The Common Good and Voter Polarization

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Democracy: Two Traditions

1. search for the common good
   (Aristotle; Condorcet (1785))
2. arena for pursuit of heterogeneous interests
   ("Pluralism"; Federalist No. 10; Bentley (1908); Becker (1983))

A Concern

Is the pursuit of partisan interest overwhelming the possibility of advancing the common good?

Motivating Example

Ballot Measure 1:
To fund levee improvements for flood prevention by assessing an income surtax on the wealthy.

Research Question

How much weight (if any) do voters place on the common good relative to their private benefits/costs?

A Problem

- identification is difficult
- literature on valence:
  - proxies (Iaryczower, Kim, and Montero (2020); Buttice and Stone (2012); Beath et al. (2016))
  - elicited beliefs (Kendall, Nannicini, and Trebbi, 2015)
  - identify distribution (Deltas, Herrera, and Polborn, 2016)
- we are interested in estimating common good of *policies* from vote data alone

This Paper

- build a model:
  - heterogeneous ideologies (spatial model)
  - weight the common good with imperfect information
- develop a method to recover preferences and information from votes only
  - identified using theory of proposals
- estimate the model on California ballot propositions (1986-2020)

Preview of Results

1. about three-quarters of voters weight the common good
   - equivalent to shift in ideology of 63% of the distance between parties
2. voters are polarized
   - polarization more than doubled from 1986 to 2020 (Dems moving left)
3. common-good component of issues correlates with intuitive factors

Voter Preferences

- 1D ideological space: policies x_j and q_j, and ideal positions $\tilde{\theta}_{ij}$
  - i denotes voter; j denotes issue
- expressive voting:

$$u(x_j) = -\underbrace{\left(x_j - \tilde{\theta}_{ij}\right)^2}_{private} + w_i \underbrace{V(x_j)}_{common}$$

$$u(q_j) = -\left(q_j - \tilde{\theta}_{ij}\right)^2 + w_i V(q_j)$$

Voter Decision

- choose x_j if

$$\begin{aligned} E\left[u(x_j)|\mathcal{I}_{ij}\right] &\geq E\left[u(q_j)|\mathcal{I}_{ij}\right] \\ \iff E\left[(x_j - q_j)(\tilde{\theta}_{ij} - m_j) + w_i\left(V(x_j) - V(q_j)\right)|I_{ij}\right] &\geq 0 \end{aligned}$$

- $\mathcal{I}_{ij}$ is voter i's information set
- $m_j = \frac{x_j + q_j}{2}$ is midpoint between policies

Voter Information (I)

- $V(x_j) = V(q_j) \in \{0, 1\}$, with common prior, $\rho = \frac{1}{2}$
- voters receive signals over $\psi_j = V(x_j) - V(q_j) \in \{-1, 0, 1\}$
- $Pr(s_{ij} = \psi_j | \psi_j) = \pi_i$; $Pr(s_{ij} \neq \psi_j | \psi_j) = \frac{1-\pi_i}{2}$

Voter Information (II)

- voters know midpoint, m_j, direction, $\mathcal{D}_j \equiv I(x_t > q_t)$, and the distribution of $x_j - q_j$(conditional on m_j and $\mathcal{D}_j$)
  - more easily determined by observing endorsements
- choose x_j if

$$\alpha_j^d(\tilde{\theta}_{ij} - m_j) + w_i E\left[\psi_j | s_{ij} = s\right] \quad \geq \quad 0$$

- $\alpha_j^d \equiv E\left[(x_j - q_j) | m_j, \mathcal{D}_j = d\right]$

Vote Probabilities

- ideology shocks: $\tilde{\theta}_{ij} = \theta_i + \varepsilon_{ij}$, $\varepsilon_{ij} \sim N(0,1)$

$$\gamma_{ij}^{\psi d} = \sum_{s \in S} Pr\left(s_{ij} = s | \psi_j\right) \Phi\left((-1)^d \left(\theta_i - m_j + \frac{w_i}{\alpha_j^d} E\left[\psi_j | s_{ij} = s\right]\right)\right)$$

Comparison to Previous Models

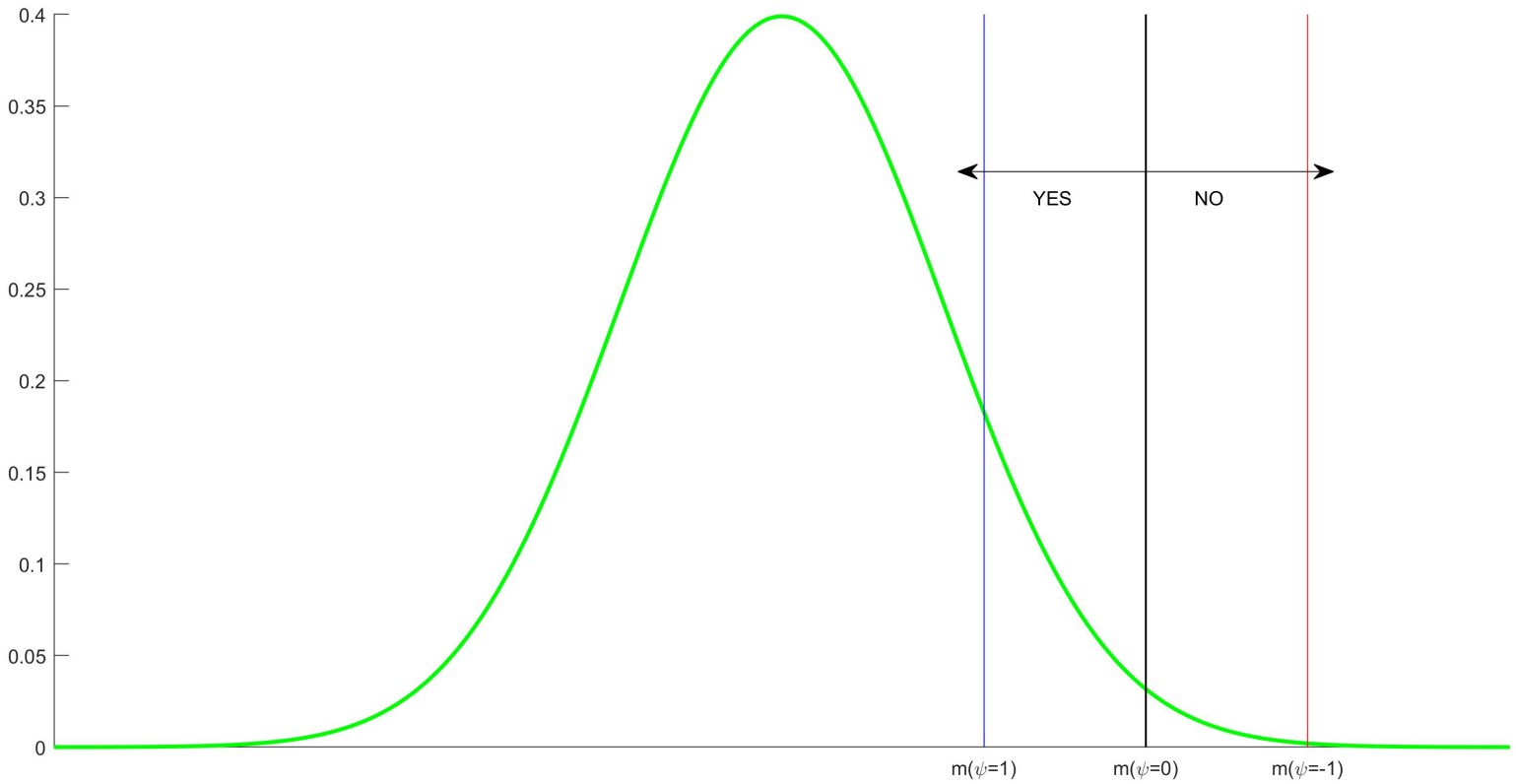
- nests purely spatial model ($w_i = 0$) and purely common value model ($w_i \to \infty$)
- idiosyncratic movements can come from:
  - information (Iaryczower and Shum (2012))
  - or 'mistakes' (Poole and Rosenthal (1984, 1997))

Identification Problem

$$\gamma_{ij}^{\psi d} = \sum_{s \in S} Pr\left(s_{ij} = s|\psi_j\right) \Phi\left(\left(-1\right)^d \left(\theta_i - m_j + \frac{w_i}{\alpha_j^d} E\left[\psi_j|s_{ij} = s\right]\right)\right)$$

- too many free parameters

Solution - Which Policies are Likely?



Policy-Setting

- simple model:
  - $q \sim Q(q)$
  - one voter is chosen uniformly at random to propose x_j
  - proposer sets $x_j = \theta_p$
- provides conditional distributions, $f^d(m|\boldsymbol{\theta}, \mathcal{D}_j = d)$ and $g^d(x - q|\boldsymbol{\theta}, \mathcal{D}_j = d, m_j)$
- α_j^d pinned down by m_j and $\mathcal{D}_j = d$

Model Discussion

- key assumption: extreme midpoints are less likely than centrist
- less important:
  - can have proposer be concerned about proposal passing
  - can have common good be endogenous (unidimensional model) with informed proposer

Identification

- intuition : conditional on policies, correlation in votes suggests common good
  - weight determines 'reach': which voters are affected
  - signal precision determines correlation within those affected
- formally prove identification in paper

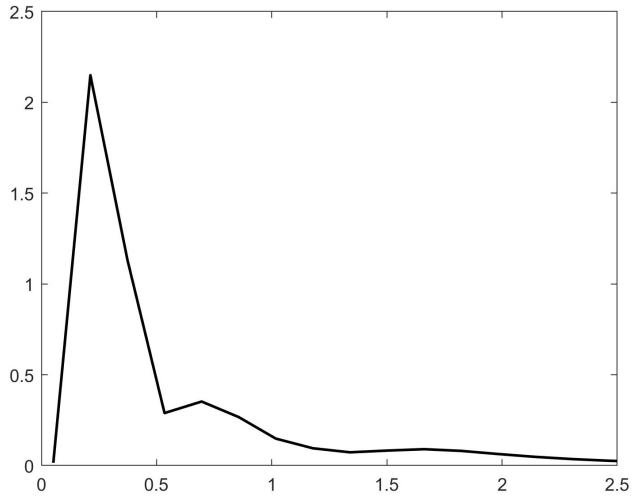
Data

- polling data from Field Poll (1986 to 2012) and PPIC poll (2010 to 2020)
  - 31,007 respondents
  - 96,213 responses
- caveat: only selected propositions are polled (168 out of 364)

Empirical Specification

- ideology: function of age, education, income, race, county of residence, and registered party; $\theta_i = \beta X$
  - also, four-year period dummies and interaction with registered party
- common good weight: age, education, income, race; $w_i = \delta X$
- signal precision: homogeneous
- status quo drawn from generalized error distribution (normal for baseline)
- parameter vector: $\Theta = \left\{ \{m_j, \mathcal{D}_j\}_{j=1}^{J}, \beta, \delta, \pi \right\}$

Common Good Weights



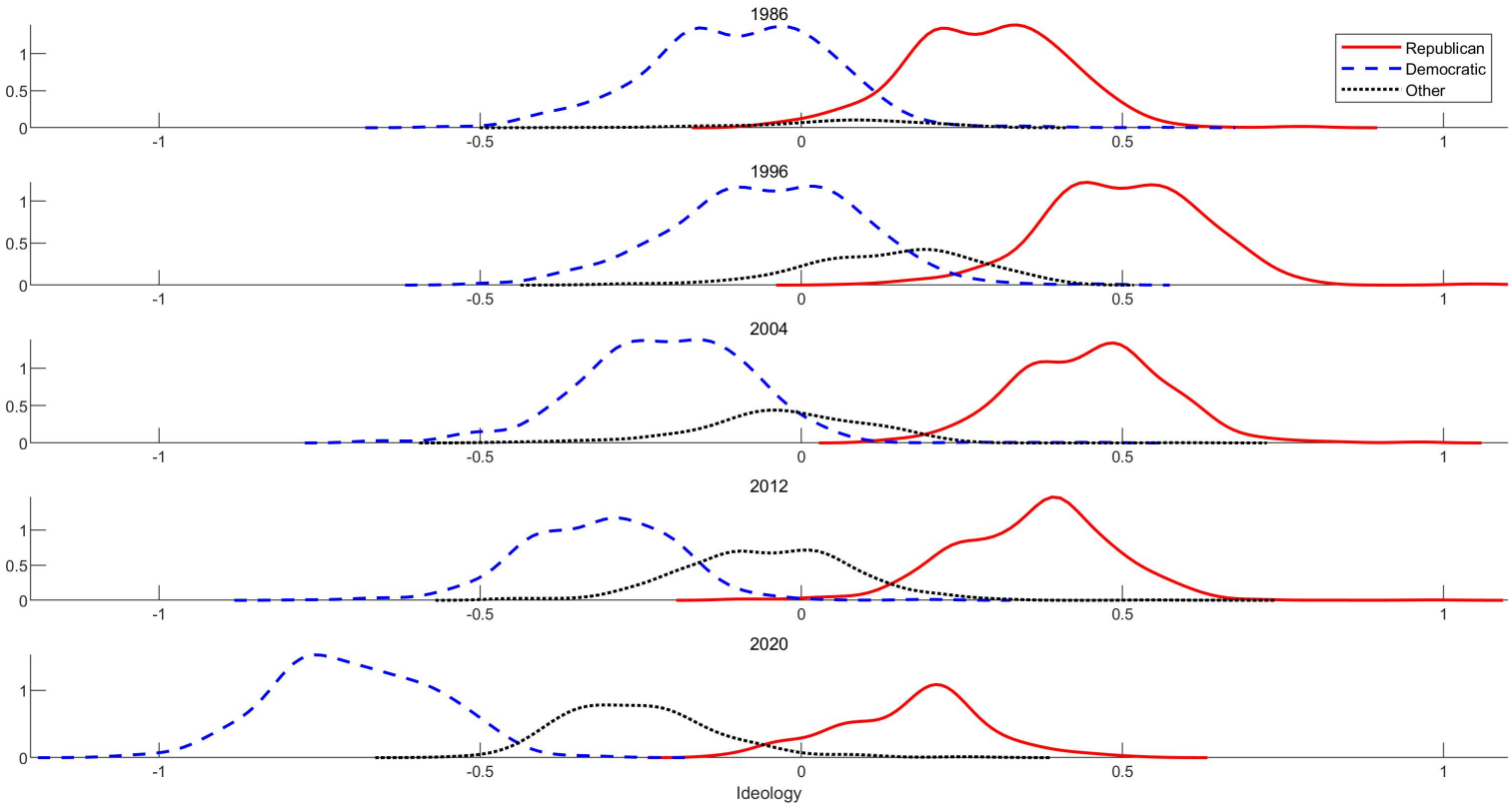
- mean: 0.68 ($p < 0.001$)
- likelihood ratio test rejects spatial model ($p < 0.001$)
- 73% of voters have $w_i > 0$ at 5%
- equivalent ideological shift: 63% of distance between parties

Parameter Estimates

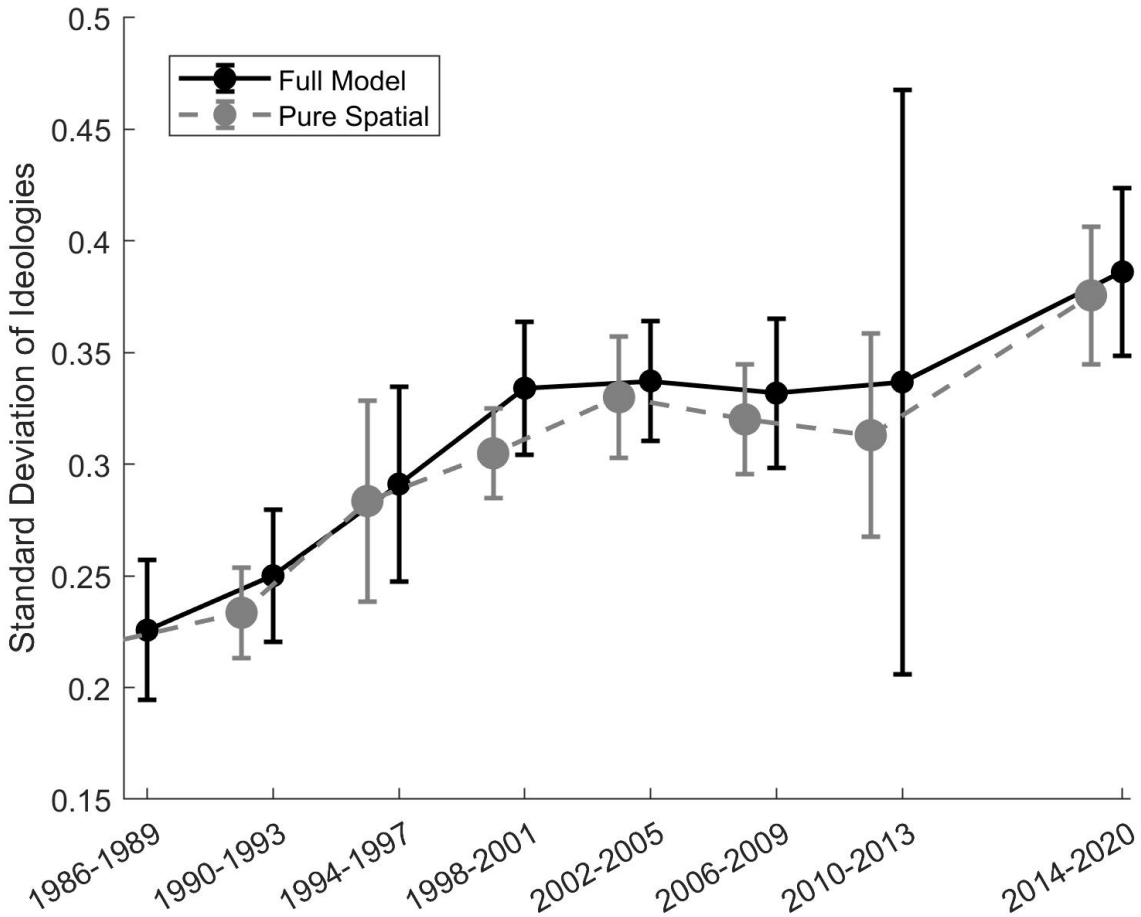
	Variable	Estimate
Common good (δ)	Age:40-64	-0.50 (0.27)
	Age: 65+	**-0.73 (0.36)**
	College	-0.70 (0.36)
	College+	-0.75 (0.51)
	Income: 20-60k	-0.74 (0.40)
	Income: >60k	**-1.46 (0.45)**
	Asian	**1.93 (0.62)**
	Black	**1.63 (0.54)**
	Hispanic	**1.57 (0.40)**
	Constant	0.41 (0.47)
Common good (π)		**0.65 (0.02)**

	Variable	Estimate
Ideology (β)	Age: 40-64	**0.12 (0.03)**
	Age: 65+	**0.20 (0.03)**
	College	**-0.09 (0.03)**
	College+	**-0.23 (0.04)**
	Income: 20-60k	0.03 (0.04)
	Income: >60k	0.07 (0.05)
	Asian	-0.00 (0.10)
	Black	0.03 (0.09)
	Hispanic	0.05 (0.04)

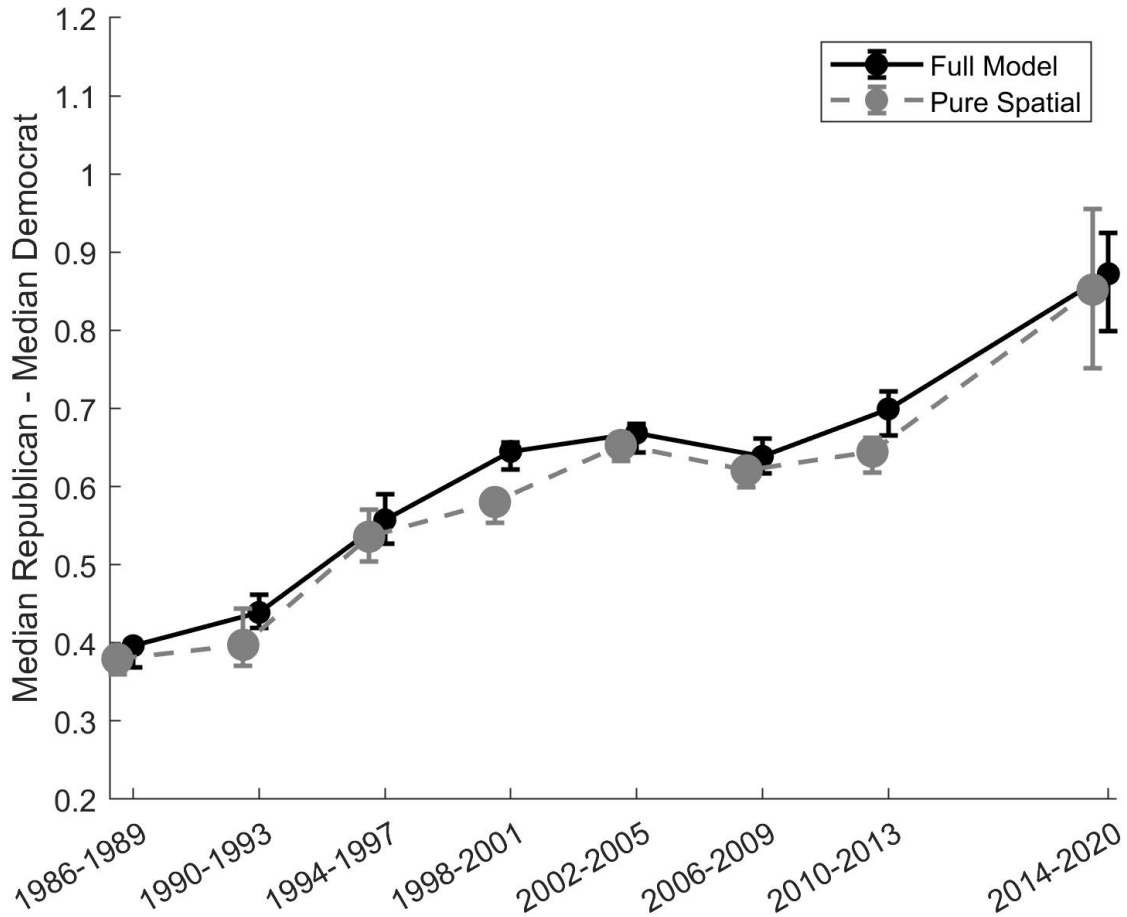
Baseline Ideologies



Baseline Divergence



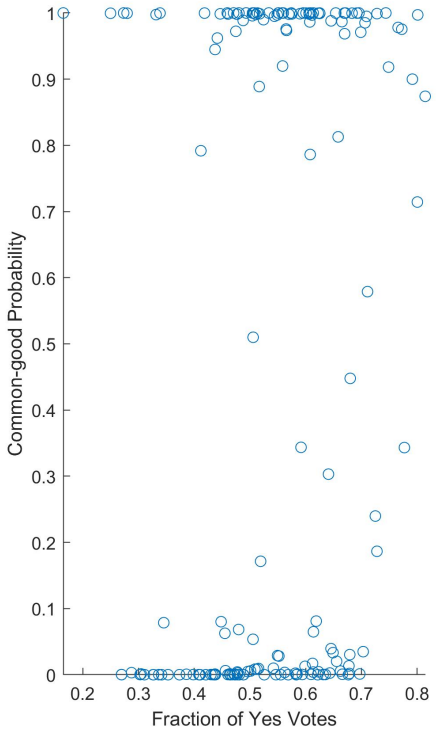
Baseline Party Sorting

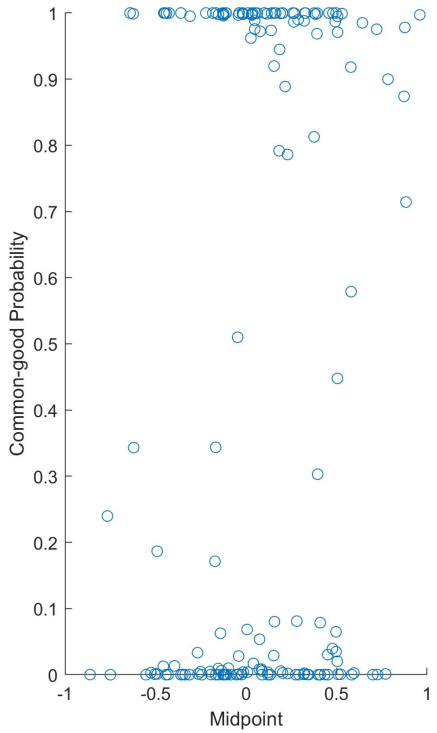


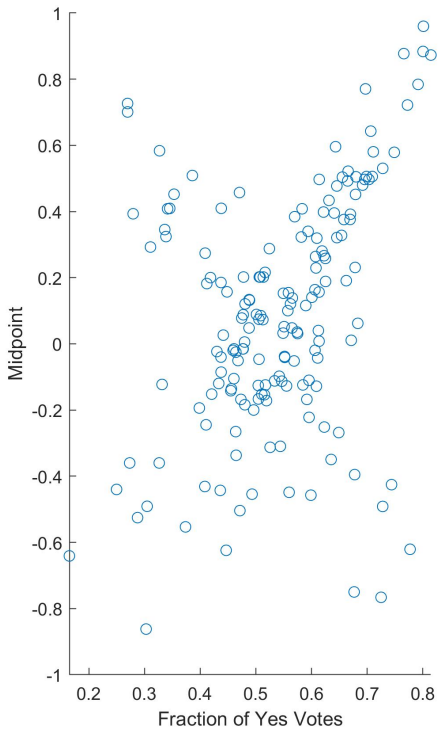
Common Good Correlates

- demographics consistent with those of universalistic voters: Enke et al. (2021)
- identify issues with non-zero common-good (47% of issues)
- common good across issues:
  - proposals with support spending by business groups: $\downarrow$15.7%
  - bond issues: $\uparrow$ 22.3%; water bonds: $\uparrow$78.7%
  - taxes: $\downarrow 8.2\%$

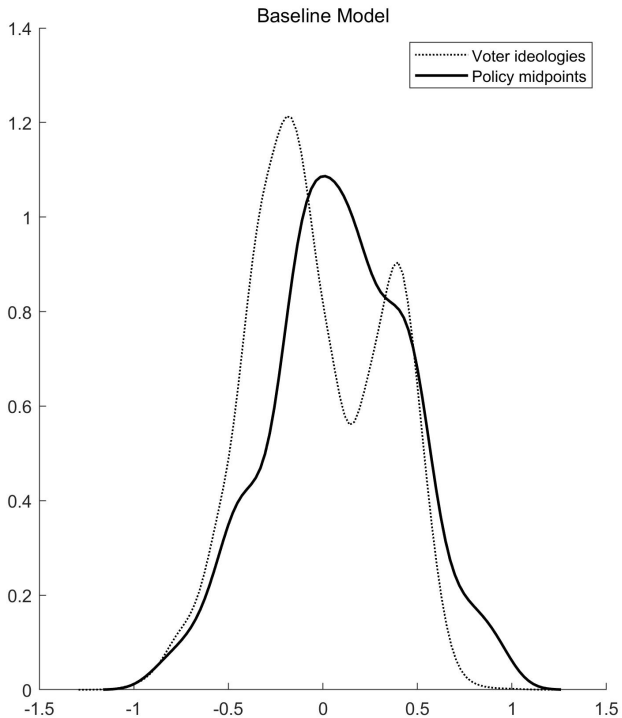
Mechanical?

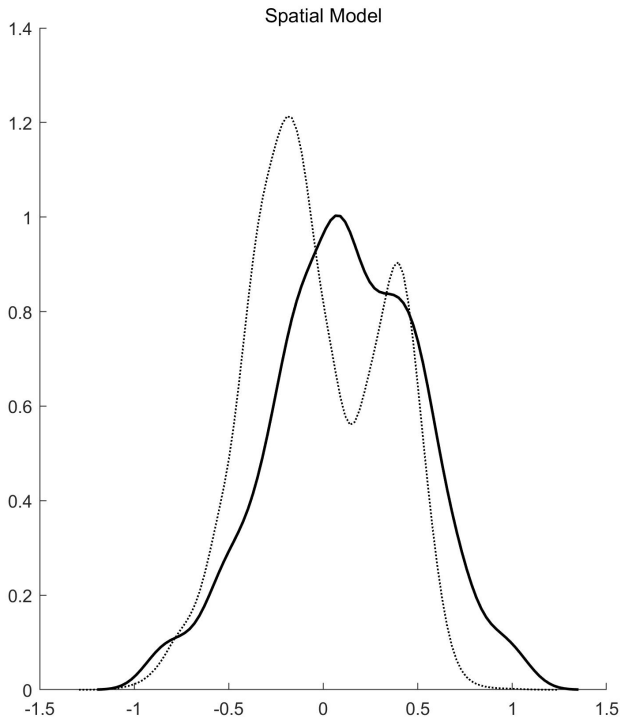

Common-good Probability
Fraction of Yes Votes
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0.2
0.3
0.4
0.5
0.6
0.7
0.8


Common-good Probability
Midpoint
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
-1
-0.5
0
0.5
1


Midpoint
Fraction of Yes Votes
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
0.2
0.3
0.4
0.5
0.6
0.7
0.8

Midpoint Estimates





Common Good Concerns Mitigate Polarization

- 8% decrease with common good; 15% with perfect information

Robustness Specifications

- Concern 1: voter signals may be correlated
  - solution: allow for perfectly correlated signals within party
- Concern 2: may pick up second spatial dimension
  - solution: restrict to tax and regulation issues
- Concern 3: may pick up any common shock to votes (e.g. campaigns)
  - solution: estimate on voters unaware of issue

Robustness Results

		Baseline	Robustness: Correlated Signals	Robustness: Tax and regulation	Robustness: Vote awareness
Mean w_i		0.68 (0.17)	0.14 (0.03)	0.85 (0.48)	1.19 (0.47)
Mean Equivalent ideological shift		0.39	0.15	0.49	0.38
π	Homogeneous	0.65	1.00	0.67	-
	Aware	-	-	-	0.46
	Unaware	-	-	-	0.59

- significant mean weights (5%)
- likelihood ratio tests reject spatial model ($p < 0.001$)
- Vuong test rejects correlated signals ($p < 0.001$)

Conclusion

- model unites different views of democracy
- voters are polarized, but weight the common good
- source of common-good concerns?
  - hard-wired into proposals (public goods)
  - altruism
- methodology can be applied to:
  - legislatures; shareholder voting
  - candidate elections: policy-setting $\rightarrow$ candidate-positioning