Spring 2022
PS0700 Research Method in Political Science

[Recitation 6]

Rational Choice Models in Political Science

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The Basic Components of Formal Models

- Primitives [PLAYERS] : Undefined terms
  - Example: Legislators, voters
- Assumptions : Explicitly stated, pre-conditions
  - Example: Individuals attempt to maximize their utility
- Rules : Logic of the model, allows us to make deductions
  - Example: Individual's preferences can be assessed mathematically
- Results : The outcomes from our logic
  - Example: Legislation will converge on the preferences of the median voter

The Assumption of Individual Rationality

- Methodological individualism – individual is main unit of analysis
- People who act in accord with their preferences are self-interested
  - i.e. pursue things they regard as important
- Individual wants, preferences can be inspired from any source
  - i.e. economic, religious, etc.
- Preferences are transitive
  - if you prefer a to b, and b to c, then you must prefer a to c

Paradox of Voting

$$(p_i + p_n) * B - C - p_n * B > 0,$$

or

$$\mathbf{p_i * B - C > 0}$$

- If we consider the probability that you will make a difference in the election, which is essentially zero, and that there are tangible costs.
- This inequality will never be greater than zero, then RATIONAL PEOPLE SHOULD NEVER VOTE!
- Why do people still vote?
  - Public Good?
  - Selective Incentives?

Collective Irrationality

- But do we always behave in a rational way most of the time?
  - What are the limits to rational actions?

- Preferences of many individuals can result in collective decision-making challenges when those preferences are aggregated
  - As a result “collective” rationality is not guaranteed
  - Individuals may be rational, but their aggregated preferences may lead to non-rational outcomes

Let's Play a Game !! (Yay, another extra-credit opportunity ☺)

- You can take one of the two actions: **Contributing 1 point or 2 points**

- Two potential outcomes:

  (1) All the collected points $>$ No. of Students x 1.5

  (a) Earn 3 points if you previously invested 2

  (b) Earn 2 points if you previously invested 1

  (2) All the collected points $\leq$ No. of Students x 1.5

  (a) Earn 1 point if you previously invested 2

  (b) Earn 3 points if you previously invested 1

Article 1. “The Pandemic is a Prisoner’s Dilemma Game”, New York Times

- In what terms, the pandemic is a “Prisoner’s Dilemma Game?”
- Do think game theory models help us to deal with the pandemic? If so, how?
- How can we explain the varying outcomes of vaccination and masking across different countries? Do you think people in different countries use different strategies to maximize their self-interests?

Article 2. "How Game Theory Explains the Leaks in the Trump White House", The New Yorker

- How does game theory explain the leaks in the Trump's White Hose?
- Let's assume that the table on your right is the Trump's administration payoff matrix, how would it differ from the other administration on the right side?

		Officer B	
Officer A	*Trump's White House*	Not Leaking	Leaking Information
	Not Leaking	(5, 5)	(c, b)
	Leaking Information	(b, c)	(0, 0)

		Officer B	
Officer A	*Other White House*	Not Leaking	Leaking Information
	Not Leaking	(5, 5)	(2, 3)
	Leaking Information	(3, 2)	(0, 0)

Article 3. “The 10 Cunning Ways Public Radio Stations Convince You to Give Them Money”, Slate.

- Do you think the people who give money to public radio stations are “rational”? Why, or why not?