

POLI 216: Formal methods in liberal and democratic theory  
Winter 2017

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### Course Description

This seminar offers a brief introduction to the use of formal models to address the kinds of conceptual and normative issues that occupy political philosophers. The course revolves around three classic models of social choice: Arrow's "Impossibility Theorem"; Nash's bargaining solution; and Harsanyi's arguments for Utilitarianism. We will try to understand the technical details of these models, as well as their significance (or lack thereof) for substantive conceptual and normative issues.

*Note regarding the technical material.* No one should avoid taking the course on account of reservations about their technical proficiency. We will not emphasize technical proficiency for its own sake. We will work through the technical aspects together to enable you to explore the substantive significance of these models or to explore novel applications of these models. The basic technical apparatus for the course is presented in chapter 1 of Gaertner's *A Primer on Social Choice Theory* (listed below). We will go over this material in the first week. This should already be familiar if you have any exposure to game theory, decision theory, etc., or to set theory and first-order logic.

### Books

You should find copies of these books on your own prior to the start of the quarter. Additional readings will be available electronically.

(SCIV) Kenneth Arrow, *Social Choice and Individual Values*, 3rd edn (Yale UP, 2012)

(PSCT) Wulf Gaertner, *A Primer on Social Choice Theory*, 2nd edn (Oxford UP, 2009)

(TJ) John Rawls, *A Theory of Justice*, 2nd edn (Belknap Press, 1999)

Other titles likely to come.

I also recommend the following as useful supplements.

(EAMP) Daniel Hausman and Michael McPherson, *Economic Analysis, Moral Philosophy, and Public Policy*, 2nd edn (Cambridge UP, 2006)

(TDJ) John Roemer, *Theories of Distributive Justice* (Harvard UP, 1996)

(CCSW) Amartya Sen, *Collective Choice and Social Welfare*<sup>1</sup>

(HP) J. Daniel Velleman, *How to Prove It*, 2nd edn (Cambridge UP, 2006)

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1. Despite its status as a classic, this book has been out of print for years, and used copies are prohibitively expensive. Fortunately, it is finally being re-issued, but will only be available in June 2017. I will distribute a PDF of the text.

## Assessment

**Memos.** Each student will submit 3 short (500-750 words) stubs (as if for a longer paper). Content-wise, you should work on articulating and motivating a research question. (By “motivating” I mean you should answer the question, “Why should the reader care to read a paper exploring your proposed question?”)

*Submission details.* Submit anytime, but no more than 1 per week; all 3 must be submitted by the end of Week 8.

**In-class presentations.** Each student will do 2–3 presentations on the assigned readings. Content-wise, a presentation reconstructs a central proof or argument from the week’s focal readings, and poses a few questions or concerns for class discussion. Students will be placed in “presentation teams” for the purposes of preparing and delivering presentations, with the composition of the teams depending on course enrollment. *Presentation teams should consult with me early on during their preparations.*

*Details.* We will assign presentations during Week 1.

*Tip.* Plan to write a memo during the weeks you are scheduled to present.

**Research paper.** Each student will submit a longer (6000–7500 words) research paper at the end of the term. A research paper can build from a presentation or stub.

*Submission details.*

- Wed Mar 8 (week 9): Submit an anonymized draft of your paper for peer review.
- Wed Mar 15 (week 10): Present your paper in class.
- Wed Mar 22 (week 11): Submit your revised paper for assessment.

**Referee reports.** Students will write referee reports on their peers’ paper drafts. Each draft will receive 2 reports, which means each student will referee 2 papers. We’ll talk about referee reports in more detail later in the quarter.

*Details.* Papers will be circulated for review no later than Thurs Mar 9 (week 9). Referee reports must be submitted to me no later than Tues Mar 14 (week 10).

## Grades

### Everyone starts with an A.

Individual assignments are graded on a ✓/✗ basis. The minimum standards for a ✓ are basically equivalent to a B+. More specifically, you receive a ✓ if your paper/presentation exhibits the central virtues of good scholarship (to an appropriate degree):

- Papers and presentations use plain, descriptive language. No more technical jargon than necessary, and jargon is clearly defined when used.
- Others' arguments are charitably reconstructed; texts are not willfully distorted.
- Papers and presentations demonstrate familiarity with the relevant assigned texts, and make judicious use of textual evidence when appropriate.
- Papers exhibits at least a moderate level of intellectual ambition (appropriate to the student's stage of development). That is, papers and presentations take on relatively significant issues and do not simply take on insignificant/banal/trivial points of detail.
- Papers engage with existing literature in a constructive spirit, and does not simply point out flaws in the existing literature.

Either of the following conditions is sufficient for **dropping to a B**:

- ✗ on 3–4 stubs/presentations/reports;
- ✗ 1–2 stubs/presentations/reports, plus ✗ on the research paper.

Either of the following conditions is sufficient for **dropping to a C**:

- ✗ on 5+ stubs/presentations/reports;
- ✗ on 3–4 stubs/presentations/reports, plus ✗ on the research paper.

**In-class participation.** Consistently conscientious participation leads to a one-third step grade increase (e.g., from B to B+); consistently poor participation in class leads to a one-third step decrease. But—I don't give A+.

**Pass/fail.** A letter grade of B– or above is a pass; fail otherwise.

## Expectations

**Readings.** The volume of required reading is, relative to other classes, not especially high. The emphasis is on depth of understanding, so you should try your best to understand the details of core proofs and arguments. Additional suggested readings offer alternative presentations or perspectives on the required reading as a means to enhance your understanding.

N.B. Many of you might find the readings technically challenging. Do your best to understand the details, but don't despair if this proves to be overwhelming. Class discussion will aim to give you the intuition behind the formalism. An objective of this course is to help you become comfortable with formal methods; this is can only be achieved with repeated exposure. With consistent effort, you will become more comfortable with the formalism over the course of the quarter.

**Approach.** Treat everything as work in progress. I do not expect you to demonstrate expertise; but I do expect you to demonstrate initiative and serious effort. You should use written assignments and presentations to test out ideas and see where they lead. There are no penalties for attempting an argument that ultimately fails. Papers and presentations are only penalized for being tedious, unimaginative, careless, or sloppy. Not every idea you have will be publishable; but you should at least give yourself a chance by starting with interesting ideas and ambitious arguments.

**Word limits.** Word limits are strict—no exceptions. If you're over the word limit, I'll send the paper back without grading it. Tailor your focus to the word limit (don't bite off more than you can chew). Streamline your arguments (bracket unnecessary details). Cut the fat in your prose (no unnecessary words).

**Obligatory note about plagiarism.** Plagiarism is a cardinal scholarly offense, and will not be tolerated in any form. The first offense will result in immediate failure of the class. I will also refer the case to the Academic Integrity Office, where additional administrative penalties may be assigned.

Plagiarism will be defined as follows:

*Plagiarism* consists in taking credit for academic work that did not originate with you. The following are examples: (1) Using the words of another person without citing the reference. (2) Collaborating on an assignment without noting the contribution of the other author(s).

## Schedule (provisional)

Subject to revision. (\*) marks the week's focal readings; unmarked listings are recommended supplementary readings.

### Formal models and conceptual problems; introduction to utility representations

- Week 1      (\*) James Johnson, "Models Among Political Theorists", *AJPS* (2014)  
              (\*) Daniel Hausman, *The Inexact and Separate Science of Economics*, ch. 5  
              (\*) Larry Laudan, *Progress and Its Problems*, ch. 2  
              (\*) Gaertner, *PSCT*, ch. 1  
              Sen, *CCSW*, chs. 1 and 1\*  
              Tadelis, *Game Theory*, chs. 1–2  
              Velleman, *HP*, chs. 4–5

*Goals:* Understand: formal representation of preferences; utility representations; ordinal vs. cardinal utility. Explore: the place of conceptual problems within social science and political philosophy; the use of formal models for addressing conceptual problems.

### Axiomatic (Arrowian) social choice

- Week 2      (\*) Arrow, *SCIV*, esp. chs. 1, 2, 5, 8  
              (\*) Gaertner, *PSCT*, ch. 2  
              Humphreys, *Political Games*, part 3  
              Patty and Penn, *Social Choice and Legitimacy*, ch. 3  
              Roemer, *TDJ*, ch. 1  
              Sen, *CCSW*, chs. 3 and 3\*

*Goals:* Understand: Arrow's axioms and the mechanics of Arrow's proof; interpersonal comparability; domain restrictions. Explore: applications of the Arrowian model.

*Prez:* Reconstruct a proof of Arrow's theorem (from ch. 8).

### Popular rule

- Week 3      (\*) Sean Ingham, "Social choice and popular control", *Journal of Theoretical Politics*  
              (\*) William Riker, *Liberalism Against Populism* (selections, TBD)  
              Gaertner, *PSCT*, chs. 3, 6  
              Patty and Penn, *Social Choice and Legitimacy*, ch. 2  
              Sen, *CCSW*, chs. 7 and 7\*

*Goals:* Understand: Riker's argument for skepticism about popular will; Ingham's proposed notion of popular rule. Explore: the use of formal social choice theory for thinking about popular rule; the relevance of popular will for social choices.

*Prez:* Reconstruct Ingham's notion of popular rule, sketch ways it might answer Riker's skepticism.

### **Axiomatic (Nash) bargaining theory**

- Week 4      (\*) Nash, “The Bargaining Problem”, *Econometrica* (1950)  
              (\*) Nash, “Two-Person Cooperative Games”, *Econometrica* (1953)  
              (\*) Kalai and Smorodinsky  
              Gaertner, *PSCT*, ch. 8  
              Roemer, *TDJ*, ch. 2  
              Sen, *CCSW*, chs. 8 and 8\*

*Goals:* Understand: Nash’s axioms and the mechanics of Nash’s proof; the difference between Nash’s bargaining solution and the Kalai-Smorodinsky solution. Explore: the notions of fairness and mutual advantage specified by these models.

*Prez:* Reconstruct Nash’s proof for his bargaining solution, compare to the Kalai-Smorodinsky model.

### **Bargaining and mutual advantage**

- Week 5      (\*) Barry, *Theories of Justice* (selections, TBD)  
              (\*) Gauthier, *Morals by Agreement* (selections, TBD)  
              Nozick, *Anarchy, State, and Utopia*, pp. 183–232  
              Rawls, *TJ*, secs. 2–3, 10–14

*Goals:* Understand: objections to Nash bargaining as a model of fairness and mutual advantage. Explore: alternative notions of fairness and mutual advantage.

*Prez:* Reconstruct an argument from one of the assigned texts (TBD).

### **Welfarism and social choice**

- Week 6      Sen, *CCSW*, chs. 5, 5\*, 6, 6\*  
              Sen, *CWM*, chs. 11–14  
              Gaertner, *PSCT*, ch. 4

*Goals:* Understand: the concept of welfarism; informational restrictions on social choice; interpersonal comparability (again). Explore: social choice possibilities in differing informational environments; tradeoffs between welfare and other normative values

*Prez:* TBD

### **Axiomatic utilitarianism**

- Week 7      (\*) Harsanyi, *Rational Behavior and Bargaining Equilibrium*, ch. 4  
              (\*) Harsanyi, “Bayesian Decision Theory and Utilitarian Ethics”, *American Economic Review* (1978)  
              Harsanyi, “Cardinal Utility in Welfare Economics...”, *Journal of Political Economy* (1953)  
              Harsanyi, “Cardinal Welfare, Individualistic Ethics...”, *Journal of Political Economy* (1955)  
              John Broome, “General and Personal Good”, in Iwao and Olson, *Oxford Handbook of Value Theory* (2015)

Gaertner, *PSCT*, ch. 7  
Sen, *CCSW*, chs. 9 and 9\*

*Goals:* Understand: the mechanics of Harsanyi's proofs; the notions of fairness and equality specified by Harsanyi's axioms; cardinal utility (again). Explore: the range of applications of Harsanyi's utilitarian theorems.

*Prez:* Reconstruct a proof for Harsanyi's utilitarian theorem.

### **Rawls' original position**

Week 8 (\*) Rawls, *TJ*, secs. 4, 15, 16; ch. 3  
(\*) Rawls, "Some Reasons for the Maximin Criterion", *American Economic Review* (1974)  
(\*) Harsanyi, "Can the Maximin Principle Serve as a Basis for Morality?", *APSR* (1975)  
Gaertner, *PSCT*, ch. 7  
Sen, *CCSW*, chs. 9 and 9\*

*Goals:* Understand: the construction of Rawls's original position model; the argument for Rawls's two principles of justice. Explore: the differences between Harsanyi's and Rawls's models; the notions of fairness, equality, mutual advantage specified by Rawls's model.

*Prez:* Reconstruct Rawls's argument from the original position for his two principles, and contrast Rawls's model with Harsanyi's.

### **Choice behind the veil of ignorance**

Week 9 (\*) Moehler, "The (Stabilized) Nash Bargaining Solution as a Principle of Distributive Justice", *Utilitas* (2010)  
(\*) Moehler, "Contractarian Ethics and Harsanyi's Two Justifications of Utilitarianism", *Politics, Philosophy, and Economics* (2013)  
(\*) Moehler, "The Rawls-Harsanyi Dispute: A Moral Point of View", *Pacific Philosophical Quarterly* (2015)  
Gaus and Thrasher, "Many Models"  
Wiens, "What We Choose When We Choose Justice" (in progress)

*Goals:* Understand: Moehler's argument for the Nash Bargaining Solution as a principle of justice. Explore: alternative constructions of the "original position"; the relevance of "veil of ignorance" models for thinking about fairness, equality, social justice.

*No student presentation*

Week 10 **Student paper presentations**