Altruism (?) in the Presence of Costly Voting: A Theoretical and Experimental Analysis

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INTRODUCTION

- Paradox of voter turnout: the observed turnout rate in elections is much higher than what is predicted by rational choice theory
- Rational choice prediction: the turnout rate would be approx. zero because the probability of casting pivotal vote is almost zero
- Can a combination of noise (bounded rationality) and ethical voting resolve the paradox?

- Approach: theory and laboratory experiments.
  - Noise in the decision making process (bounded rationality) via quantal response equilibrium (Levine and Palfrey, 2007)
  - Ethical (altruism-motivated) voting (Morton and Tyran, 2012)
  - Online chat with adjacent ID numbers
  - ID numbers assigned upon logging into the session
  - Costly voting, with stochastic costs
  - Belief elicitation
    - Obtain quantitative observations of participants’ perceived probabilities of their vote having been pivotal (made or broken a tie), to test its relationship with the probability of voting
    - 2-stage lottery choice menu (Holt and Smith, 2012)

RESULTS (SUMMARY)

- Nonparametric (permutation test) and econometric (probit with subject-level random effects) analyses both found:
  - Turnout was significantly higher in sessions with symmetric payoffs than in those with asymmetric payoffs
  - No significant difference between turnout rates in sessions with 12 vs. 18 subjects
  - Both of these results contradict the model’s predictions

- Econometric results also showed:
  - Strongly negative effect of cost on voting turnout
  - Turnout positively related to the closeness of previous elections
  - Learning effect in first half
  - Within unfavored (cross-voting), ethical voting is significantly higher than non-ethical voting

- Online chat:
  - Spread of information through overlapping chat groups
  - Peer influence
  - May have increased turnout, through urging each other to vote and occasionally asking each other how they had voted in the previous round

- Quantal response equilibrium explains some but not all of the overvoting (relative to the Nash equilibrium)
  - As the number of voting choices increases, the amount of turnout that QRE can explain decreases

- Ethical voting:
  - Was observed but only under certain conditions and dissipated fairly quickly
  - Not enough to explain overvoting (relative to the Nash equilibrium)

- Belief elicitation:
  - Significant and positive relationship between whether a subject had voted in the final round and the perceived probability of their vote having been pivotal (or would have been pivotal, for those who had abstained), after controlling for endogeneity (IV probit)

EXPERIMENTAL DESIGN

- Participants: 180 subjects, over 12 sessions. Conducted in the Veconlab at the University of Virginia, using the Veconlab software

  - Design:
    - 20 rounds (elections) per session
    - 2 voting types, fixed across rounds
    - Choices: vote for Candidate X, vote for Candidate Y, or abstain
    - Payoffs were based upon which candidate won in a given round, not whether/for whom an individual subject had voted

  Asymmetric Payoffs

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<thead>
<tr>
<th></th>
<th>Type 1</th>
<th>Type 2</th>
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<tbody>
<tr>
<td>Candidate X</td>
<td>$2.00</td>
<td>$1.00</td>
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<tr>
<td>Candidate Y</td>
<td>$1.50</td>
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- Payoffs structured so that turnout predictions were:
  - Equal across asymmetric and symmetric payoffs
  - In absence of ethical voting
  - With ethical voting, turnout would be higher with asymmetric payoffs
  - Greater for sessions of 12 than for sessions of 18

- Ethical voting was possible for Type 1 voting for Candidate Y in sessions with asymmetric payoffs

- Voting costs were stochastic draws from a uniform distribution between $0 - 0.42
  - Not incurred if abstained
  - Chat for 1 minute before each round, with immediate neighbors, according to experiment ID numbers

- Belief elicitation done at the end of the last round, before results were released
  - Subjects were not told beforehand about the elicitation stage of the experiment, or the number of rounds

REFERENCES
