 4-9 (Library reserve, and xerox packet)

Recommended: On alternative (Demand Revealing) Mechanisms:


+ Hirschman, *Exit, Voice and Loyalty*, Chaps. 2 - 7


+ Public Choice, vol. XXIX-2, Special Supplement to Spring 1977, especially introduction (Tideman), Groves and Ledyard, paper 10; Tideman and Tullock, paper 11, and Tullock #9.


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Potential Research Frontiers:

Does this require that we reexamine the other demand revelation techniques with an eye to their redistributive consequences?

Can we develop experimental tests of these institutional designs to see how they might perform? What can we say about the use of quasi markets for the implementation of social decisions about public goods? Does this literature say anything of use about the development of a serious future rationale of socialism?

#IV. FAIRNESS and JUSTICE in OUTCOMES - 3 weeks

3/30: Some Underpinnings

Required:

+ Sen, Collective Choice and Social Welfare, ch. 5
+ Sen, On Economic Inequality, Chaps. 1, 4
+ Rawls, A Theory of Justice, Sections 1-4, 8, 10-26, 29


4/6: The Controversies and Alternatives

Required:

+ Nozick, Anarchy, the State and Utopia, pp. 3- 54 & Chaps. 7 & 8


+Sen, On Economic Inequality, pp. 39-41.


Recommended:


+Rawls, Sections 31-39, 55-59, 82

4/13: A Positive Side to the Issue?

Research papers 1st draft due

Required:


Recommended:

+Sen, On Economic Inequality Ch. 2-3


Strotz, "How Income Ought to be Distributed" Journal of Political Economy v. 66 (6/58) 189-205


Potential Research Frontiers:

What is the proper relationship between empirical and normative work on justice? Is there a specifiable role to be played by experiments in the study of distributive justice? How do our political arrangements relate to questions of distributive justice?

#V. FAIRNESS and SELF INTEREST

4/20: On Self Interest & Rationality

On Self Interest: Required:

Margolis, H. Selfishness, Altruism, and Rationality. Chaps. 1-5 & Appx A, B, C.


Recommended:


On Rationality: Required:


Recommended:


Machina, Mark J. (1987) "Choice Under Uncertainty: Problems Solved and Unsolved,


Potential Research Frontiers:

What conditions bring out self interest? What conditions bring out other interests? Can we develop a more general model of rational egoism?

4/27 and 5/4: Presentation of Student Research Papers

If needed, we will schedule an extra session to complete the presentations.

Bibliography - Required Items


Kanigel, Robert (1986), Apprentice to Genius: The Making of a Scientific Dynasty. Macmillan:


Miller, G. "Is the Invisible Hand Biased?" (Ch. 8 in Cities By Contract: pp 163-189).


Public Choice, Vol. XXIX, no. 2. Special supplement to Spring 1977, on alternative demand revealing procedures.


