Do Citizens Vote Strategically (if They Vote at All)?
Evidence from U.S National Elections

Arianna Degan

University of Rochester & UQAM

Antonio Merlo

University of Pennsylvania

November 2003

Evidence

◆ Abstention & selective abstention:

Many citizens do not vote. After going to vote some citizens decide to vote in one election but not in the other. Typically more people vote for President than for Congress.

◆ Split-ticket voting:

Often individuals vote for different party's candidates for President and Congress.

Example: Evidence from 1984 Elections

Selective abstention →

P \ H	A	V
A	28%	0%
V	5%	67%

Split-ticket voting →

P \ H	D	R
D	34%	6%
R	18%	42%

Evidence from 1984 Elections: Selective Abstention

Democrats →

P \ H	A	V
A	27%	0%
V	5%	68%

Independents ↘

Republicans ↓

P \ H	A	V
A	22%	1%
V	5%	72%

P \ H	A	V
A	53%	0%
V	5%	42%

Evidence from 1984 Elections: Split-Ticket Voting

Democrats →

P \ H	D	R
D	67%	11%
R	10%	12%

Independents ↘

Republicans ↓

P \ H	D	R
D	2%	1%
R	25%	72%

P \ H	D	R
D	20%	3%
R	32%	45%

Research Questions

◆ To what extent is split-ticket voting the natural result of individuals who vote in each election according to their immediate policy preferences?

$\Rightarrow$ What is the proportion of citizens who vote "sincerely" versus "strategically"?

◆ Can we simultaneously account for the patterns of abstention and voting observed in the data?

Sincere Split-Ticket Voting
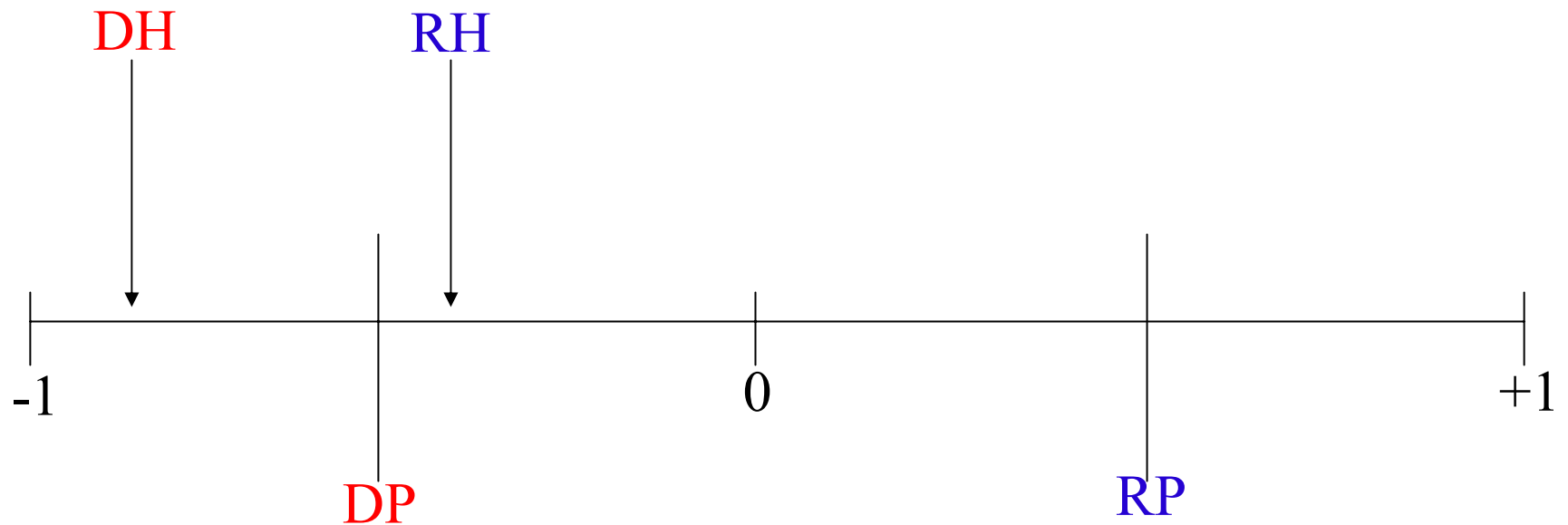
Outline

◆ We propose a joint model of abstention and voting with the following key features:

➢ spatial component

➢ asymmetric information

➢ individuals are allowed to vote in disagreement with their immediate policy-related preferences.

Outline (continued)

◆ We structurally estimate the model using individual-level data on turnout and voting decisions in presidential and congressional elections from 1972 to 2000

◆ The empirical analysis yields estimates of:
  ➢ distribution of citizens' policy preferences
  ➢ distribution of information among citizens
  ➢ proportion of "sincere" and "strategic" citizens

Outline (continued)

◆ We investigate changes in information and strategic behavior as well as policy preferences over time

◆ We conduct experiments to assess the effects of information and strategic voting on electoral results

The Model: Elections and Candidates

◆ There is one period

◆ There are two types of elections: P and H

◆ In each electoral race there are two candidates: R and D

◆ Different electoral districts have different candidates
   running in H and either a D/R incumbent or two challengers

◆ Each candidate $c \in \{R,D\}$ has a policy position $y_c \subseteq [-1,+1]$

The Model: Citizens' (Observed) Heterogeneity

◆ **Electoral district**

Each citizen "j" lives in district $z_j \in \{1,\ldots,n\}$

◆ **Party identification**

Each citizen "j" has a party identification $k_j \in \{d,r,i\}$

◆ **Demographic characteristics**

Each citizen "j" has a vector of characteristics X_j

➢ Age, race, gender, education, income

The Model: Citizens' (Unobserved) Heterogeneity

◆ **Policy preferences**

Each citizen "j" has a most preferred policy $y_j(X_j, k_j) \subseteq [-1, +1]$ and her policy-related utility for candidate c is:

$$U(y_c, y_j) = U^j_c = -(y_c - y_j)^2$$

◆ **Information**

Each citizen can either be informed or uninformed about the elections

➢ Informed π_i

➢ Uninformed $(1 - \pi_i)$

➢ $\pi_i(X, k)$

The Model: Citizens' (Unobserved) Heterogeneity

◆ **Types**

Each citizen can either be sincere, "strategic" in P or "strategic" in H

➢ Sincere $(1- \pi_s)$

➢ Strategic in P $\pi_s (1- \pi_h)$

➢ Strategic in H $\pi_s \pi_h$

➢ $\pi_s(y,k), \pi_h(k)$

◆ **Tolerance for mistakes**

Each sincere citizen has a tolerance level for making voting mistakes in P and in H: $\theta_P, \theta_H > 0$.

The Model: Information

◆ **Knowledge of uninformed**
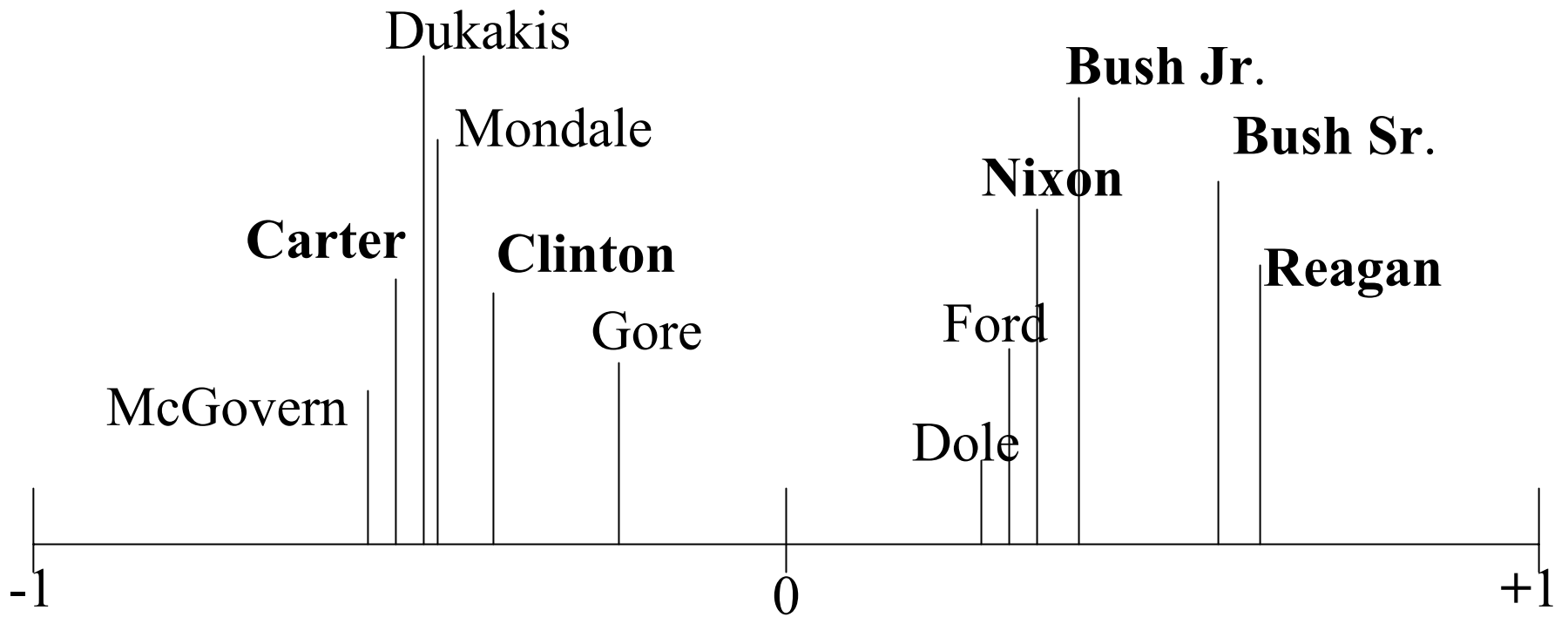
P: D ~ Uniform on [-1,0] & R ~ Uniform on [0,+1]

H: D & R ~ Uniform on [-1,+1] D < R
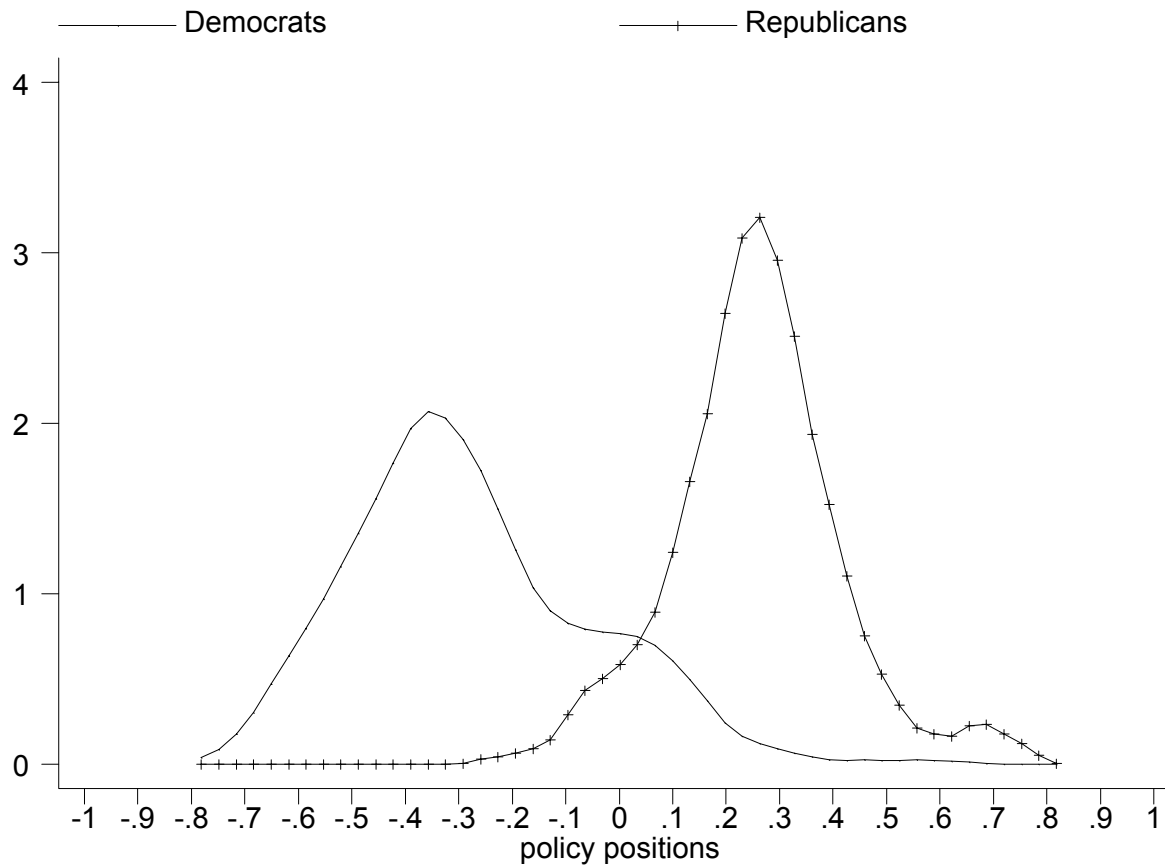

◆ **Knowledge of informed**

P: Policy positions of both candidates

H: Policy positions of incumbents and distribution of
policy positions of challengers

Presidential Elections

Dukakis — Mondale — Carter — McGovern — Clinton — Gore — Dole — Ford — Nixon — Bush Jr. — Bush Sr. — Reagan

-1   0   +1

House Elections

The Model: Types

◆ **Definition 1:** A citizen is *sincere* in an election if conditional on going to vote she votes for the candidate that gives her highest expected policy-related utility

◆ **Definition 2:** A citizen is "*strategic"* in an election if conditional on going to vote she votes for the candidate opposite to the one that gives her highest expected policy-related utility

◆ **Note:** "strategic" is a residual category (not-modeled)

The Model: Mistakes

◆ **Definition**: given her information, the *mistake* a citizen can make in an election is the ex-ante expected utility loss that occurs when a citizen votes for a candidate who ex-post (for realized values of y_D, y_R) is not the one that gives her highest policy-related utility:

$$E\Big(\big[1(\text{voteD and } U^j_D < U^j_R) + 1(\text{voteR and } U^j_D > U^j_R)\big]\ |U^j_D - U^j_R|\ \Big)$$

◆ **Aversion to mistakes**

Sincere citizens are averse to making mistakes.

◆ **Note:** "strategic" citizens cannot be averse to making mistakes

◆ **Note:** informed citizens cannot make mistakes in P

The Model: Voting

◆ **Sincere voting**

Given her information, it is optimal for a *sincere* citizen in an election to:

➢ Vote D if $E[U^j_D - U^j_R] > 0$

➢ Vote R if $E[U^j_D - U^j_R] < 0$

➢ Randomize otherwise

◆ **"Strategic" voting**

Given her information, a "*strategic*" citizen in an election:

➢ Votes R if $E[U^j_D - U^j_R] > 0$

➢ Votes D if $E[U^j_D - U^j_R] < 0$

The Model: Turnout

◆ **Sincere behavior**

Given her information and tolerance levels for mistakes, it is optimal for a *sincere* citizen to:

➢ Vote in P   if $mistake_P \leq \theta_P$
➢ Abstain in P   if $mistake_P > \theta_P$
➢ Vote in H   if $mistake_H \leq \theta_H$
➢ Abstain in H   if $mistake_H > \theta_H$

◆ **Note:** "strategic" citizens do not abstain
◆ **Note:** informed citizens do not abstain in P

Data

◆ ANES (1972-2000)

- ➢ Cross-sections of individual turnout and voting choices in P and H

- ➢ Congressional district, party identification, demographic characteristics

- ➢ We eliminate missing values, uncontested elections and residents of DC

◆ NOMINATE (Poole and Rosenthal)

- ➢ Legislators (and presidents) policy positions on [-1,+1] based on roll-calls (and support to roll-calls) for the 93rd to 107th Congress

Elections

Year	P	H
1972	McGovern v **Nixon**	**D** v R
1976	**Carter** v Ford	**D** v R
1980	Carter v **Reagan**	**D** v R
1984	Mondale v **Reagan**	**D** v R
1988	Dukakis v **Bush Sr.**	**D** v R
1992	**Clinton** v Bush Sr.	**D** v R
1996	**Clinton** v Dole	D v **R**
2000	Gore v **Bush Jr.**	D v **R**

Number of Observations

Year	All	Democrats	Republicans	Independent
1972	1634	787 (48%)	647 (40%)	200 (12%)
1976	1368	690 (50%)	492 (36%)	186 (14%)
1980	888	426 (48%)	335 (38%)	127 (14%)
1984	1407	659 (47%)	593 (42%)	155 (11%)
1988	1112	505 (45%)	479 (43%)	128 (12%)
1992	1531	783 (51%)	570 (37%)	178 (12%)
1996	1170	611 (52%)	463 (40%)	96 (8%)
2000	1016	516 (51%)	390 (38%)	110 (11%)

Descriptive Statistics: Demographic Characteristics

Year	Age	Black	EduL	EduH	Female	Lowinc
1972	44.3	0.07	0.36	0.15	0.56	0.61
1976	46.0	0.08	0.29	0.16	0.60	0.53
1980	44.7	0.09	0.23	0.17	0.55	0.52
1984	43.3	0.09	0.19	0.19	0.55	0.57
1988	44.6	0.10	0.18	0.21	0.55	0.56
1992	45.7	0.14	0.20	0.24	0.54	0.61
1996	48.0	0.10	0.13	0.29	0.54	0.58
2000	47.3	0.10	0.10	0.31	0.54	0.55

Descriptive Statistics: Voters

Year	All	Democrats	Republicans	Independent
1972	67%	65%	76%	43%
1976	66%	67%	75%	42%
1980	65%	63%	77%	36%
1984	67%	68%	73%	42%
1988	64%	65%	70%	37%
1992	63%	67%	68%	32%
1996	69%	68%	78%	34%
2000	64%	66%	71%	29%

Descriptive Statistics: Selective Abstention

Year	All	Democrats	Republicans	Independent
1972	7%	8%	6%	6%
1976	6%	6%	5%	6%
1980	4%	5%	2%	6%
1984	5%	5%	6%	5%
1988	5%	4%	6%	7%
1992	7%	8%	6%	8%
1996	5%	5%	4%	6%
2000	9%	9%	8%	10%

Descriptive Statistics: "Split-Ticket" Voting

Year	All	Democrats	Republicans	Independent
1972	26%	30%	20%	40%
1976	25%	25%	22%	39%
1980	27%	28%	22%	41%
1984	24%	21%	26%	35%
1988	21%	16%	22%	45%
1992	21%	17%	24%	40%
1996	17%	18%	13%	30%
2000	15%	14%	17%	25%

Empirical Analysis

◆ Objects to be estimated:

➢ Distribution of citizens' policy preferences:

$$y_j \sim Beta(p,q|X_j,k_j) \text{ on } [-1,+1]$$

➢ Distributions of tolerance levels for mistakes:

$$\theta_P \sim Lognormal(\mu_P,\sigma) \text{ on } (0,+\infty)$$

$$\theta_H \sim Lognormal(\mu_H,\sigma) \text{ on } (0,+\infty)$$

➢ Distribution of citizens' information:

$$\pi_i(X,k)$$

➢ Distribution of citizens' types:

$$\pi_s(y,k)$$

$$\pi_h(k)$$

Empirical Analysis (continued)

◆ Identification:

  ➢ Exogenous variation in the data

  ➢ Theory

  ➢ Parametric functional forms play little role

◆ Estimation:

  ➢ Theoretical model generates likelihood function

  ➢ Maximum likelihood

Results

◆ Almost all parameters estimated precisely in all years

◆ Model fits all aspects of the data well in all years:
  ➢ Abstention (and selective abstention)
  ➢ Voting patterns (and split-ticket voting)

Goodness of Fit: 1984 Elections

PH	Data	Model
AA	0.2743	0.2604
AD	0.0007	0.0032
AR	0.0028	0.0036
DA	0.0235	0.0215
RA	0.0263	0.0332
DD	0.2303	0.2369
DR	0.0405	0.0404
RD	0.1215	0.1180
RR	0.2800	0.2827

Demographic Characteristics and Policy Preferences

Variable	Policy Preferences
Age	→
Black	←
No HS	←
College +	←
Female	←
Low income	←

Demographic Characteristics and Information

Variable	Information
Age	↑
Black	↓
No HS	↓
College +	↑
Female	↓
Low income	↓

Estimates of Policy Preferences: 1984 Elections

Densities of Policy Preferences 1984

Estimates of Policy Preferences: 1984 Elections
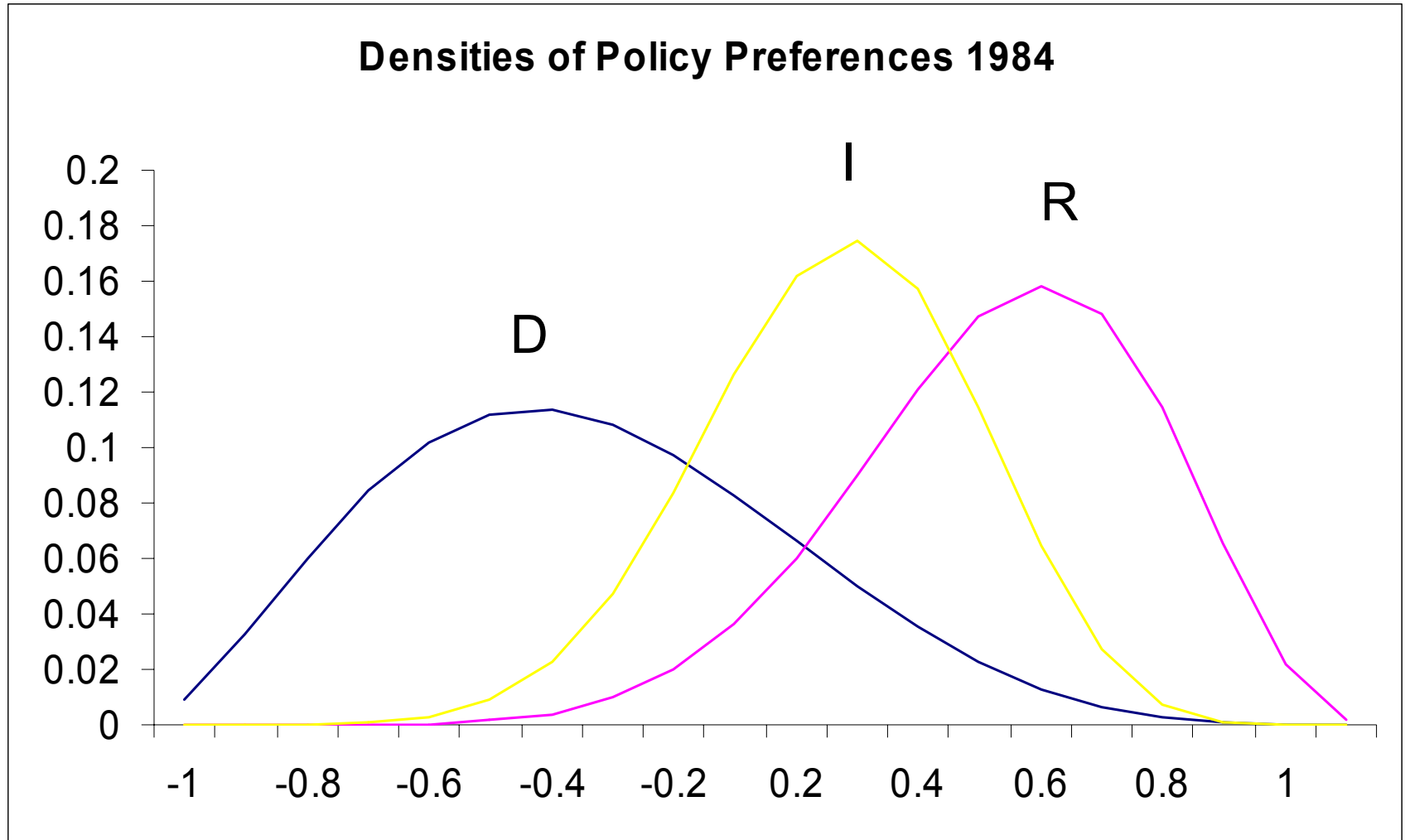
Density of Policy Preferences 1984
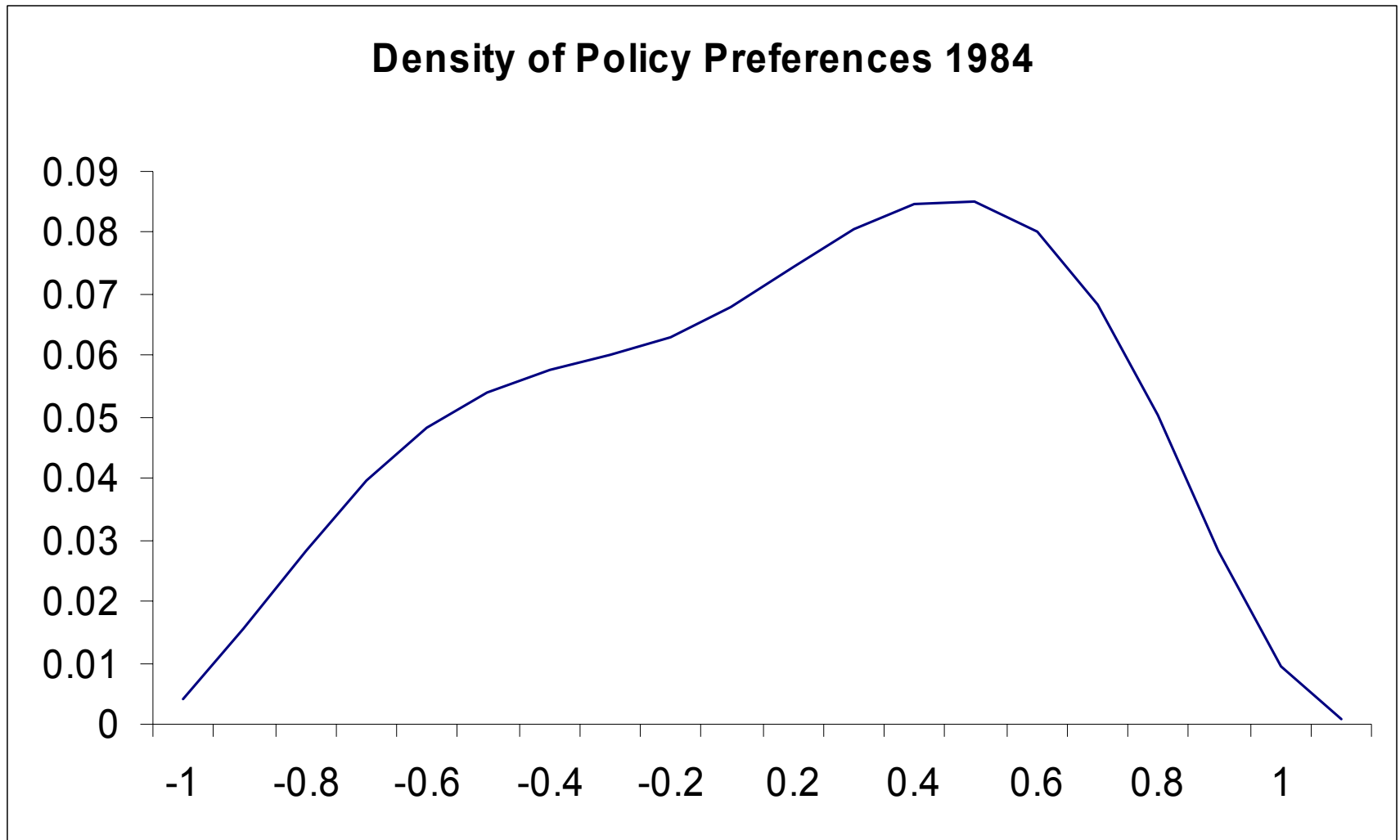
Results: Abstention

◆ Information → Turnout:
  ➢ Uninformed more likely to make ("bigger") mistakes
  ➢ Uninformed more likely to abstain

◆ Turnout in P > Turnout in H:
  ➢ Tolerance to mistakes in P < Tolerance in H
  ➢ More uncertainty in H than in P
  ➢ Mistakes bigger in H than in P
  ➢ Citizens more likely to (selectively) abstain in H

Results: Information

Year	All	Democrats	Republicans	Independent
1972	37%	36%	45%	17%
1976	43%	39%	55%	28%
1980	35%	23%	56%	21%
1984	44%	45%	46%	36%
1988	47%	37%	63%	33%
1992	57%	59%	62%	28%
1996	38%	25%	59%	18%
2000	46%	53%	41%	27%

Results: *"Strategic" Citizens*

Year	All	Democrats	Republicans	Independent
1972	18%	21%	17%	17%
1976	15%	15%	14%	17%
1980	15%	17%	14%	12%
1984	15%	13%	17%	12%
1988	11%	8%	12%	17%
1992	10%	9%	12%	11%
1996	10%	12%	7%	8%
2000	7%	5%	10%	11%

Results: "Strategic" Voting in both Elections

Year	All	Democrats	Republicans	Independent
1972	23%	26%	17%	35%
1976	21%	21%	18%	33%
1980	22%	25%	18%	32%
1984	21%	18%	24%	27%
1988	15%	12%	16%	23%
1992	16%	13%	18%	26%
1996	13%	17%	8%	18%
2000	9%	6%	14%	11%

Results: "Strategic" Voting by Election

Year	All		Democrats		Republicans		Independent	
	P	H	P	H	P	H	P	H
1972	13%	11%	24%	6%	3%	14%	8%	29%
1976	8%	13%	9%	12%	6%	12%	15%	22%
1980	7%	16%	11%	15%	2%	15%	6%	25%
1984	5%	17%	8%	11%	1%	22%	3%	25%
1988	6%	10%	5%	7%	3%	13%	33%	2%
1992	4%	12%	3%	10%	5%	13%	14%	15%
1996	4%	10%	1%	16%	7%	1%	0%	22%
2000	4%	8%	2%	4%	2%	12%	21%	8%

Results: Decomposing Split-Ticket Voting

Year	All	% Sincere
1972	26%	11
1976	25%	17
1980	27%	16
1984	24%	10
1988	21%	26
1992	21%	25
1996	17%	26
2000	15%	42

Results: Decomposing Selective Abstention

Year	All	% Sincere
1972	7%	67
1976	6%	83
1980	4%	91
1984	5%	88
1988	5%	81
1992	7%	94
1996	5%	92
2000	9%	85

Densities of Split-Ticket Voters 1984

Legend: dem, rep, ind, dem-split, rep-split, ind-split
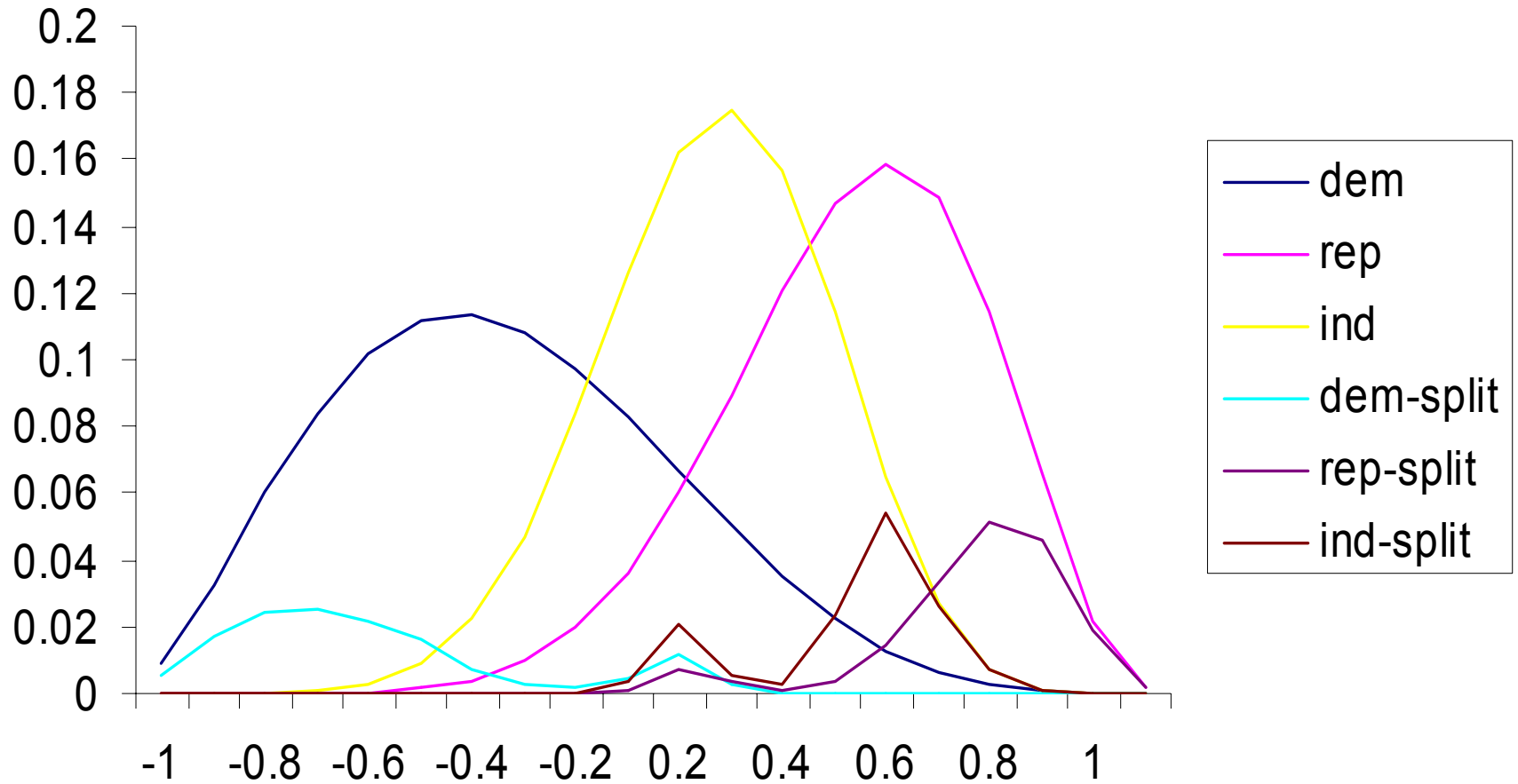
Density of Split-Ticket Voters 1984
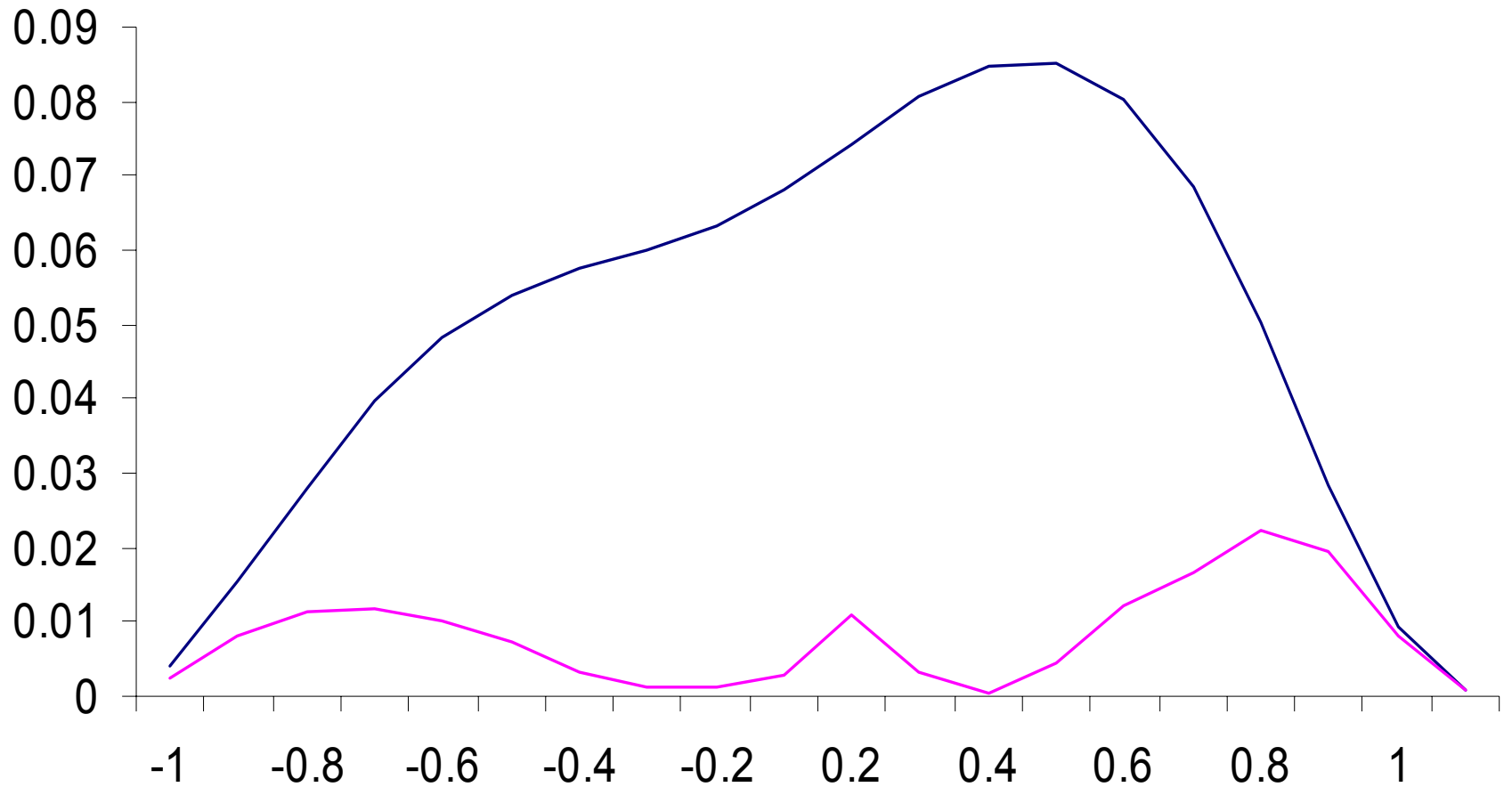
Densities of Abstainers 1984

Legend:
- dem
- rep
- ind
- dem-abst
- rep-abst
- ind-abst
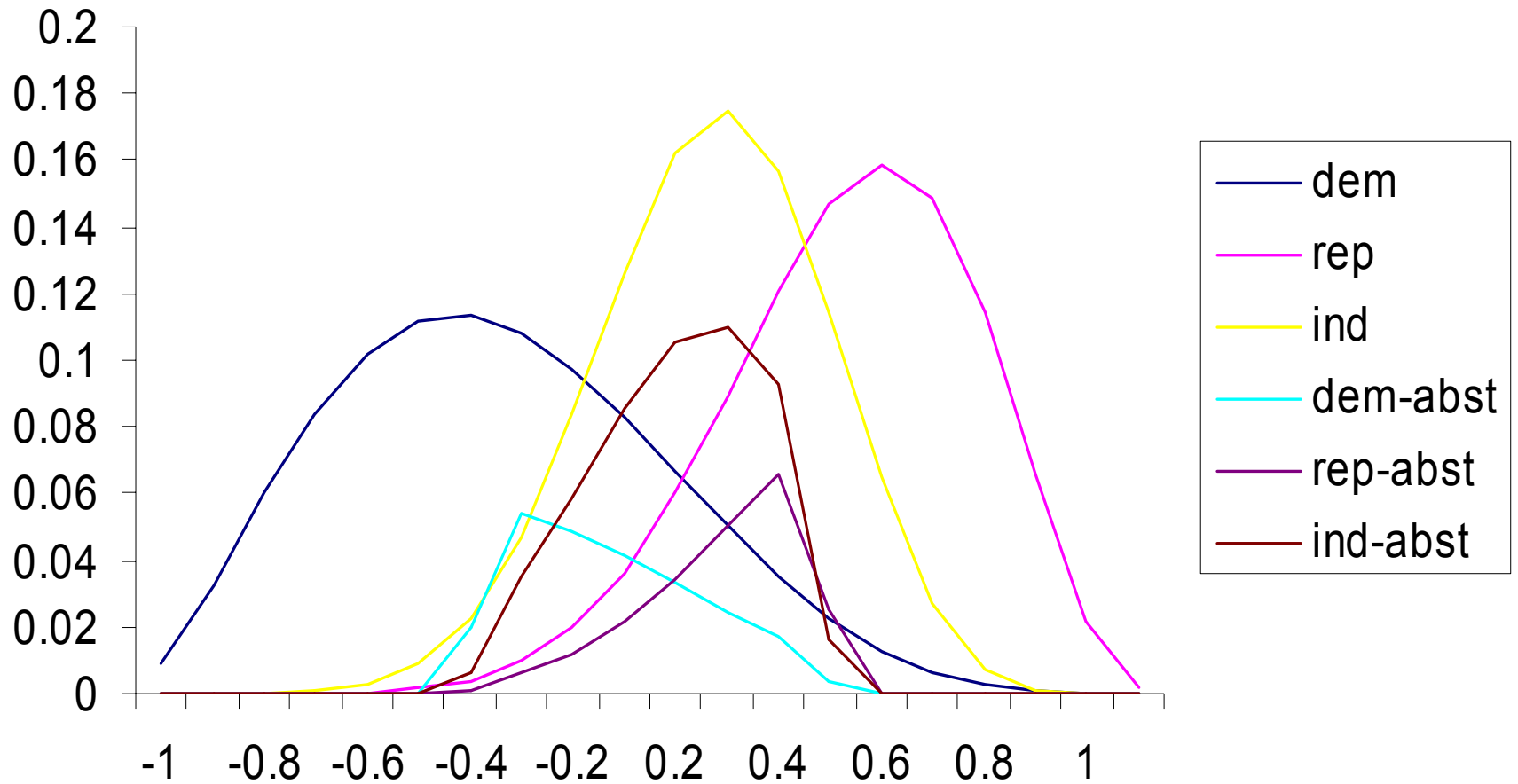
Density of Abstainers 1984
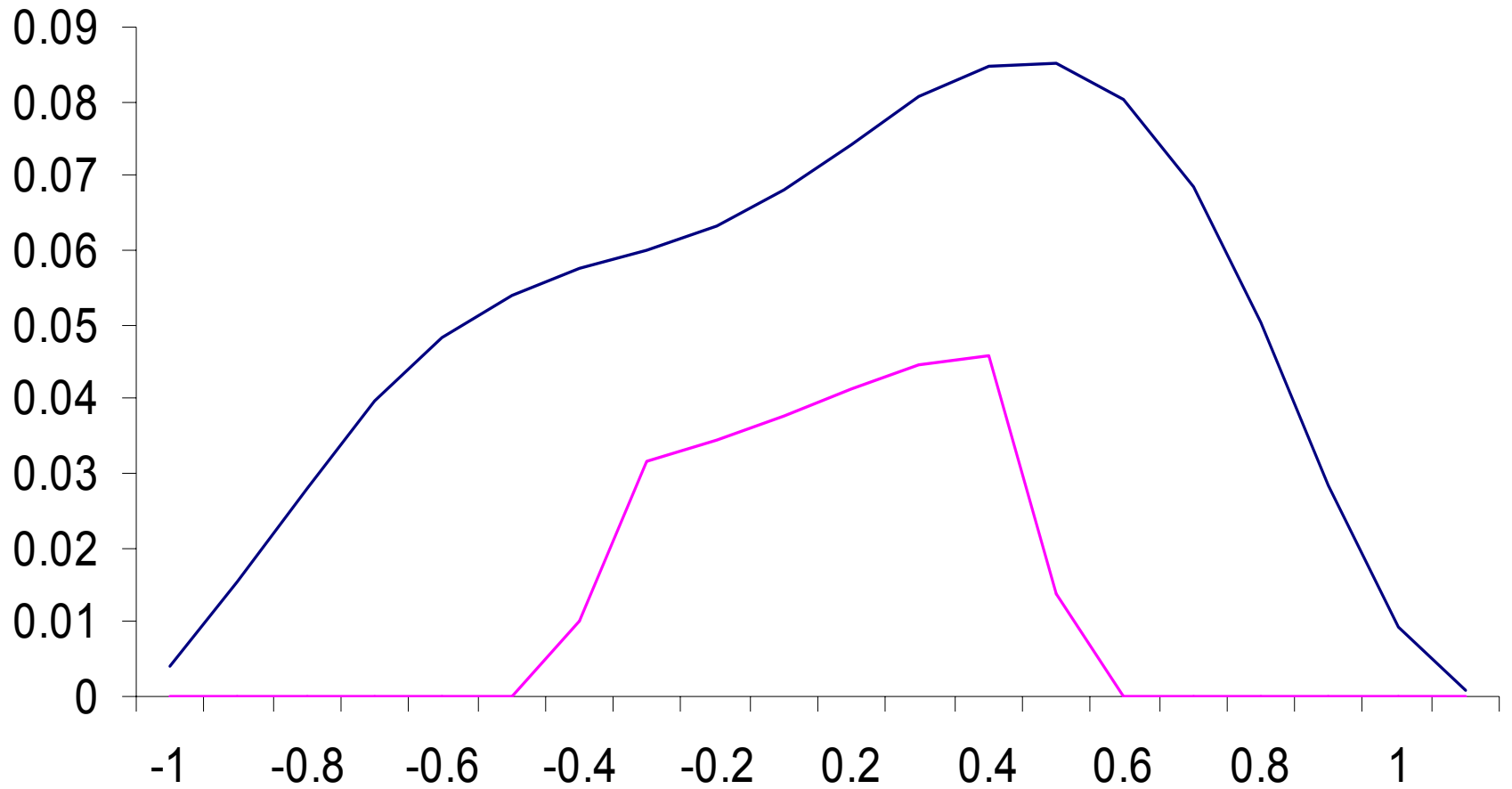
Densities of Informed Citizens 1984

Legend: dem, rep, ind, dem-info, rep-info, ind-info
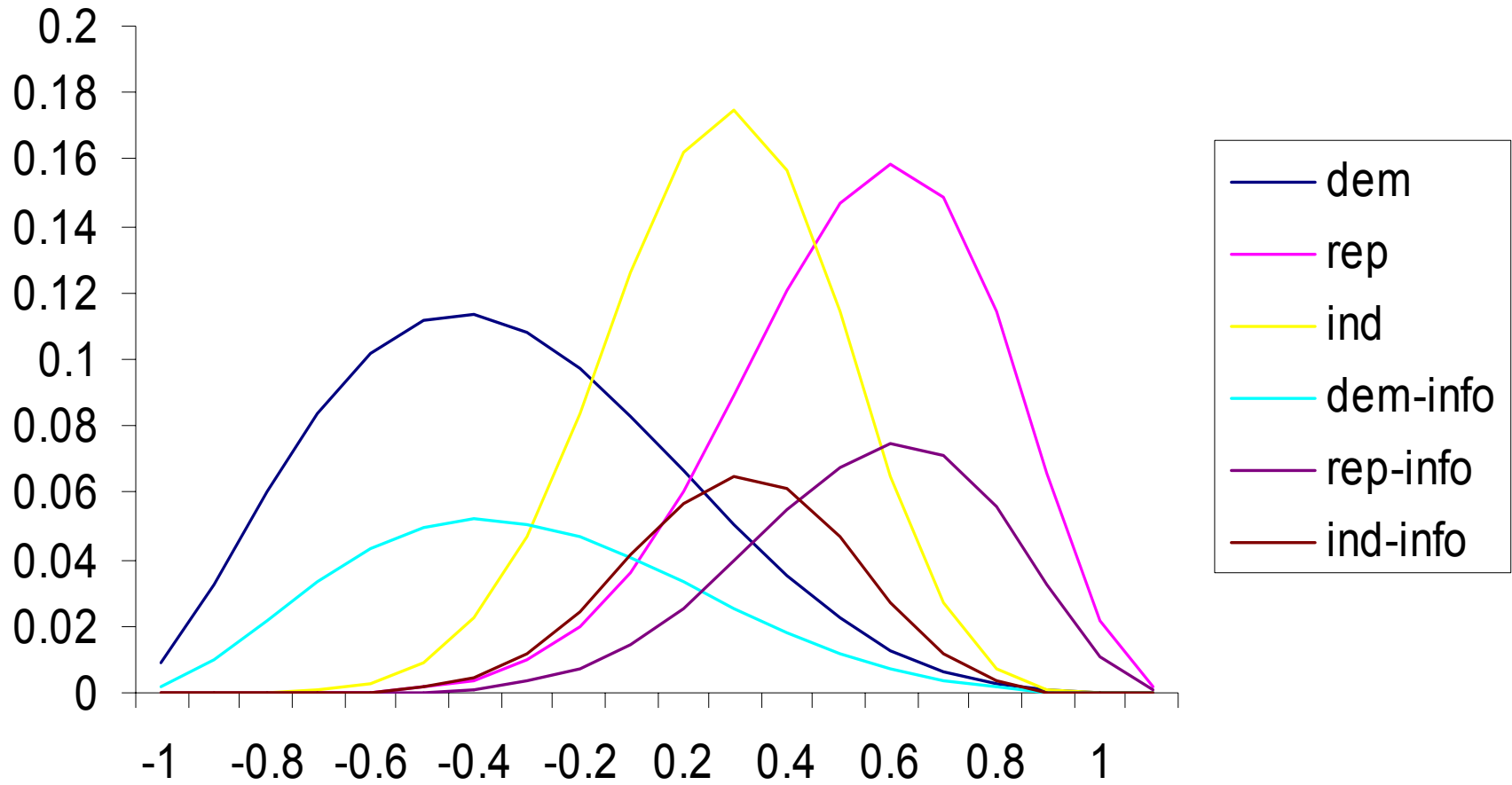
Density of Informed Citizens 1984
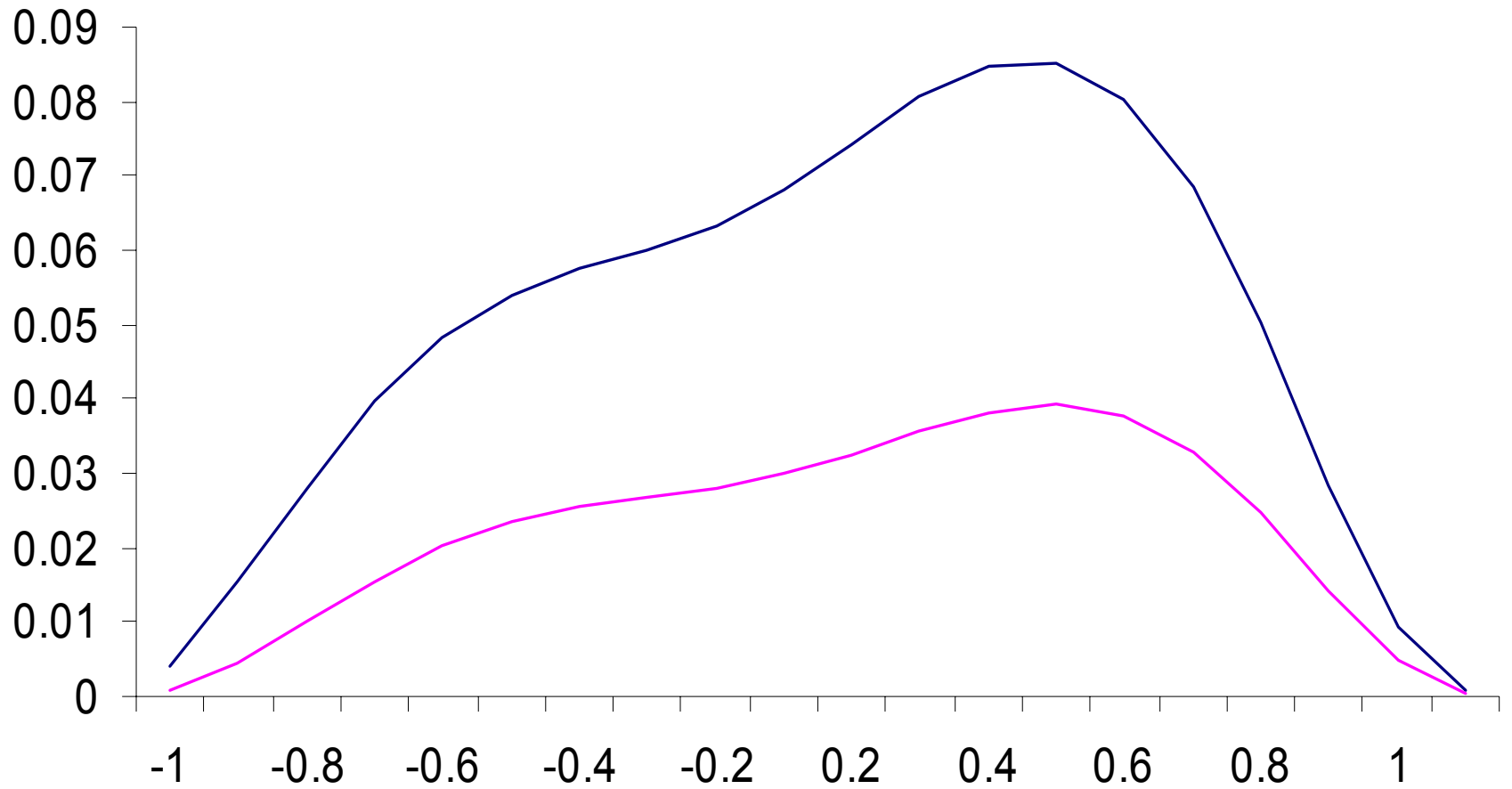
Densities of Strategic Citizens 1984

Legend:
- dem
- rep
- ind
- dem-strat
- rep-start
- ind-strat
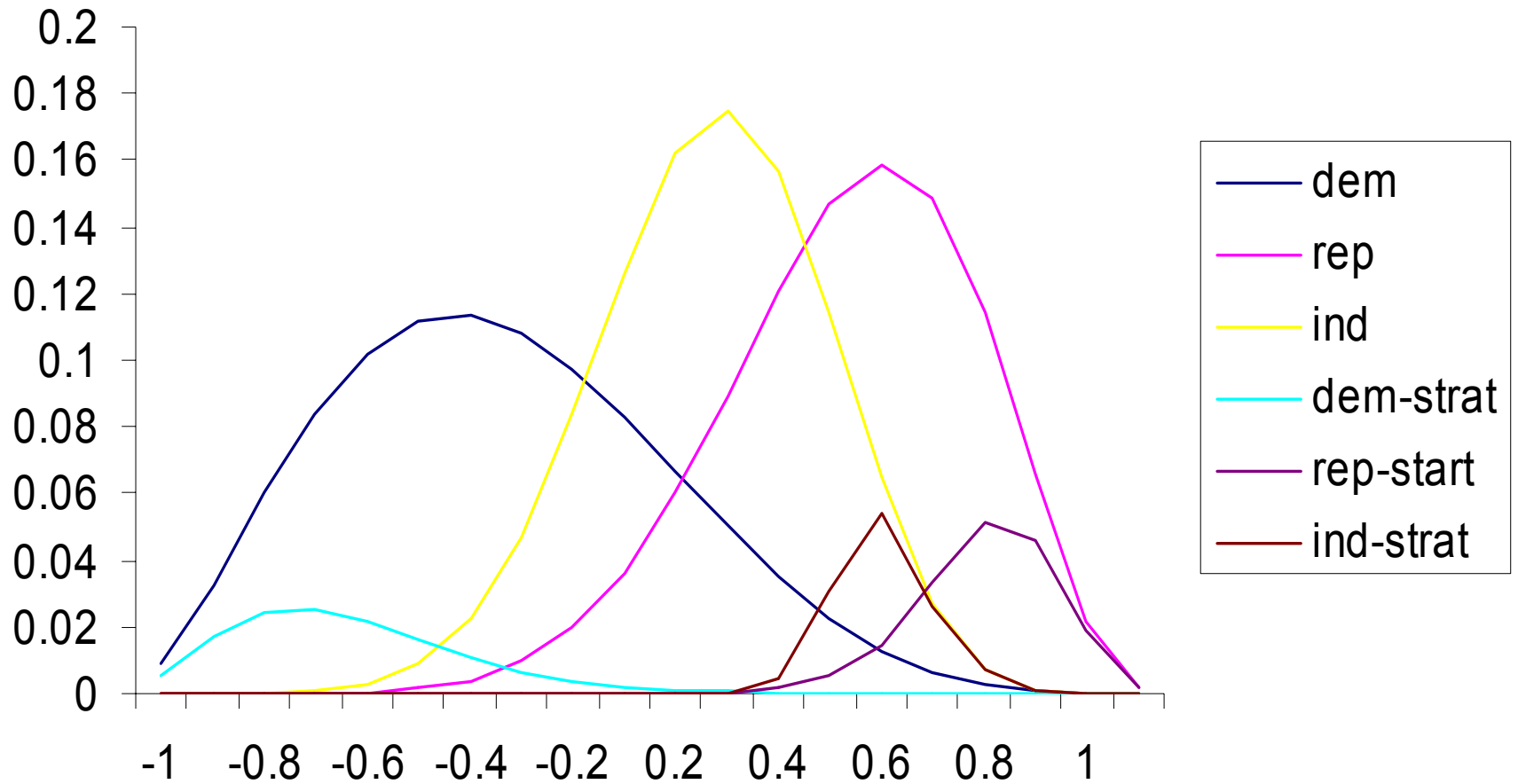
Density of Strategic Citizens 1984
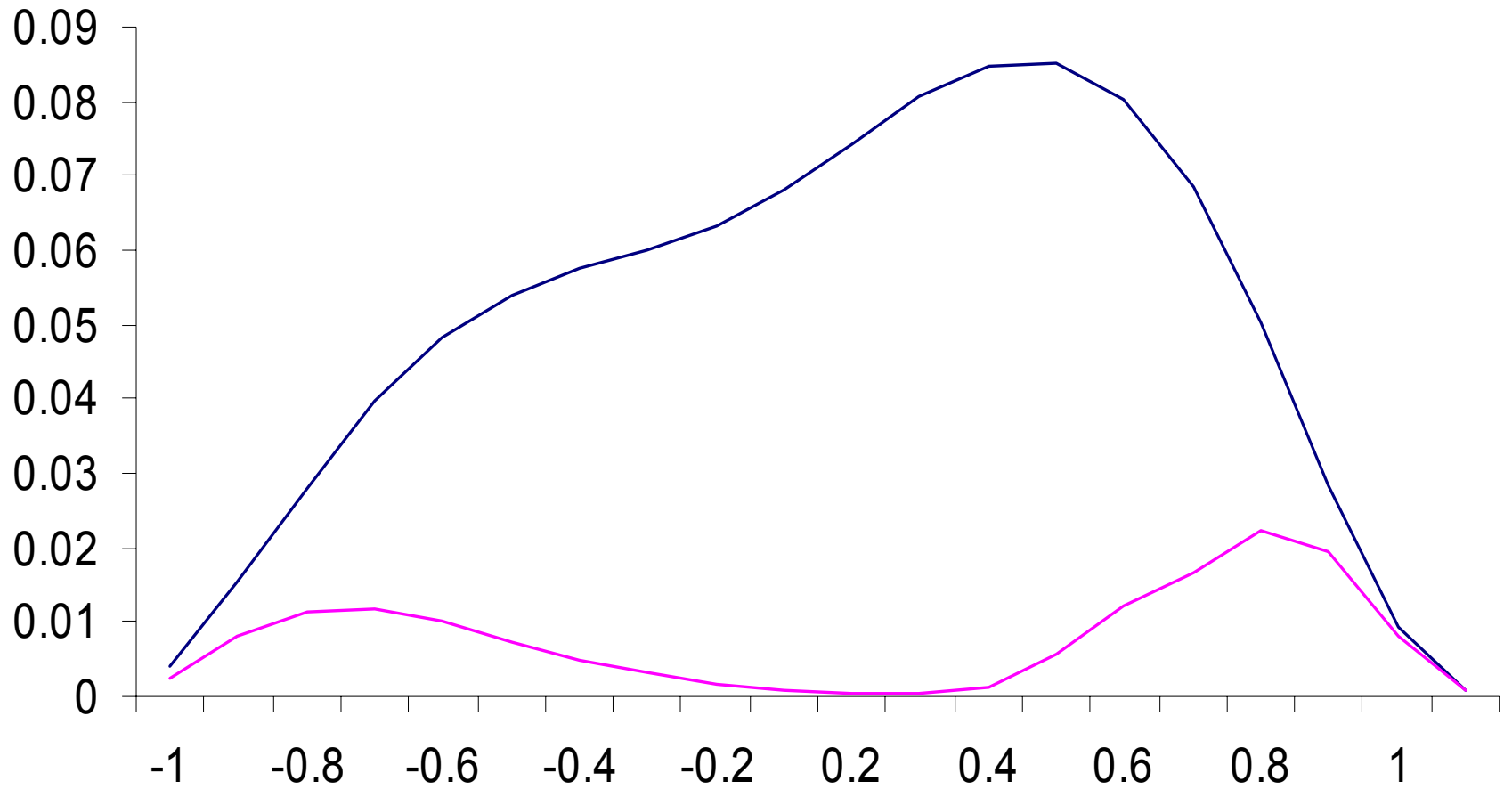
Experiments

◆ Everybody sincere

◆ Everybody informed

◆ Everybody votes

➢ Assess impact on electoral outcomes

Experiments: Summary of Results

➢ Increase "straight-ticket" voting

➢ Increase "partisan" voting

➢ Strength of effects differ by party id and by year

Experiments: Effect of Strategic Voting on Elections

Year	P	H	P	H
1972	McGovern v **Nixon**	**D** v R	McGovern v **Nixon**	D v **R**
1976	**Carter** v Ford	**D** v R	**Carter** v Ford	**D** v R
1980	Carter v **Reagan**	**D** v R	Carter v **Reagan**	**D** v R
1984	Mondale v **Reagan**	**D** v R	Mondale v **Reagan**	D v **R**
1988	Dukakis v **Bush Sr.**	**D** v R	Dukakis v **Bush Sr.**	**D** v R
1992	**Clinton** v Bush Sr.	**D** v R	**Clinton** v Bush Sr.	**D** v R
1996	**Clinton** v Dole	D v **R**	**Clinton** v Dole	**D** v R
2000	Gore v **Bush Jr.**	D v **R**	**Gore** v Bush Jr.	D v **R**

Experiments: Effect of Information on Elections

Year	P	H	P	H
1972	McGovern v **Nixon**	**D** v R	McGovern v **Nixon**	**D** v R
1976	**Carter** v Ford	**D** v R	Carter v **Ford**	**D** v R
1980	Carter v **Reagan**	**D** v R	Carter v **Reagan**	**D** v R
1984	Mondale v **Reagan**	**D** v R	Mondale v **Reagan**	**D** v R
1988	Dukakis v **Bush Sr.**	**D** v R	Dukakis v **Bush Sr.**	**D** v R
1992	**Clinton** v Bush Sr.	**D** v R	**Clinton** v Bush Sr.	**D** v R
1996	**Clinton** v Dole	D v **R**	**Clinton** v Dole	**D** v R
2000	Gore v **Bush Jr.**	D v **R**	**Gore** v Bush Jr.	**D** v R

Experiments: Effect of Abstention on Elections

Year	P	H	P	H
1972	McGovern v **Nixon**	**D** v R	McGovern v **Nixon**	**D** v R
1976	**Carter** v Ford	**D** v R	**Carter** v Ford	**D** v R
1980	Carter v **Reagan**	**D** v R	Carter v **Reagan**	**D** v R
1984	Mondale v **Reagan**	**D** v R	Mondale v **Reagan**	D v **R**
1988	Dukakis v **Bush Sr.**	**D** v R	Dukakis v **Bush Sr.**	**D** v R
1992	**Clinton** v Bush Sr.	**D** v R	**Clinton** v Bush Sr.	**D** v R
1996	**Clinton** v Dole	D v **R**	**Clinton** v Dole	**D** v R
2000	Gore v **Bush Jr.**	D v **R**	**Gore** v Bush Jr.	D v **R**