

Reading Guide The Prisoner's Dilemma

Readings for 31 March 2011

READINGS (REQUIRED)

- [A] Kenneth E. Shepsle and Mark S. Bonchek, *Analyzing Politics: Rationality, Behavior and Institutions* (1997), chapter 8 ("Cooperation"), pp. 198-218; selections from chapter 10 ("The Problem of the Commons"), pp. 288-296. (V*2)
- [B] Play an iterated Prisoner's Dilemma at <http://www.gametheory.net/Web/PDilemma/>

READINGS (RECOMMENDED)

- [C] Garrett Hardin, "The Tragedy of the Commons," *Science* (new series), Vol 162, No, 3859 (Dec 13, 1968), pp. 1243-1248. (V*2)
- [D] Avinash K. Dixit and Barry J. Nalebuff, *Thinking Strategically: The Competitive Edge in Business, Politics and Everyday Life* (1991), ("Introducing the Prisoner's Dilemma: Go Directly to Jail"), pp. 11-14. (V*2)

READINGS (OPTIONAL)

- [E] Avinash K. Dixit and Barry J. Nalebuff, *Thinking Strategically: The Competitive Edge in Business, Politics and Everyday Life* (1991), chapter 4 ("Resolving the Prisoner's Dilemma"), pp. 89-118. (V*2)

[A] Kenneth E. Shepsle and Mark S. Bonchek, *Analyzing Politics: Rationality, Behavior and Institutions* (1997), chapter 8 (“Cooperation”), pp. 198-218; selections from chapter 10 (“The Problem of the Commons”), pp. 288-296. (V*2)

Background

Ken Shepsle is a Professor of Government (that is, Political Science) at Harvard whose areas of research include formal political theory, congressional and parliamentary politics, public policy, and political economy. You can read more about him at: <http://www.gov.harvard.edu/people/faculty/kenneth-shepsle>. Mark Bonchek is a business executive who was a graduate student of Ken Shepsle’s.

Analyzing Politics is a highly-accessible introduction to rational choice theory, drawn from the lectures for Ken Shepsle’s undergraduate course “Thinking about Politics.” (You can find a recent syllabus for this course at: <http://my.harvard.edu/icb/icb.do?keyword=k29033&pageid=icb.page127776>)

Passages to focus on/passages to skim

- Read pp. 198-218 (you may skip the brief selection on p. 218)
- Read pp. 288-296

Though the “Conclusion” on page 295 makes reference to some material that we have not read, it should nonetheless be largely understandable.

Reading Questions:

As you read through the selection, keep in mind the following questions:

- (1) Make sure that you understand the structure of “Hume’s Marsh-Draining Game” (or the “Prisoner’s Dilemma” – see footnote 3, page 202.) (198-204) Make sure that you understand why the Nuclear Disarmament during the Cold War exemplifies this structure. (204-206) Make sure that you understand the complications introduced by repeat play. (207-210)
- (2) What is the tit-for-tat strategy? Why is it not a surefire way to guarantee cooperation in a prisoner’s dilemma scenario?
- (3) Make sure that you understand the mechanisms available for inducing cooperation (internalized values and external enforcement.) How do you think these mechanisms apply to the issues introduced in the Hobbes selection? (210-218)
- (4) What is the “Problem of the Commons”? What mechanisms are available for mitigating this problem? (288-296)

[B] Iterated Prisoner's Dilemma Game at: <http://www.gametheory.net/Web/PDilemma/>

Background

This site will give you a chance to play an iterated Prisoner's Dilemma game against five different "firms."

Please play at least 3 sets of five rounds each.

Reading Questions:

As you play the games, please keep in mind the following questions:

- (1) What is the "personality" of the firm you are playing against? (What strategy is each employing?) What strategy are you employing in playing against them?
- (2) How did you do against each of the firms? What was the maximum score you obtained? The minimum?

[C] Garrett Hardin, "The Tragedy of the Commons," *Science* (new series), Vol 162, No, 3859 (Dec 13, 1968), pp. 1243-1248. (V*2)

Background

Garrett Hardin (1915-2003) was a provocative and controversial ecologist who taught for most of his career at the University of California at Santa Barbara. Among his other accomplishments, he is credited with having coined the phrase "Nice guys finish last." Fans of his work have created a society and website. You can find this – complete with a revolving series of provocative quotations at the page's top – at: <http://www.garretthardinsociety.org/>

Hardin's 1968 paper "The Tragedy of the Commons" is one of the most widely-cited papers in 20th century social science.

We read a summary of this paper on pages 288-296 of Shepsle and Bonchek. I have included the original paper here as a recommended supplement.

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[D] Avinash K. Dixit and Barry J. Nalebuff, *Thinking Strategically: The Competitive Edge in Business, Politics and Everyday Life* (1991), ("Introducing the Prisoner's Dilemma: Go Directly to Jail"), pp. 11-14. (V*2)

[E] Avinash K. Dixit and Barry J. Nalebuff, *Thinking Strategically: The Competitive Edge in Business, Politics and Everyday Life* (1991), chapter 4 ("Resolving the Prisoner's Dilemma"), pp. 89-118. (V*2)

Background

Avinash Dixit is a Professor of Economics at Princeton University. You can read more about him at: <http://www.princeton.edu/~dixitak/home/>. Barry Nalebuff is Professor of Management here at our very own School of Management (SOM). You can read more about him at: <http://mba.yale.edu/faculty/profiles/nalebuff.shtml>.

Their 1991 book -- *Thinking Strategically: The Competitive Edge in Business, Politics and Everyday Life* – offers an engaging and accessible introduction to game theory. In the chapters we are reading they discuss Prisoner's Dilemmas and their resolutions.

Passages to focus on/passages to skim

Recommended: Please read the short introduction to the Prisoner's Dilemma in its entirety (pp. 11-14).

Optional: The longer chapter, "Resolving the Prisoner's Dilemma" (pp. 89-118) is optional.

Reading Questions (for [D])

(1) What is a "zero-sum game"? Why is the Prisoner's Dilemma not a zero-sum game?