

Voting and Deliberation

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7 December 2006

WHAT WE KNOW

Voting and Deliberation

Joel Sobel

Feddersen
and
Pesendorfer

Swing Voter
Curse

Deliberation
Fails under
Unanimous
Rule:
Austen-Smith
and
Feddersen

Deliberation
Works under
Unanimous
Rule:
Meirowitz

Questions

1 Homogeneous Preferences, No Deliberation

- Informative Voting and Majority Rule “works.”
- Strategic Voting Need not work for fixed aggregation rule.
- Strategic Voting Works for a properly chosen aggregation rule.

2 Homogeneous Preference and Deliberation Leads to Efficiency.

3 Some Robustness When Preferences are Heterogeneous Ex Post.

4 Voting Environment Irrelevant after Deliberation.

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WHAT COMES NEXT

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- 1 Heterogeneity Without Deliberation
Large Numbers: Full Information Equivalence.
- 2 Heterogeneity with Deliberation
 - 1 Unanimity Fails to Guarantee Full Revelation
 - 2 Environments where Full Information is Revealed

SWING VOTER MODEL

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- 1 Two States and Two Actions
- 2 Three types of agent: partisans of each action and independents
- 3 Uncertainty about number of voters and their information. (An individual is a partisan of candidate 0, 1, independent, or inactive.)
- 4 Active voters receive a signal: either noise or the truth.
- 5 Majority Rule

STRATEGIES

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Active Voters Can Vote for Either Candidate or Abstain.
Partisans and Informed Voters have Dominant Strategy.
Uninformed Agents Must Decide What to Do.
Look for Symmetric Equilibrium.

SINCERE BEHAVIOR IS NOT RATIONAL

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Suppose Prior Favors 1.

- Uninformed voters (sincerely) vote for 1.
- Informed voters vote their information.
- When an uninformed voter is decisive, informed voters must be voting for 0.
- So: uninformed would want to vote for 0.

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- If decisive, it is more likely that you will vote for the worse candidate.

Reason: Informed independent voters vote for the better candidate, so the better candidate is likely to be ahead.

- Voters Abstain.

Uninformed agents vote to balance the vote shares of partisans. If partisans are balanced, then informed agents determine the outcome. Provided that the expected size of partisans groups is small, this can be done by voting with small probability for the smaller partisan group. Abstention rates are high when the expected gap in partisan group size is small.

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- **Good Information Aggregation Properties.**
You do not need many informed independent agents to arrive at good outcome. These agents always vote sincerely and swing voters make informed voters decisive whenever possible.
 - If uninformed can balance partisans, then informed independents determine outcome.
 - If uninformed cannot balance partisans, then full information outcome does not depend on information.
 - Asymptotically you get the result you'd get with full information and majority rule.

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MODEL

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- 1 N voters
- 2 Two outcomes: $X = 0, 1$.
- 3 Continuous ($s \in [0, 1]$) state space.
- 4 Preference parameter ($x \in [-1, 1]$).
- 5 Preferences: $v(x, s)$ is the utility difference between states 1 and 0 for agent x in state s .
- 6 Information: Agent x receives signal about s .
- 7 Strategy: Vote for X .
- 8 Aggregation Rule: Fraction of votes needed to select an outcome. (Assumed to be in $(0, 1)$.)

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Voter x prefers outcome 0 if $v(x, s) > 0$.

Assume that $v(-1, s) < 0 < v(1, s)$ all s .

Higher x means more likely to vote for 0.

Assume continuity and strongly increasing, $s > s'$, $x > x'$
implies:

$$v(x, s) - v(x, s') > \kappa(s - s')$$

and

$$v(x, s) - v(x', s) > \kappa(x - x')$$

for some $\kappa > 0$.

INFORMATION

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- $G(\cdot)$ prior on states with density $g(\cdot)$, uniformly positive and bounded:

$$\frac{1}{\alpha} > g(s) > \alpha$$

for some $\alpha > 0$.

- Type (x, k) where k takes on values from finite set. $F(\cdot)$ prior on types ($F(x, k)$ is the probability that preference type is no greater than x and k is information source. Density $f(\cdot)$ on x , $\sum_k f(x, k) > \alpha$.

- Continuous $\rho_k(\sigma | s)$ describes information structure. Higher signals and higher messages go together (MLRP):

$$\frac{\rho_k(\sigma', s')}{\rho_k(\sigma', s)} > \frac{\rho_k(\sigma, s')}{\rho_k(\sigma, s)}$$

when $\sigma > \sigma'$ and $s > s'$.

$\rho_k(\sigma, s) > \alpha$ for all k, σ , and s .

(No signal rules out a state).

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Voters decide who to vote for given (x, k, σ) .

Monotone structure guarantees that for each k and σ there are at most two cutoffs.

Low x ignore information and vote for 1.

High x ignore information and vote for 0.

The intermediate values condition on information.

CHARACTERIZATION

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When the population grows, the fraction of the population who conditions on information goes to zero.

Intuition: The information content from being pivotal in a large population is larger than the information from a private signal. (This is an oversimplification.)

FULL INFORMATIONAL EQUIVALENCE

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The voting equilibrium outcome is the same as what would result if information were aggregated perfectly.

This result may seem amazing because most people in the population are not using their information.

Keep in mind:

- 1 When the population is large, many people vote informatively even when most do not.
- 2 The voters are those whose preferences are most relevant to selecting the outcome.

Result requires a stronger MLRP. The basic preliminary result is that a pivotal voter almost can infer the state.

NEGATIVE RESULT

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Austen-Smith and Feddersen:

Assume full support, consensus and monotonicity. There exists a fully revealing debate equilibrium if and only if the committee is not minimally diverse.

Assumptions:

full support: harmless

consensus: possibility of ex post agreement.

monotonicity: natural ordering on information.

CONCERNS

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- 1 Why do we care about full revelation?
- 2 Minimally Diverse – always a realization when there is disagreement – is stronger than it looks.

DELIBERATION WORKS, I

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Preference Uncertainty

Standard binary voting, information environment, but assume that preferences may not be aligned.

For some preferences given by: $u(a, X) = -.5(a - X)^2$

For others given by: $v(a, X) = -u(a, X)$

Assume that everything thinks that they are in majority. Full information outcome is equilibrium (in weakly undominated strategies).

Deliberation: Tell Truth.

Voting: Behave sincerely given all information.

Honesty Optimal because you believe that majority will use information "properly."

DELIBERATION WORKS, II

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Redundant Information

At least two other people know exactly what you know.
Under this condition, a voter's behavior is not relevant in a
truth-telling equilibrium, so truth-telling is an equilibrium.

DELIBERATION WORKS, III

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Extended Preferences

Assume that you can reward people for “correct” information. This can break near indifference and induce revelation.

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- **Group Size Effects**
Do larger groups make better decisions? (For fixed institution, no. For best institution, yes?)
- **Who cares about full information equivalence?**
One problem with this concept is that it is defined in terms of majority rule.

- "Broad Indifference"

In almost all models, voter behavior makes a difference with small probability, yet conditioning on low probability event (being pivotal) is essential for equilibrium analysis.

Implications for:

- 1 Participation or information acquisition (substantively). We should be thinking about reasons why people do participate and how institutional environment matters.
 - 2 Equilibrium Refinement (technically)
- How do group decisions differ from individual decisions?
 - 1 Accuracy
 - 2 Polarization

■ Organization of Deliberation

- 1 Who talks when?
- 2 Subdivision.
- 3 Choice of Information Source: Dependence versus Accuracy.

- 1** I provide some answers to the questions above.
- 2 I describe the answers you provide to the questions above. (Tell me about them.)
- 3 I present an overview of models of communication and debate that may identify more techniques and results relevant for the study.

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