

# Iterated Prisoner's Dilemmas & Secular Natural Law

**PHIL 102**

**Ethics, Politics, & Law**

**Lecture Twelve**

# Prisoner's Dilemma

	<b>Your program plays Heart</b>	<b>Your program plays play club</b>
<b>Jeff's programs plays heart</b>	<b>You get 3</b> <b>Jeff gets 3</b>	<b>You get 5</b> <b>Jeff gets 0</b>
<b>Jeff's programs plays club</b>	<b>You get 0</b> <b>Jeff gets 5</b>	<b>You get 1</b> <b>Jeff gets 1</b>

# Repeated Play Tournaments

- Robert Axelrod
- The tournament
  - Each against the others
  - 200 plays
  - Total points
- The players
- The clear winner

# TIT-FOR-TAT

- Plays heart on first move
- Plays what opponent played on previous move
- Simplest program
- Can't "win" against any opponent
- Still accumulates most points and wins the tournament

# Tit-for-Tat's Virtues

- Friendly (cooperates first play)
- Refuses to be a sucker (retaliates for defections)
- Doesn't hold grudges (as soon as opponent begins to cooperate, returns to playing hearts)
- Easy for opponents to figure out

# The Evolution of Cooperation

- In iterated play contexts, rational move may be to play heart (tit-for-tat)
- Cooperation may evolve naturally
- Empirical support for this view
- Is this enough?

# Problem of Altruism

- Biological altruism
  - Vervet monkeys
  - Vampire bats
  - Social insects
- Evolutionary problem
- Group selection verses individual or gene selection
- Kin selection
- Empirical confirmation

# Secular Natural Law

- Prisoner's dilemma's are not hopeless
- Rational to set up and enforce rules
- Cooperative behavior is rational in iterated prisoner's dilemmas
- Biological basis for altruistic behavior toward kin
- Biological basis for cooperative behavior in general?