Group polarization due to rhetorically-induced asymmetry and heuristic issue substitution

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Overview

- Group polarization effect causes shifts toward extreme
- Results of experiment on NFL betting in groups challenges standard polarization theories
- New theoretical mechanism for group polarization
  - Rhetorically-Induced Asymmetry (RIA) facilitates majority formation at extremes
  - Issue substitution shifts reference point
- New opinion network dynamics model: Accept-Shift-Constrict (ASC)
  - Uncertainty dynamics allows for proximate majorities to emerge and endure
  - Combination allows for groups to shift toward extreme without giving extremists higher network weights as done in typical modeling approach
- ASC model (and simpler RPM model) in qualitative and quantitative agreement with experiment

Group Polarization Effect & Gaps

- Group discussion among members on same side of issue shifts their opinions toward more extreme direction
  - Post-discussion opinion mean greater than pre-discussion mean
  - Originally observed for greater risk acceptance – “risk shift effect”
- Two main explanations…
  - Information sharing: members exposed to new arguments supporting their side of issue
  - Norm-induced: members seek to look more favorable than others in direction of norm
- Reference point under-theorized…
  - Hampers application to natural settings
  - Not integrated with stronger, concurrent attitude change phenomena – majority influence, consensus pressure
  - Cannot make predictions for specific initial opinion distributions
- Little experimental research on effects of network structure
  - No effect of topology (Friedkin 1999)

Experiment

- Triads discuss upcoming NFL game via chat interface
- Subjects asked to wager with respect to point spread
- 197 groups from Amazon Mechanical Turk
- Winnings donated to charity

Theory in Experimental Context

- Correct rhetorical issue is who will win against spread
- Healuristic rhetorical issue is who will win game
- Claim that heuristic issue is substituted for correct issue
  - Attribute substitution
- Both rhetorical issues are concave function of wager
  - Due to risk aversion
- Have different reference points
  - Policy at which probability = 0.5

Experiment Results

- Mean wager shifts due to discussion

RIA & Issue Substitution Theory

- Distinction between policy (opinion) and rhetorical issue used to discuss policy
- Expect rhetorical issue to often be concave function of policy
- Rhetorically-Induced Asymmetry: Concave relationship causes F2 to be closer to F3 than to F1 on rhetorical axis even though they are equally spaced on policy axis
  - More extreme pairs reach agreement
- Rhetorically-Proximate Majority (RPM) forms at F2, F3 average policy
- Final policy more extreme than initial mean group polarization!
- Issue substitution shifts reference point
  - L group on more linear part of curve; weaker RIA implies less polarization
  - Can cause people on same policy side to be on different sides of rhetorical issue (U1 vs. U2, U3)

Models vs. Data

- RMP model passes
  - Only favorite side shows polarization
  - Polarization increases with disagreement
  - Complete shows greater polarization than chain model
  - Goodness of fit test: Q=61
  - ASC model passes: Q=30

Potential Applications

- Small group decision making
  - Political leadership, judicial councils, juries, intelligence analysis, forecasting
- Public opinion
  - Extremism, divergent polarization, discussion networks, citizen deliberation

Opinion Network Modeling

- Models seek to predict how opinions change given initial opinions and network of influence between people
  - e.g. DeGroot, Friedkin- johnson, Consensus Protocol, Bounded Confidence
  - Assuming extremists are more resistant to persuasion is standard approach to group polarization
  - Influence increases with position extremity
  - Needed because mean remains constant for symmetric influence in most models
  - Cannot account for differential risky shifts in experiment

ASC Model

- Accept message as persuasive
  - Acceptability probability falls off rapidly beyond uncertainty range (LOA)
  - Depends directly on rhetorical issue position
- Shift in proportion to opinion difference
  - Constrict LOA if message originates from within LOA
  - Agreement from others solidifies position
- Uncertainty reduction dynamics enables proximate majorities to form and hold their position

Experiment

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Experiment setup

Theory in Experimental Context

Subjective probability curves (spread=5)

Opinion Network Modeling

Models vs. Data

Potential Applications