The Paradox of voting

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Introduction

▷ We have seen why a state must exist: public goods, rules, etc
▷ Choice of voting rules
▷ Multi-party system
▷ But \textit{why} do people vote?
▷ Public choice says: individuals in the political arena as in the marketplace behave rationally and in their own self-interest.
▷ Probability of altering outcome incredibly small
▷ The Paradox of voting
The rational voter hypothesis

- Developed by Downs (1957): *An economic theory of democracy*
- Two parties or candidates
- Voter compares expected utility from voting for each party and then maximised utility—purely instrumental
- Benefit voter gets for voting for preference is given by $B$
- One’s vote is unlikely to decide the outcome of the election. Decisive when:

  1. Votes of all remaining voters are evenly split ($P_1$)
  2. One’s preferred party would lose by only one vote ($P_2$)

- If preferred candidate wins with probability 0.5, probability of voter’s vote being decisive is given by

  $$P = P_1 + 0.5P_2$$
How is $P$ determined?

- A large and often disagreeing literature on this
- Let $p \ (1 - p)$ denote the probability of a voter voting for candidate 1 and 2 respectively.
- Let $N$ be odd then $P_1$ is probability of exactly 1/2 voting for candidate 1.

$$P = \frac{3e^{-2(N-1)(p-1/2)^2}}{2\sqrt{2\pi(N-1)}} \quad (1)$$

- $P$ declines as $N$ increases, and as $p$ diverts from 1/2
- other possible types, but all include:

$$\frac{\partial P}{\partial N} < 0 \quad (2)$$
The paradox of voting

- Let there be $C$ as a cost of voting e.g. cost of getting to the polling booth
- baby sitter/ loss of wages: opportunity costs
- then a voter decided to vote iff:

$$PB - C > 0 \quad (3)$$

- But $P$ is really small e.g. 100m voters $P = 0.00006$
- Paradox: it is rational not to vote, but people still do....why?
Solutions to the paradox

- Redefine the rational voter’s calculus so that the rational action is now to vote
- Relax the rationality assumption
- Relax the self-interest assumption
‘Civic’ duty

- The act of voting provides benefits not dependent on the consequence of the act (probability of being decisive): civic duty/patriotic

\[ PB + D - C > 0 \]  \hspace{2cm} (4)

- Voting no longer an instrumental act to determine winning candidate but now there is a private act from which satisfaction is derived

- But this reduces the predictive power of what this model can say.

- What guides the voter once they are at the polls?

- does the civic duty result in the voter voting for the candidate that is most beneficial to the general good, or is it based on special interests?
‘Civic’ duty
‘Cat and mouse’: game theory

- If I believe all remaining voters will abstain it is rational for me to vote
- N-person, non-cooperative game in which each person’s strategy is based on expectations with regards to other voters’ decisions
- Some show that solutions to this game involve positive numbers of individuals voting
- But, when there is uncertainty in others’ costs and electorate is large, individuals vote only if the psychic benefits exceed the costs
Rational voter as a minimax-regret strategist

- Maybe voters use strategy that does not weigh each possible state by its probability but with equal probability.
- One calculates not the actual payoff for each choice but the regret: the loss one would experience in choosing the given strategy.
- Strategy is to choose action that minimizes regret.
- boils down to vote for your preferred candidate or abstain.
Optimal to vote if $B > 2C$

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<tr>
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<th>$S_I$</th>
<th>$S_D$</th>
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<tbody>
<tr>
<td>Vote</td>
<td>$C$</td>
<td>0</td>
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<tr>
<td>Abstain</td>
<td>0</td>
<td>$B - C$</td>
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- If one votes and they are indecisive they regret this by $C$
- If one abstains when they are indecisive they have zero regret
- Same too if they vote and they are decisive
- If they abstain and they are decisive then when $B - C > C$ it is rational to vote
Expressive voter hypothesis

- An individual may vote not to bring about a particular election outcome, but to express an opinion as to what that outcome should be.
- Utility from act of voting and the opportunity for expression that this act affords—not from the outcome of the election
- cheering at the sports ground, See Hillman (2010)

\[ D = D' + B \]  \hspace{1cm} (5)

where \( D' \) captures sense of civic duty etc.

- \( P \) or \( PB \) has little explanatory power
The ethical voter hypothesis

- So far all based on maximizing utility postulate
- Two sets of preferences: ethical (others’ utility) and selfish (own utility)
- However, still provides us with ex post rationalization of act:

\[ O_i = U_i + \theta \sum_{j \neq i} U_j \]  \hspace{1cm} (6)
\( \theta = 0: \) selfish; \( \theta = 1 \) altruistic

Hudson and Jones (1994): \( \theta = 0.66/.73 \)

Ethical behavior conditioned response to certain stimuli governed by past reinforcement experience—we learn at a young age: ethical behavior not more or less selfish that what we consider selfish.

Higher education: lower reason to vote?

More education: rewarded by again and again going by the rules and cooperating: more education more cooperation

Income: opportunity cost too high to vote? mark of success of playing game

Voting as a conditioned good habit.
Implications

- Public choice pertains to, whether sincerely or strategically, to attain that outcome promising them the highest benefits.

\[ PB + D - C \] (7)

- Paradox: undermined by large number of voters: \( P \) really small

- Consideration turns to non-instrumental values of voting (\( D \))

- Disagreement over what is in \( D \)

- Expressive voter: expressive utility from expressing preferences: give why but not *how* she votes.

- Ethical voter: explanation of *how* she votes: votes as her ethical behavior tells her to vote. \( D \) is the effect of one’s vote on the welfare of others (e.g. better outcomes if we all vote)

- does not provide testable propositions: how do we find out who cheers? when and by how much?