How much difference does strategic voting make?

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KILL BREXIT!
VOTE
TACTICALLY


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TACTICALLY


THOSE WHO SUPPORT
JILL STEIN ARE TOO
YOUNG TO REMEMBER
WHAT HAPPENED TO
AL GORE IN 2000.
LIFE WOULD BE DIFFERENT TODAY HAD PEOPLE
NOT WASTED THEIR VOTE ON RALPH NADER.
MK
CONSERVATIVES ARE DESTROYING OUR FUTURE | CADOF.ORG

Strategic voting

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What specifically do we want to know about it? Possible questions:

- Are *any* voters strategic?
- What proportion of voters are strategic?
- How much do voters weigh instrumental vs. expressive considerations?
- **How much do strategic factors affect vote choices?**

What we want to know

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Given k candidates and a single-ballot system,

- let $x_i \in \{1, 2, \ldots, k\}$ denote voter i's most preferred alternative,
- let $y_i \in \{1, 2, \ldots, k\}$ denote voter i's vote choice,

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Causal interpretation also possible!

Problems with estimating the misaligned voting rate

Sincere preference (x_i) typically not observed in surveys.

Researchers infer/impute/guess $\hat{x}_i$ from e.g. party ratings, party ID, leader ratings, best party on most important issue, proximity scores, etc.

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Estimated MVR may be biased, i.e.

$$E\left[\frac{1}{n}\sum_{i=1}^{n}\mathbb{1}\{y_i \neq \hat{x}_i\}\right] \neq E_i\left[\mathbb{1}\{y_i \neq x_i\}\right]$$

Problems with MVR? Evidence from Canada

Typically researchers infer the sincere preference with a question like,

`How do you feel about the federal political parties below [e.g. Liberal Party, Conservative Party ...]? Set the slider to a number from 0 to 100, where 0 means you really dislike the party and 100 means you really like the party.`

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In the Canadian Election Study in 2019 and 2021, we also asked

- (2019) `Which candidate would you most like to win in your riding?`
- (2021a) `Which candidate do you want to win the seat in your riding?`
- (2021b) `Imagine you were the only voter in the election. Which candidate would you want to win in your riding?`

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(Someone should ask here if this is really the sincere preference.)

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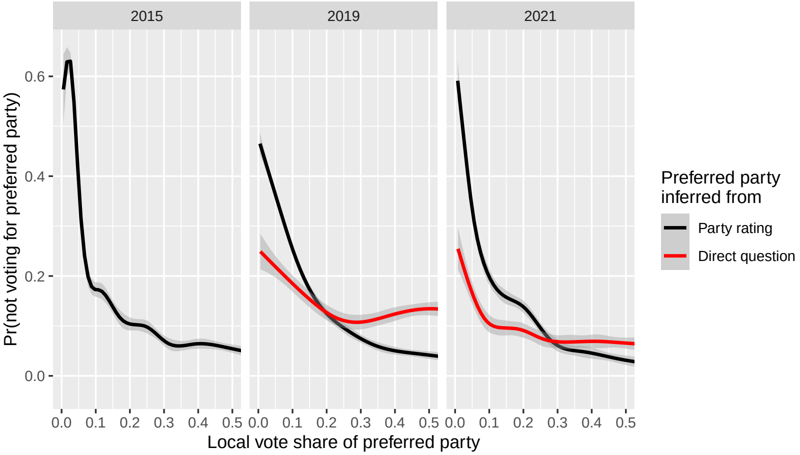
$$
\begin{aligned}
\overbrace{\Pr(y_i \neq \hat{x}_i)}^{\text{Estimated MVR}=.11} &= \Pr(y_i \neq \hat{x}_i, y_i \neq x_i) + \Pr(y_i \neq \hat{x}_i, y_i = x_i) \\
&= \underbrace{\Pr(y_i \neq x_i)}_{\text{True MVR}=.10}\underbrace{\Pr(y_i \neq \hat{x}_i \mid y_i \neq x_i)}_{\text{True positive rate}=.38} + \underbrace{\Pr(y_i = x_i)}_{1-\text{True MRV}=.90}\underbrace{\Pr(y_i \neq \hat{x}_i \mid y_i = x_i)}_{\text{False positive rate}=.08}
\end{aligned}
$$

Further problem with estimated misaligned voting?

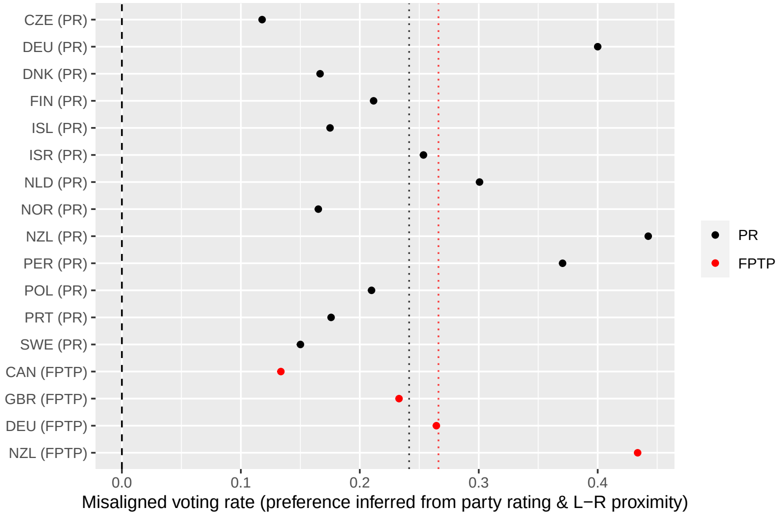


Further reason for doubt: a surprising result

[P]atterns of strategic voting across FPTP and PR bear striking similarities. In every election, smaller parties tend to lose votes to major parties. Because there tend to be more small parties in PR systems, tactical voting is actually more common [i.e. misaligned voting rate is higher] under PR than under FPTP.

— Abramson, Aldrich, Blais, Diamond, Diskin, Indridason, Lee & Levine (2010)

Assessing the surprising result (CSES, BES, CES)



A reinterpretation

Inferred sincere preference $\hat{x}_i$ is often incorrect, especially

- when there are many alternatives and thus more ways for the researcher to be wrong (and weaker prefs?)
- when $\hat{x}_i$ is (locally) electorally weak (omitted dimensions of preference, idiosyncratic preferences, mean reversion)

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Researcher ignorance and strategic voting observationally equivalent.

So what can we do about it?

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An alternative approach:

- Fit a model of vote choice that incorporates strategic factors
- Compare **predicted vote probabilities** when
  - strategic factors are set to observed values (≈ vote choice)
  - strategic factors are set to neutral values (≈ sincere preference)

Discrepancy between those two probability vectors measures the impact of strategic factors on vote choice.

The same thing but with more notation

Let $\hat{p}_{ij}(\mathbf{z}_i, \mathbf{d}_i)$ be the predicted probability of voter i choosing candidate j given preferences $\mathbf{z}_i$ and strategic circumstances $\mathbf{d}_i$.

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Suppose we can set strategic circumstances to two values:

- $\mathbf{d}_i^{\text{obs}}$: the observed circumstances
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Then we measure the discrepancy between

$$\hat{\mathbf{p}}_i(\mathbf{z}_i, \mathbf{d}_i^{\text{obs}}) \equiv \left(\hat{p}_{i1}(\mathbf{z}_i, \mathbf{d}_i^{\text{obs}}), \hat{p}_{i2}(\mathbf{z}_i, \mathbf{d}_i^{\text{obs}}) \ldots, \hat{p}_{ik}(\mathbf{z}_i, \mathbf{d}_i^{\text{obs}})\right)$$

and

$$\hat{\mathbf{p}}_i(\mathbf{z}_i, \mathbf{d}_i^{\text{neut}}) \equiv \left(\hat{p}_{i1}(\mathbf{z}_i, \mathbf{d}_i^{\text{neut}}), \hat{p}_{i2}(\mathbf{z}_i, \mathbf{d}_i^{\text{neut}}) \ldots, \hat{p}_{ik}(\mathbf{z}_i, \mathbf{d}_i^{\text{neut}})\right)$$

Measuring and interpreting the discrepancy

Proposed individual-level discrepancy metric:

$$\mathcal{D}\Big(\hat{\mathbf{p}}_i(\mathbf{z}_i, \mathbf{d}_i^{\text{obs}}), \hat{\mathbf{p}}_i(\mathbf{z}_i, \mathbf{d}_i^{\text{neut}})\Big) = \frac{1}{2}\sum_j \left|\hat{p}_{ij}(\mathbf{z}_i, \mathbf{d}_i^{\text{obs}}) - \hat{p}_{ij}(\mathbf{z}_i, \mathbf{d}_i^{\text{neut}})\right|$$

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Average over the sample.

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Note (and cf misaligned voting rate):

- if model perfectly informative $\rightarrow$ misaligned voting rate
- if model perfectly uninformative $\rightarrow$ 0
- if model fails to capture impact of strategic circumstances $\rightarrow$ 0
- invariant to clone parties & irrelevant parties

A predictive model

I use a multinomial logit model where i's utility from voting for j is

$$u_{ij} = \beta_1 \text{PartyRating}_{ij} + \ldots + f\,(\text{vote share}_j) + \epsilon_{ij}$$

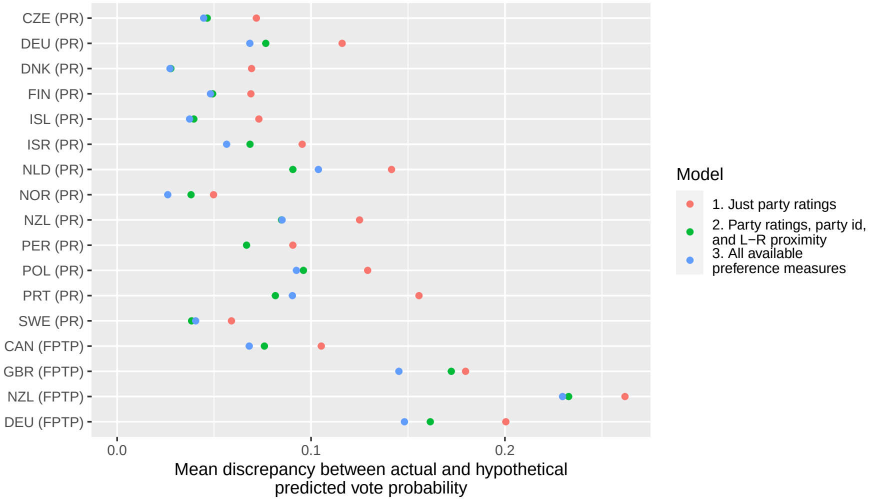
where $f(\cdot)$ is a cubic spline and included preference measures are

1. party rating only,
2. party rating, proximity rating, and party ID,
3. all available preference measures.

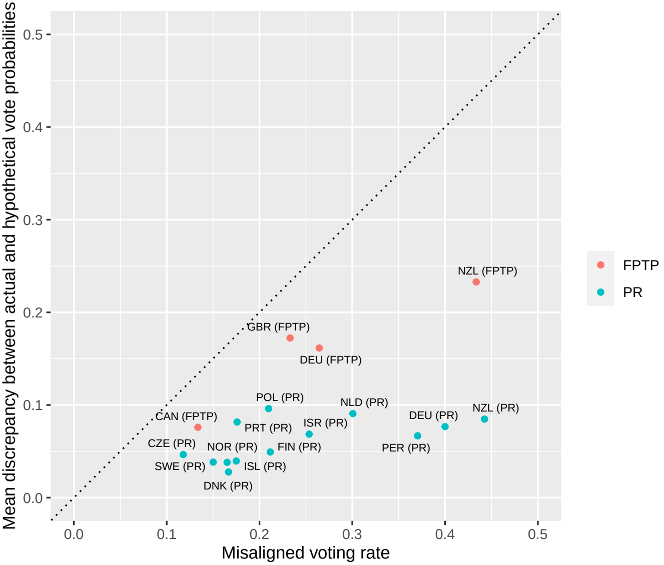
$$\hat{p}_{ij}(\cdot) = \frac{e^{u_{ij}}}{\sum_{j=1}^{k} e^{u_{ij}}}$$

.

Results


CZE (PR)
DEU (PR)
DNK (PR)
FIN (PR)
ISL (PR)
ISR (PR)
NLD (PR)
NOR (PR)
NZL (PR)
PER (PR)
POL (PR)
PRT (PR)
SWE (PR)
CAN (FPTP)
GBR (FPTP)
NZL (FPTP)
DEU (FPTP)
0.0
0.1
0.2
Mean discrepancy between actual and hypothetical predicted vote probability
Model
1. Just party ratings
2. Party ratings, party id, and L−R proximity
3. All available preference measures

Results (2)



Mean discrepancy between actual and hypothetical vote probabilities
0.0
0.1
0.2
0.3
0.4
0.5
Misaligned voting rate
NZL (FPTP)
GBR (FPTP)
DEU (FPTP)
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FPTP
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Takeaways

- Measuring departures from sincere voting is important
- But conventional approach (misaligned voting rate) conflates researcher ignorance with strategic voting
- My approach addresses some of those problems, gives more reasonable answer in FPTP vs PR comparison

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Next steps:

- more cases
- more cleaning
- model selection
- methods for causal inference with discrepancy estimands, categorical outcomes