Imperfectly informed voters and strategic extremism

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Moderate or extremist political outcomes?

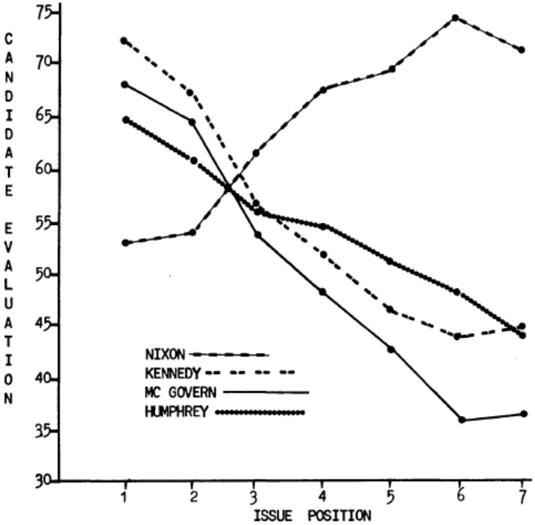
The economic theory of democracy...

If we have:

- voters with **proximity based preferences** on the policy space and
- two **office motivated** candidates.

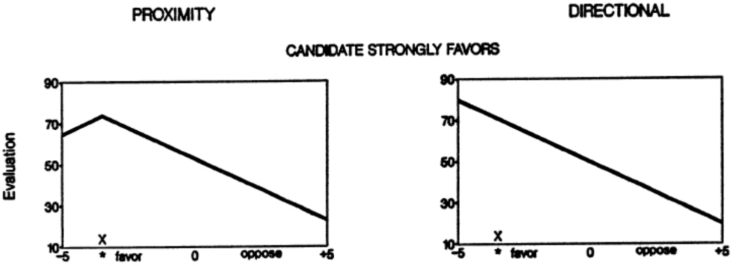
...predicts moderate political outcomes.

Rabinowitz (AJPS, 1978)



Rabinowitz and Macdonald (APSR, 1989)

Why does this occur?



Directional voting theory (emotional foundations).

Puzzle: Why do vote maximizing candidates choose policies that voters dislike?

Partisanship
Candidates want to satisfy their strong supporters.
(Glaeser, Ponzetto and Shapiro, QJE, 2005)

Imperfectly informed voters
When voters are **uninformed** and candidates differ in some personality characteristic and are not absolutely office-motivated, then in equilibrium candidates differentiate.
(Gul and Pesendorfer, JET, 2009)
A binary policy model with a unique instrumental candidate.
No distinction between differentiation and extremism can be made.

The model

- Two office motivated candidates $j = A, B$ who choose policy platforms x_A and x_B in $S \subseteq [0, 1]$.
- Voters have single peaked preferences given by $u_i(x) = -\phi(|x - x_i|)$ ($\phi()$ is any continuous and strictly increasing function) where $x_i \in [0, 1]$ is ideal policy of voter i).
- Candidates have common beliefs on the location of $x_m \in [0, 1]$ represented by a distribution function F.

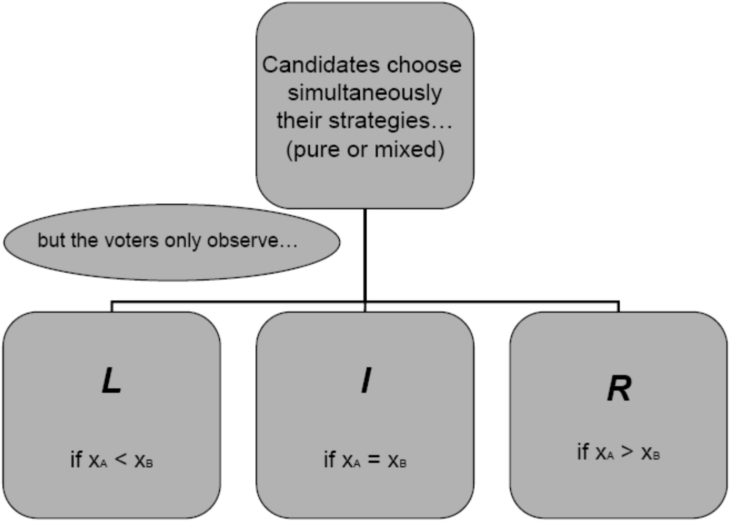
Timing

The game takes place in four stages.

- Candidates simultaneously choose policies (pure or mixed choices).
- **Voters observe** L, I **or** R (McKelvey and Ordeshook, JET, 1985).
- Voters vote.
- Payoffs are realized.

Equilibrium concept: PBE.

Outlook of the Game



Setups

1. **Candidates of equal valence.**
2. **Candidate A enjoys a minimal valence advantage.**

The policy space, S, is either:
a) the continuum $[0, 1]$, or
b) a discrete subset of $[0, 1]$ - n **equidistant locations.**

Candidates of equal valence

The model cannot produce reliable predictions.
Multiple Equilibria.
The game supports:
a) convergent equilibria $x_A = x_B = \bar{x}$ for any $\bar{x} \in S$ (McKelvey and Ordeshook, JET, 1985) and
b) divergent equilibria $\frac{x_A + x_B}{2} = m$ s.t. $F(m) = \frac{1}{2}$.

Informationally, the most robust are the extremist ones $x_A = x_B = 0$ and $x_A = x_B = 1$.

Minimal valence advantage

Unique equilibrium prediction.

Maximum Differentiation (Absolute Extremism) ($n \to \infty$)

Why?

Minimal valence advantage

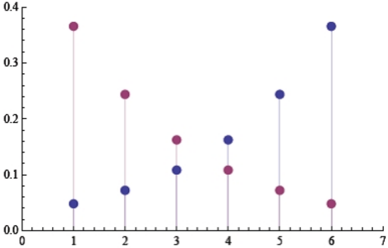
Assume that $F(\frac{1}{2}) > \frac{1}{2}$ and that candidates expect symmetric treatment $(z, 1, 1-z)$ where $z > \frac{1}{2}$.
Then there exists a unique mixed strategy equilibrium in the platform choice subgame such that:

$$p_k = \frac{(\frac{1-z}{z})^{k-1}}{\sum_{k=0}^{n-1} (\frac{1-z}{z})^k} \text{ and } q_k = p_{n-k+1}$$

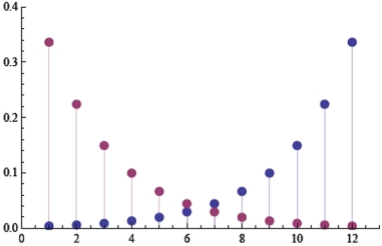
where $k \in \{1, 2, ..., n\}$ and $\{p_1, p_2, ..., p_n\}$ is the probability distribution which corresponds to the mixed strategy of player A and $\{q_1, q_2, ..., q_n\}$ is the probability distribution which corresponds to the mixed strategy of player B.
For $n \to \infty$ this equilibrium converges to the pure strategy profile $x_A = 0$ and $x_B = 1$. That is, for $n \to \infty$ this equilibrium converges to maximum differentiation (absolute extremism).

Unique equilibrium of the policy platform subgame when candidates expect symmetric treatment.

A -> Red, B -> Blue



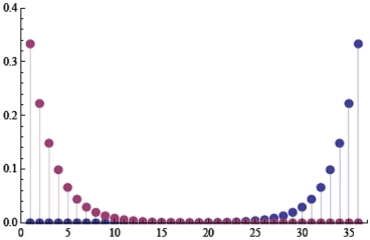
$n = 6$



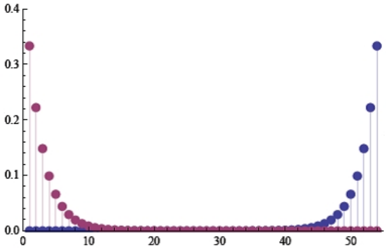
$n = 12$

Unique equilibrium of the policy platform subgame when candidates expect symmetric treatment.

A -> Red, B -> Blue



$n = 36$



$n = 54$

Equilibrium of the whole game (PBE, SE)

- If the signal is L then, due to "symmetry" of the mixed strategies that the two candidates employ, $Eu_i(x_A|L) > Eu_m(x_B|L)$ holds if and only if $x_i < 1/2$. The reverse holds for the case when the voter receives the signal R.
- That is, the unique reasonable z is $F(1/2)$.

Therefore, in equilibrium the candidates choose the mixed strategies:

$$p_k = \frac{\left(\frac{1-F(\frac{1}{2})}{F(\frac{1}{2})}\right)^{k-1}}{\sum_{k=\frac{1}{2}}^{n-1}\left(\frac{1-F(\frac{1}{2})}{F(\frac{1}{2})}\right)^{k}} \text{ and } q_k = p_{n-k+1}.$$

and a voter votes for the "leftist" candidate if $x_i < \frac{1}{2}$, *for the "rightist" candidate if* $x_i > \frac{1}{2}$ *and for* A *when* $x_i = \frac{1}{2}$.

In equilibrium we have, ostensibly, directional voting and absolute extremism ($n \to \infty$).

Robustness

- If another equilibrium exists then it should also converge to absolute extremism ($n \longrightarrow \infty$).
- Continuous policy space.
- Certainty about the voters' preferences.
- Information about the intensity of platform differentiation.
- Coexistence of perfectly informed and imperfectly informed voters.

The voter is informed with probability v

- Three locations version of the model; $S = \{0, \frac{1}{2}, 1\}$ and F uniform.
- The degree of extremism of an equilibrium is equal to the probability that **no candidate** offers the moderate policy.

- A unique PBE exists such that:

$$p_1 = p_3 = \frac{1}{3+2v},\ p_2 = \frac{1+2v}{3+2v} \text{ and } q_1 = q_3 = \frac{1+v}{3+2v},\ q_2 = \frac{1}{3+2v}.$$

- The degree of extremism of this equilibrium is:

$$(1 - p_2)(1 - q_2) = \frac{4+4v}{(3+2v)^2}.$$

Contribution

- The economic theory of democracy predicts extremist behavior when voters are imperfectly informed.
- The model's predictions are in line with observable behavior of candidates and voters and, in contrast to directional voting, they rely on standard rational decision theory assumptions.
- Democracy needs informed citizens to produce "good" outcomes.

Thank you.