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Ballot order effects in direct democracy elections

John G. Matsusaka[1]

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Abstract Many political practitioners believe that voters are more likely to approve propositions listed at the top than the bottom of the ballot, potentially distorting democratic decision making, and this belief influences election laws across the United States. Numerous studies have investigated ballot order effects in candidate elections, but there is little evidence for direct democracy elections, and identification of causal effects is challenging. This paper offers two strategies for identifying the effect of ballot order in proposition elections, using data from California during 1958–2014 and Texas during 1986–2015. The evidence suggests that propositions are not advantaged by being listed at the top compared to the bottom of the ballot. Approval rates are lower with more propositions on the ballot.

Keywords Direct democracy · Initiative · Referendum · Ballot proposition · Ballot order · Causality

1 Introduction

In the summer of 2012, allies of California Governor Jerry Brown persuaded the legislature to amend the state's elections code so that the governor's tax-raising initiative would be listed first among 11 propositions on the ballot. Although the change was officially motivated by a desire to ensure that voters were able to "carefully weigh the consequences of important measures" on the ballot, it was widely believed that the real purpose was to increase the initiative's chance of passing.[1] Opponents of the initiative argued that the

[1] The findings and declarations in the new law (AB 1499) stated: "bond measures and constitutional amendments should have priority on the ballot because of the profound and lasting impact these measures can have on our state…. In recognition of their significance, bond measures and constitutional amendments

✉ John G. Matsusaka
matsusak@usc.edu

[1] Marshall School of Business, Gould School of Law, Department of Political Science, University of Southern California, Los Angeles, USA

governor's allies had cynically manipulated the elections code to secure the most favorable position for the governor's proposal. The implicit assumption in the debate was that ballot position matters for direct democracy elections, and specifically, that the first position confers an advantage.

The purpose of this paper is to assess the premise that ballot position influences the outcomes of direct democracy elections. The idea that the top position is best is not new: writing almost a half century ago, Mueller (1969, p. 1208) observed:

> The state legislature devoutly believes in the existence of a body of citizens who start out voting affirmatively on bond issues but turn to negativism as they move down the ballot viewing with mounting horror the extent of the proposed expenditures. Part of the reason for placing state bond issues at the top of the ballot is to catch the affirmative votes of these citizens before they turn sour.

Theoretically, the top position may be advantageous if voters become fatigued moving down the ballot, and if decision fatigue causes a status quo bias that leads to rejection of new proposals.[2] Empirically, there is a healthy literature on order effects in candidate elections, but little evidence on order effects in proposition elections. Given the apparent existence of order effects in candidate elections, the widespread belief of order effects among political practitioners, and the role of this belief in framing election law, it seems worthwhile to estimate the extent to which ballot structure actually matters for direct democracy elections.

Our current knowledge of order effects in direct democracy elections is limited by a dearth of evidence that is convincingly causal in nature. The main contribution of this paper is to offer evidence that addresses common challenges to causal inference. First, since 1986 Texas has assigned ballot positions for propositions by lottery, producing randomized experimental data. The mean observed approval rates can be compared across ballot positions to provide direct estimates of ballot order effects. Second, in California, the Field Poll routinely surveys likely voters about their voting intentions on select ballot propositions in a way that is not closely linked to the order in which the propositions will appear in the ballot. These survey responses capture voter preferences about a proposition independent of the proposition's position on the ballot. Ballot position effects can then be inferred by comparing each proposition's approval rate when "treated" with its actual ballot position to its expressed pre-election Field Poll approval rate (the "control").

The main finding is a consistent absence of evidence that the top (or any) position on the ballot is particularly favorable. Election data for the 240 Texas propositions during 1986–2015 show a correlation of −0.01 between ballot position and approval rates, and parametric estimates controlling for other factors also fail to reveal a meaningful connection. Similarly, an examination of the 242 California propositions during 1958–2014 for which Field Poll data are available fails to reveal a robust effect of ballot position on approval rates after controlling for pre-election opinion.

The evidence from Texas and California points in the same direction and is complementary given the dissimilarity in the electoral contexts of the two states. Texas proposition elections typically take place in odd-numbered years in which no major candidate races are on the ballot and feature somewhat technical amendments to the constitution proposed by the legislature,

Footnote 1 continued
should be placed at the top of the ballot to ensure that the voters can carefully weigh the consequences of these important measures."

[2] For discussion and variants on this idea, see Miller and Krosnick (1998), Bowler and Donovan (1998), Levav et al. (2010), and Augenblick and Nicholson (2016).

while California elections often feature controversial voter initiatives that attract significant public attention and appear on the same ballot as high-profile candidate elections. One could argue that ballot order effects are more likely to occur in low turnout, low information elections (Texas) or in high turnout, high information elections (California); the absence of an effect in both cases using different methods suggests the finding may be fairly general.

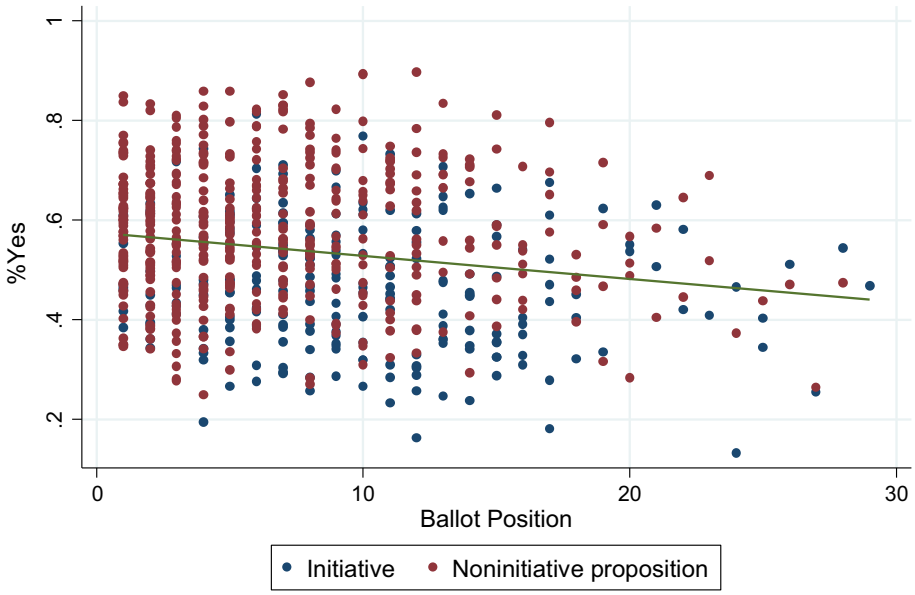
I also explore the related issue of ballot length. Practitioners and scholars argue that the information requirements associated with long ballots can overwhelm voters, causing the status quo bias to kick in and leading to more "no" votes. It is not difficult to find examples of elections that voters must have found challenging, such as the 1914 California general election in which voters had to decide 48 ballot propositions. The danger of overloading voters has led some states to establish limits on the number of propositions that can appear on a ballot. For example, Arkansas and Illinois limit the number of legislative constitutional amendments to three, and Mississippi has a cap of five initiatives per ballot. Previous research suggests that voters are more likely to reject a proposition when it appears on a ballot with many other propositions (Bowler and Donovan 1998) and, more generally, that the size of the choice set affects decision making (Selb 2008; Iyengar and Kamenica 2010). This study's estimates on ballot length are less compelling in terms of causal inference than the order estimates, but reveal a consistently lower approval rate for propositions on long compared to short ballots.

The initial motivation for this paper was to evaluate the premise underlying a live policy issue. However, the evidence also speaks to broader issues in public choice. In terms of voter behavior, some evidence suggests that decision making is cognitively costly (e.g., Baumeister et al. 1998; Danziger et al. 2011); if voters deplete their mental resources when faced with numerous decisions, their choices may not be rational. The evidence reported here suggests that decision fatigue does not cause order effects in ballot proposition elections, but it may matter when ballots become too long. At an even broader level, direct democracy continues to play a leading role in public policy making in the United States. Ballot propositions have been a central arena for contesting emerging social issues such as same-sex marriage and marijuana legalization, and for making expensive fiscal decisions; for example, voters have decided whether to authorize over $195 billion worth of bond propositions since 2000.[3] Direct democracy is motivated by the belief that laws passed by the voters are more likely to reflect their preferences than laws passed by legislatures, so it would be of concern if non-preference factors such as ballot design turned out to have a big effect on outcomes. The evidence in this paper suggests that, on average, ballot position is unlikely to have a large effect on election outcomes, somewhat allaying that concern.

2 Institutional context: California

As a simple correlation, propositions listed at the top of the ballot do better than propositions listed at the bottom of the ballot. Figure 1 plots the approval rate $\left(=\frac{\text{yes votes}}{\text{yes votes}+\text{no votes}}\right)$ on each California ballot proposition during the 1958–2014 period against the proposition's ballot position, where #1 indicates that the measure was listed first. The solid line, from a linear regression, shows that there is indeed a negative relation between votes in favor and ballot position; approval falls approximately 0.5 % with each additional down-ballot position.

[3] Author's calculation.



Note. The figure plots all 678 propositions that appeared on the California ballot during 1958-2014. Data source: Initiative and Referendum Institute.

Fig. 1 %Yes by ballot position, California propositions 1958–2014

While Fig. 1 shows that historical approval rates decline moving down the ballot, it does not follow that ballot position *causes* the declining approval rates. It could be that more popular measures are more likely to be placed at the top of the ballot. The recent California episode illustrates how this could happen. Before it was modified in June 2012, the elections law read[4]:

> The order in which all state measures that are to be submitted to the voters shall appear upon the ballot is as follows:
>
> (a) Bond measures in the order in which they qualify.
> (b) Constitutional amendments in the order in which they qualify.
> (c) Legislative measures in the order in which they are approved by the Legislature.
> (d) Initiative measures in the order in which they qualify.
> (e) Referendum measures, in the order in which they qualify.

To define terms: in California, (a) a bond measure is a proposal to authorize the issuance of bonds; (b) a constitutional amendment is a proposal to amend the state constitution; (c) "other legislative measures" are proposals to modify previously approved initiative statutes; (d) an initiative is a new law—bond measure, constitutional amendment, or statute—that is proposed by citizens and qualified for the ballot by petition; and (e) a referendum is a proposal, qualified by petition, to repeal a law recently passed by the

[4] California Elections Code 13115, enacted by Stats. 1994, Ch. 920, Sect. 2, SB 1547.

legislature.[5] As can be seen, the original elections code placed legislative proposals (bond issues, constitutional amendments, statutes) first, followed by citizen proposals (initiatives and referendums). Within each category, propositions were ordered by the date at which they qualified for the ballot.[6] After June 2012, the elections code became[7]:

> The order in which all state measures that are to be submitted to the voters shall appear upon the ballot is as follows:
>
> (a) Bond measures, *including those proposed by initiative*, in the order in which they qualify.
> (b) Constitutional amendments, *including those proposed by initiative*, in the order in which they qualify.
> (c) Other Legislative measures, *other than those described in subdivision* (*a*) *or* (*b*), in the order in which they are approved by the Legislature.
> (d) Initiative measures, *other than those described in subdivision* (*a*) *or* (*b*), in the order in which they qualify.
> (e) Referendum measures, in the order in which they qualify.

The new code blurs the distinction between legislative and citizen-initiated proposals. Now bond measures are listed first, regardless of whether they originate from the legislature or citizen petition, followed by constitutional amendments, regardless of whether they originate from the legislature or petition. For non-bond statutory proposals, the ordering stays the same: legislative proposals followed by citizen initiatives. Referendums remain at the bottom of the ballot.[8]

The California elections code introduces several potential selection effects. First, prior to 2012, it placed proposals from the legislature ahead of citizen proposals. Historically, legislative measures have a much higher rate of passage than citizen measures; during the period 1958–2014, 72 % of legislative proposals were approved compared to 37 % of citizen-initiated proposals. This is probably because legislative proposals must garner majority support in both chambers—supermajority support in the case of constitutional amendments—so they are likely to have broader appeal than initiatives and referendums, which require only signatures of a small percentage of the electorate.[9] Second, bond

[5] Ballot proposition terminology varies by state and country. In the California elections code, a "referendum" is a proposal to repeal a law passed by the legislature; in other jurisdictions it refers more generally to any popular vote on a law, whether proposed by citizens, the legislature, or other means. See Lupia and Matsusaka (2004) and Matsusaka (2005) for more details.

[6] The pre-2012 code is actually somewhat ambiguous. One could read the law to mean that a bond measure proposed by initiative is to be included in subdivision (a) and a constitutional amendment proposed by initiative is to be included in subdivision (b). Under such an interpretation, subdivision (d) would apply only to non-bond, non-amendment initiatives. The text describes how the law was implemented in practice.

[7] An underline is new text; a strikethrough is deleted text. The code was modified by Stats. 2012, Ch. 30, Sect. 2.

[8] Governor Brown's Proposition 30 was an initiative to amend the constitution. As an initiative, it was originally included in subdivision (d), and because it qualified later in the election cycle than other initiatives, it was slated to appear near the bottom of the ballot. By giving precedence to constitutional amendments, whatever the source, the revised code moved the governor's proposal to the top of the ballot; there were no bond propositions in that election and Proposition 30 was the only constitutional amendment.

[9] To reach the ballot, a bond proposal requires a majority vote in both the Assembly and Senate and signature of the governor; a constitutional amendment requires a two-thirds vote in both chambers but does not require the governor's signature; and a statute that amends an initiative requires a majority vote in both chambers and signature of the governor. The initiative signature requirement, expressed as a percentage of

proposals must pass a different screening process than constitutional amendments (see footnote 9), which could cause voters to view them differently, and voters may be more hesitant to amend the constitution than to approve a bond measure. During the 1958–2014 period, voters approved 78 % of legislative bond measures, 69 % of legislative constitutional amendments, and 76 % of legislative statutes. Third, measures that qualify at an earlier date appear toward the top of the ballot. Proposals that are inherently more popular may qualify earlier because it is easier to achieve a legislative consensus on them and easier to collect the requisite signatures.

California's practice of arranging the ballot by grouping issues and placing them in a predetermined order is common. For example, most states give priority to issues according to the times at which they qualify for the ballot. Arkansas, Arizona, Colorado, and North Dakota place constitutional amendments before statutes. Maine places bond measures at the bottom of the ballot. New Mexico and Rhode Island place constitutional amendments at the top and bond measures at the bottom. Washington places advisory measures at the bottom of the ballot. Because in most states we expect to see different approval rates for propositions at the top compared to the bottom of the ballot for reasons having nothing to do with ballot order, we cannot infer that that a correlation between approval and ballot position is causal.[10]

3 Theoretical considerations

The most common explanation for ballot order effects in candidate elections is drawn from the psychology literature: satisficing and decision fatigue. The argument is that voters have finite mental resources, and when working down a list, they stop once they find an acceptable option rather than considering every possible option before making a choice.[11] Being the first-listed candidate then would be an advantage. However, this argument requires modification before it can be applied to proposition elections. To understand why, note that in a candidate election, voters face a problem like the following:

Choose one:

- ☐ T. Butler
- ☐ A. Iommi
- ☐ J. Osborne
- ☐ W. Ward

Voters can select one and only one name from the list. If voters satisfice—stopping once they find a "good enough" option—or become tired moving down a list, then appearing at the top of the ballot in a candidate election would confer an advantage.

Footnote 9 continued
the votes cast for governor in the previous election, is 8 % for constitutional amendments and 5 % for statutes (since 1966); the requirement is 5 % for referendums.

[10] We can get a rough sense of the importance of the ballot ordering rules in California by estimating the relation between approval rates and ballot position with and without controls for type of proposition. The coefficient of −0.46 in Fig. 1 becomes −0.21 when dummy variables for initiatives, referendums, and legislative measures are added to the regression, suggesting that about half of the negative relation is due to selection by type of measure. A negative relation (of smaller magnitude) appears if the sample is restricted to only initiatives, only referendums, or only legislative measures.

[11] A related idea is the "primacy effect," namely that people remember early items in a list better than later items.

The problem facing voters in a direct democracy election is different:

Proposition 1	Choose one: ☐ Yes ☐ No
Proposition 2	Choose one: ☐ Yes ☐ No
Proposition 3	Choose one: ☐ Yes ☐ No
Proposition 4	Choose one: ☐ Yes ☐ No

If voters become fatigued when moving down the list of propositions, we would expect to see more abstention moving down the ballot, but it is less obvious why voters would be more inclined to check the "No" box as they move down the ballot.

A rigorous and well-fleshed out theory of order effects in direct democracy elections has yet to be provided, but the existing literature suggests the outlines of two theories based on decision fatigue. The first (outline of a) theory relies on "confirmatory bias" (Miller and Krosnick 1998): experimental evidence suggests that when faced with choices, people begin by searching their memory for reasons that would lead them to select an option rather than reasons not to select an option. As they become fatigued, they think less and less about each option and become less likely to generate supportive thoughts. If we view voting "yes" on a proposition as a confirming or supporting action, this argument implies that as voters become fatigued they will become less likely to vote in favor of a proposition. The second theory relies on risk aversion: fatigue causes voting against a proposition because weary voters become averse to the risk inherent in new proposals (Bowler and Donovan 1998). Research suggests that as people become fatigued, they are more likely to choose simple or default options (see Levav et al. 2010 for discussion and evidence.) If voters consider the proposed new law to be more risky than the status quo—or feel that sticking with the status quo is the safe or default option—then fatigue would lead to a greater proclivity to support the status quo, that is, to vote "no".

To summarize, the literature has offered theoretical conjectures about how decision fatigue might interact with behavioral biases to create ballot order effects. This paper evaluates these hypotheses by testing whether ballot order effects are present in direct democracy elections. The null hypothesis is simply that citizens do not vote differently based on ballot position.

4 Existing evidence

The literature on ballot position effects in candidate elections is extensive. Miller and Krosnick (1998), in a well-known survey, observe that while much research concludes that candidates benefit from being listed first, the estimated effects often are small and research designs do not distinguish causation from correlation. The more recent literature that employs stronger research designs generally finds that the first position is advantageous (Meredith and Salant 2013), but some studies find small or nonexistent order effects (Alvarez et al. 2006; Ho and Imai 2008).

The existing literature on order effects using data from direct democracy elections is modest. Early statistical evidence was compiled and published by the California Secretary of State (1981). That study, entirely descriptive, reports the mean percentage of votes in favor by ballot position for all California propositions from 1884 to 1980.[12] The data show an irregular pattern, with approval rates not obviously dropping when moving down the ballot.

[12] The data are reported in an unnumbered table with the heading, "Success Rate of Each Ballot Position."

Bowler and Donovan (1998) examine partially overlapping data, 190 California propositions from 1974 to 1988 (not complete for that period), in a more systematic way. The study reports regressions of the percentage of votes against a proposition on its ballot position and several control variables, including type of measure (initiative, bond measure, constitutional amendment), type of election (presidential, general, primary), number of words in a proposition, and campaign spending (see their Table 5). The regression includes first- and second-order terms for ballot position, and the coefficient estimates imply a U-shaped relation that bottoms out at position #8.[13] That is, votes against a proposition decline over the first eight ballot positions, and then increase over the subsequent ballot positions. There is no theoretical reason to expect ballot order effects to reverse at position #8; the correlations do not seem to be causal.

Matsusaka (2013) examines 637 California propositions from 1960 to 2010. The study documents an overall negative relation between approval rates and ballot position, but shows that this relation is largely explained by the fact that voter initiatives, the least popular type of proposition, typically appear at the bottom of the ballot. When initiatives, bond measures, and legislative constitutional amendments are considered as separate groups, the correlation between approval and ballot position vanishes, except in the group of bond proposals. The study also reports non-California evidence on ballot position from all 1058 state-level propositions that appeared in the other states during the 2003–2012 period. A negative relation between approval and ballot position appears in this sample as well, but again, the finding appears to be explained by legal rules that place inherently unpopular propositions at the bottom of the ballot. The study does not offer evidence that can support strong causal inference.

The one existing study that employs plausibly random assignment to identify position effects is Augenblick and Nicholson (2016). That study, which uses precinct-level voting data from San Diego County during 1992–2002, exploits the fact that a typical ballot includes a set of federal, state, and local candidate races that are listed before the state propositions, and that the set of candidate races varies by precinct. Because of variation in the number of state and local candidate races, voters in different precincts may find the ballot propositions preceded by a different number of races. For example, if voters in one precinct face a state senate race while voters in another precinct do not face such a race, the propositions will appear one position farther down the ballot in the first precinct than in the second precinct. Using this variation, the study finds that proposition approval rates are lower when they are listed farther down the ballot; specifically, each position farther down the ballot results in 0.12 % fewer favorable votes. The Augenblick and Nicholson study offers plausibly causal estimates; however, the variation exploited by the study—moving the *entire* block of propositions lower on the ballot—is different from the exercise of moving one proposition to another position *within* the block, which is the situation of concern in recent debates.[14]

Finally, Binder and Kousser (2014) study experimental survey evidence. They ask a sample of Florida voters in 2012 their opinions on three Florida propositions appearing on that year's ballot, as well as two hypothetical propositions related to contemporary

[13] The coefficient on ballot-position is −2.12 and the coefficient on ballot-position-squared is 0.13, so the turning point is $\frac{2.12}{2\times 0.13} = 8.2$.

[14] It is also possible that including another candidate race affects voting on ballot propositions independent of the fact that the candidate race is placed before the propositions. For example, having a presidential election on the ballot pushes the propositions one spot lower, but the effects of a presidential election might be significant regardless of whether that race is listed before or after the propositions.

California propositions, varying the order in which questions are asked. The findings are mixed; some propositions do better when asked about first, while others do better when asked about last.

To summarize, despite the contentiousness over proposition ordering in direct democracy elections, the scholarly literature on order effects is limited and inconclusive. The remainder if this paper offers two different types of new evidence, the first from Texas, which offers randomized data, and the second from California.

5 Evidence from Texas

5.1 Methods and data

The Texas data are analyzed with a model of the following form:

$$V_{it}^{ELECT} = V_{it}^{*} + \alpha + \beta \cdot POS_{it} + \gamma \cdot LENGTH_{it} + e_{it}, \quad (1)$$

where V_{it}^{ELECT} is the percentage of votes cast in favor of proposition i in election t, V_{it}^{*} is the (unobserved) "true" preferences of voters in the hypothetical situation where voting is uninfluenced by ballot position, POS_{it} is the measure's ballot position (#1 is the top of the ballot, #2 is the second proposition, and so on), $LENGTH_{it}$ is the number of propositions on the ballot, e_{it} is an error term, and α, β, γ are parameters to be estimated. If voters are less inclined to approve as they move down the ballot, then $\beta < 0$.

The estimation challenge is that V_i^* is not observable; if we omit V_i^* and simply regress votes on ballot position, we have a textbook omitted variables problem, and the estimates of β will be biased if V_i^* is correlated with ballot position. One way to avoid this problem is to randomize ballot position, as Texas has done since 1986.[15] With positions assigned randomly, there is no reason to expect the underlying popularity of a measure to be related to its ballot position; therefore, omitting V_i^* from estimates of (1) should not introduce a bias in the estimate of β. The strategy then is simply to investigate whether propositions at the top of the ballot attract more favorable votes than those at the bottom of the ballot.

The data are drawn from official election results published by the Texas Secretary of State. Summary information on the 240 Texas propositions that appeared during 1986–2015 are reported in Panel A of Table 1. Texas does not allow initiatives or referendums, and the legislature does not place statutes on the ballot; therefore, all propositions are constitutional amendments proposed by the legislature. The main variable of interest, V_{it}^{ELECT}, is operationalized as the approval rate, or "%Yes", defined to be $\%Yes = 100 \times \frac{\text{yes votes}}{\text{yes votes + no votes}}$. Abstentions are ignored.[16]

[15] Texas Election Code, Title 16, Chapter 274, Subchapter A, Sect. 274.002. The relevant text is: "If more than one proposed constitutional amendment is to be submitted in an election, the order of the propositions submitting the amendments shall be determined by a drawing… "To the best of my knowledge, no study has exploited yet the randomization of proposition order in Texas; see Grant (2016) for a study of order effects in *candidate* elections in Texas that exploits the randomization of candidate positions, finding large effects.

[16] For reasons of space, this study does not consider the interesting phenomenon of abstention or "roll off." Ignoring this consideration should not affect the estimates of how ballot structure influences approval rates since approval rates are net of participation issues.

Table 1 Summary statistics for Texas and California propositions

Variable	Mean	SD	Min	Max
Panel A. Texas propositions, 1986–2015				
%Yes (election)	63.4	12.6	30.2	93.8
Position	8.5	5.9	1	27
Number of propositions on ballot	16.0	6.4	1	27

Variable	Field Poll sample ($N = 242$)				All props ($N = 678$)
	Mean	SD	Min	Max	Mean
Panel B. California propositions, 1958–2014					
%Yes (election)	48.6	12.5	13.3	74.2	53.8
%Yes (Field Poll)	54.5	13.5	19.1	89.0	NA
%Yes (election)–%Yes (Field Poll)	−6.0	8.1	−30.4	14.3	NA
Position	8.5	5.8	1	29	7.8
Number of propositions on ballot	14.1	7.1	1	29	14.6
Type = legislative bond measure	0.23	0.42	0	1	0.22
Type = initiative	0.70	0.46	0	1	0.34
Dummy = 1 presidential election year	0.51	0.50	0	1	0.47

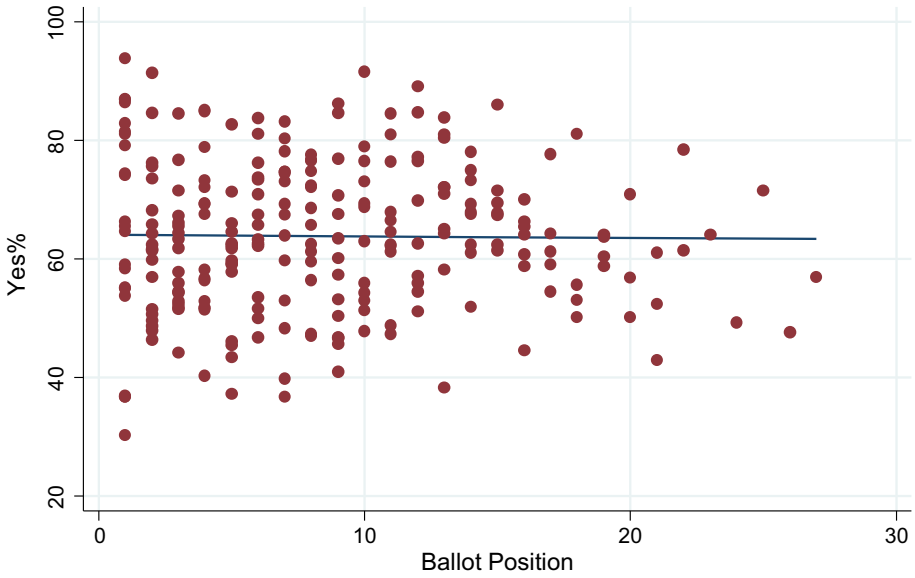
This table reports summary statistics for the Texas (Panel A) and California (Panel B) data. Texas data include 240 propositions. All Texas propositions were constitutional amendments placed on the ballot by the legislature. California data include 678 propositions, 242 of which were surveyed in the Field Poll. Panel B reports the mean approval rate for Field Poll propositions and for all propositions (those included and excluded from Field Poll) during the period

5.2 Findings

Figure 2 plots the approval rate for Texas propositions against their ballot positions. The solid line is a regression of approval on position. The regression line is almost completely flat, indicating essentially no connection, on average, between ballot position and approval rates. This is initial evidence against the hypothesis that position has an important effect on approval rates.

Table 2 extends the investigation by reporting regressions of the approval rate on ballot position. Each column in the table reports results from a regression. Column (1) reports a regression representing the solid line in Fig. 2. Taken at face value, the coefficient of −0.03 on ballot position indicates that each position further down the ballot is associated with 0.03 % fewer votes in favor, a small number that cannot be distinguished from zero statistically.

The remaining regressions of Table 2 include a variable equal to the number of propositions on the ballot. Column (2) shows a positive relation between ballot position and votes in favor, again statistically insignificant, and a negative relation between ballot length and votes in favor. The coefficient −0.40 on ballot length implies that each additional proposition on the ballot is associated with 0.40 % fewer votes in favor. This coefficient is different from zero at the 1 % level of statistical significance. The regression in column (3) is the same as the regression in column (2) except that extreme values of the



Note. The figure plots all 240 propositions that appeared on the Texas ballot during 1986-2015. Ballot positions in a given election were assigned randomly by election officials. Data were collected from official election reports published by the Texas Secretary of State.

Fig. 2 %Yes by ballot position, Texas propositions 1986–2015

Table 2 Regressions of %Yes on ballot position, Texas propositions 1986–2015

	(1)	(2)	%Yes Winsorized (3)	Position capped at #16 (4)	Election fixed effects (5)
Position	−0.03	0.20	0.20	0.32*	0.20
	(0.14)	(0.16)	(0.16)	(0.19)	(0.15)
Number of propositions on ballot	–	−0.40***	−0.39***	−0.42**	–
		(0.15)	(0.15)	(0.15)	
Intercept	64.1***	68.5***	68.4***	68.1***	–
	(1.4)	(2.2)	(2.2)	(2.2)	
R^2	.001	.028	.028	.034	.272

Each column reports estimates from a regression in which the dependent variable is the percentage of votes in favor of a proposition. In column (2), the dependent variable is Winsorized at the 99th percentile. In column (3), ballot positions above 16 are restated as 16. The regression in column (4) includes election-specific fixed effects. The data include all 240 Texas ballot propositions during 1986–2015. Significance levels are indicated: * = 10 %, ** = 5 %, *** = 1 %

dependent variable are Winsorized at the 99th percentile; the coefficients are essentially unchanged.[17] The regression in column (4) explores sensitivity to a different outlier concern by establishing a maximum ballot position of #16. As Fig. 2 shows, the number of

[17] The particular cutoff is not important. For example, the reported coefficient on ballot position of 0.20 becomes 0.16 when Winsorizing at the 90th percentile and 0.17 when Winsorizing at the 95th percentile, neither being statistically significant.

propositions with positions greater than #15 is rare, so the column (4) specification reduces the chance that the few extreme positions are driving the result. The coefficient on ballot position remains positive and is now statistically different from zero at the 10 % level, suggesting an advantage to appearing near the bottom of the ballot. The coefficient on ballot length is essentially the same.[18]

One concern with the regressions in columns (2)–(4) is that ballot position and ballot length are to some extent positively correlated for mechanical reasons. This could cause the ballot position coefficient to absorb ballot length effects, and vice versa. The regression in column (5) avoids this problem by including election-specific fixed effects; in this case the ballot position coefficient is estimated based on within-ballot variation, and thus is free from ballot length effects. As can be seen, the coefficient on ballot position remains positive, with the magnitude similar to other specifications, and without statistical significance.[19]

Following Augenblick and Nicholson (2016), we can estimate how many election outcomes would have come out differently if every proposition had appeared in the first position, that is, if no proposition suffered the consequences of being listed other than first. To do this, we calculate the implied change in each proposition's approval rate based on the coefficient on ballot position and the proposition's actual ballot position, and compare this to its margin of victory or defeat. Using the estimate in column (1), where appearing down the ballot is disadvantageous, only one of one of the 240 propositions would have gone from fail to approve if listed at the top of the ballot. Using the estimate in column (5) where appearing down the ballot is advantageous, no proposition would have gone from approval to failure if listed at the top instead of its actual position. In contrast to Augenblick and Nicholson (2016), which concludes that 6 % of elections would have been different without ballot order effects, I find that ballot order was a determining factor in virtually no election outcomes in Texas.[20]

Statistically insignificant coefficients on ballot position do not rule out order effects; they only imply that we are unable to distinguish any potential effects from noise. To get a sense of what size effects are plausible with these data, we can add or subtract two standard errors to find the maximum and minimum coefficients that can be rejected at the 95 % confidence level. Those bounds range from 0.09 to 0.49, meaning that any effects outside those bands can be rejected statistically. Thus, even if being listed down the ballot costs votes, it is likely that the cost is extremely small. In contrast, there appears to be a reliably negative relation between approval rates and ballot length.

[18] The positive coefficient is robust to alternative caps. For example, setting the maximum position at #10 yields a coefficient of 0.51 on ballot position; capping at position #20 yields a coefficient of 0.24.

[19] The regressions assume a linear relation between approval rate and ballot position, but Eq. (1) allows for any sort of nonlinearity. I estimated a variety of models with alternative specifications—for example, including second-order terms and allowing for differential effects in the first position—and did not find robust evidence of order effects with these more complicated specifications either.

[20] The reason for the discrepancy is unclear. Perhaps elections are more competitive in San Diego County than Texas, so small effects are more likely to swing an election. Another possibility is that the Augenblick and Nicholson (2016) estimates overstate the consequences by not considering the effect of switching position within the block of propositions, but of jumping a proposition to the top of the entire ballot, ahead of all candidate elections; no propositions appear in such a position in their data—projecting outside the support of their data may produce unreliable predictions.

6 California

6.1 Methods and data

Recall that the core problem in estimating (1) is that V_i^* typically is not observable. The research strategy for the California data is to use pre-election opinion surveys to proxy for V_{it}^*. If survey responses do not depend on ballot position (more on this below), then we can assume that they are generated according to:

$$V_{it}^{SURVEY} = V_{it}^* + \lambda + \mu X_{it} + u_{it}, \tag{2}$$

where V_{it}^{SURVEY} is the percentage of respondents who express support for proposition i, X_{it} includes factors that cause survey responses to differ from underlying preferences, λ is a fixed survey "bias" (for example, pre-election polls in California systematically overstate support for propositions), and u_{it} is an error term that is independent across propositions.

The difference between election returns and pre-election survey results (called the "gap") is denoted by Δ, which from (1) and (2) can be expressed as:

$$\Delta_{it} = V_{it}^{ELECT} - V_{it}^{SURVEY} = \alpha - \lambda + \beta \cdot POS_{it} + \gamma Z_{it} - \mu X_{it} + e_{it} - u_{it}. \tag{3}$$

Then we can regress Δ on ballot position to recover the position effects without needing to know the electorate's underlying preferences. The estimate of β will be unbiased even if ballot position is determined by underlying preferences rather than being assigned randomly. Another advantage of specification (3) is that it is not necessary to control for determinants of the vote choice itself because they are subsumed in the V_{it} variable.

A less formal way to think about this empirical strategy is that it uses pre-election survey information to reveal the "untreated" preferences on a proposition. This expressed preference is compared to the actual election outcome that has been "treated" with the position effect, and the difference is used to infer the treatment effect. A potential limitation of using pre-election survey data as a control is the possibility that preferences change between the time of the poll and the election, or that voters express preferences in an opinion survey that differ from their true beliefs. However, to the extent that there are systematic biases in the survey, they will be absorbed into the intercept term, and will not confound inferences as long as they are not correlated with ballot position.

The core data are election returns from *Statement of Vote*, published by the California Secretary of State, and pre-election survey data from the Field Poll, available at www.field.com, and the Field Research Data at UC Berkeley at ucdata.berkeley.edu/data.php. If the Field Poll conducted multiple surveys on a proposition, I use data from the final survey, that is, the one closest to the election. The Field Poll runs from 1958 to 2014. Of the 678 propositions that went before the voters during that time, Field Poll data are available for 242 of them.

The variables V_{it}^{ELECT} and V_{it}^{SURVEY} are operationalized as "yes" votes as a percentage of all votes. Abstainers or, in the case of a survey, individuals who decline to state or fail to give an opinion in favor or against are ignored. The gap between the election outcome and pre-election survey is defined as $\Delta = \%Yes_{ELECT} - \%Yes_{Field\ Poll}$.

Summary statistics for California propositions are reported in Panel B of Table 1. The propositions in the sample are not representative of all propositions that appeared on the ballot because the Field Poll focuses on high-profile or controversial propositions. Field Poll propositions are less popular than other propositions, with a mean vote in favor of 48.6 % compared to 53.8 % for all propositions that reach the ballot. Field Poll

propositions are much more likely than the full set of propositions to be initiatives (70 % vs. 34 %), and much less likely to be legislative proposals (27 % vs. 65 %).

Table 1 shows that the final Field Poll before an election exceeds the percentage of favorable votes in the election by 6.0 %, on average. This indicates a systematic "bias" in the Field Poll, or alternatively, a predictable tendency for support to deteriorate leading up to an election. Many election observers have noted that support for propositions tends to deteriorate over time; Table 1 provides a large-sample quantification of the effect. The deterioration may occur because proponents are usually the first to mobilize—they have to secure legislative approval or collect signatures—and their arguments are the first to reach the voters. As the campaign progresses, opponents make their case and some voters change their mind. This deterioration in support between the last survey and the election is not a problem for the identification exercise as long as deterioration is uncorrelated with ballot position.[21]

The empirical analysis assumes that Field Poll responses are not influenced by ballot position. This assumption would be questionable if the Field Poll asked voters about all propositions on the ballot in the same order that they appeared on the ballot. That is not the case. As noted above, the Field Poll conducted surveys for only 36 % of propositions on the ballot. Furthermore, only 14 % of the surveys included all of the questions, and in 37 % of the surveys the questions were not asked in the order in which they appeared on the ballot. For example, the 2002 general election featured seven ballot measures; the Field Poll asked about four of them in this order: Proposition 47-50-49-52.[22] The order on the ballot was 46-47-48-49-50-51-52. The survey contains omissions as well as re-orderings and does not simply reproduce the actual ballot positions.[23]

Finally, it is worth emphasizing that the Field Poll does not select issues at random. Rather, it chooses issues that are likely to be of interest to the public or policymakers. This should not create a bias in the coefficients of interest, but it does affect external validity. The California results should be seen as applying to relatively high-profile ballot issues. The Texas data in some sense fill in the picture by providing evidence on lower profile issues.

6.2 Findings

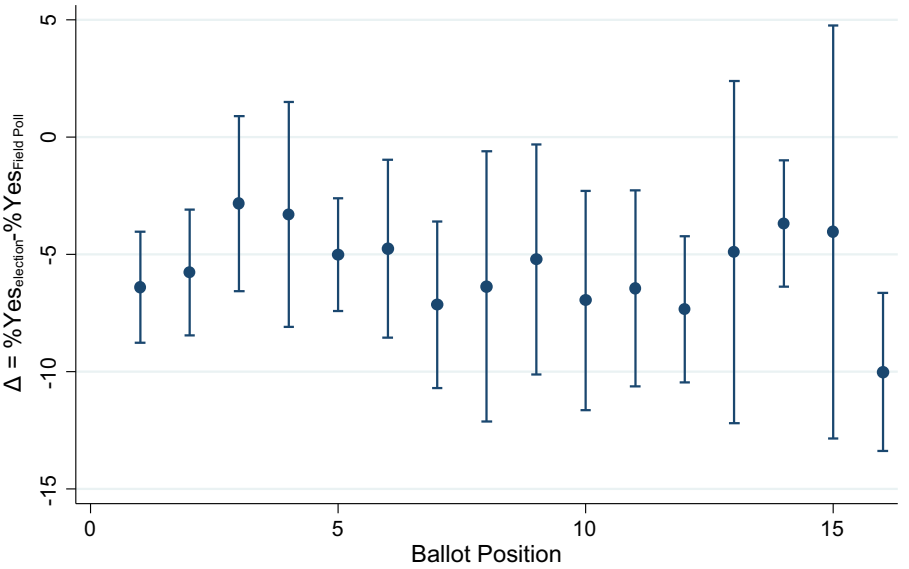
Figure 3 provides a characterization of the California data by plotting the mean gap (Δ) by position, with 95 % confidence intervals indicated. Positions greater than #15 are collapsed into a single group because of the paucity of observations. The means do not show a consistent downward (or upward) pattern.

Table 3 reports statistical evidence from the California data: each column reports a regression of the gap, Δ, on ballot position, following Eq. (3). The coefficient on ballot position in column (1) is -0.07 (meaning that each position down the ballot reduces approval by 0.07 %), quite small and far from statistical significance. Using the two-standard-error rule of thumb, we can think of the potential effects as ranging from -0.31 to 0.17 %, which allows the possibility of nontrivial negative effect at the boundary. A

[21] While plausible, the absence of such a correlation is not self-evident. For example, one might suppose that propositions near the top of the ballot were organized earlier than propositions at the bottom of the ballot, and better organized propositions suffer less deterioration in support.

[22] *The Field (California) Poll: Codebook 02-05*, questions Q19 to Q26.

[23] In 1994, the Field Poll conducted surveys on four ballot propositions in a randomized order. Those results are summarized in the Appendix.



Note. The figure plots the mean difference between the election approval rate and the pre-election Field Poll approval rate, by position. The bars indicate plus and minus two standard errors. Positions 16 and larger are combined into the position #16 category. The sample includes 242 propositions.

Fig. 3 Mean gap (Δ) by ballot position, California propositions 1958–2014

Table 3 Regressions of gap (Δ) between election and survey %Yes, California propositions 1958–2014

	(1)	Δ Winsorized (2)	Position capped at #16 (3)	Election fixed effects (4)
Position	−0.07	−0.06	−0.07	−0.03
	(0.12)	(0.11)	(0.14)	(0.12)
Number of propositions on ballot	−0.30***	−0.30***	−0.31***	–
	(0.09)	(0.09)	(0.08)	
Dummy = 1 if initiative	1.44	1.31	1.41	−1.19
	(1.20)	(1.15)	(1.21)	(1.35)
Dummy = 1 if presidential election year	2.44**	2.31**	2.42**	–
	(1.01)	(0.97)	(1.01)	
Intercept	−3.40**	−3.32**	−3.29**	–
	(1.37)	(1.32)	(1.36)	
R^2	.098	.102	.097	.464

Each column reports a regression in which the dependent variable is Δ (or some variant thereof as indicated at the top of each column), where $\Delta \equiv \%Yes_{ELECT} - \%Yes_{Field\ Poll}$. In column (2), the dependent variable is Winsorized at the 95th percentile; in column (3), ballot positions above 16 are restated at position 16. The regression in column (4) includes election fixed effects. The data include 242 California propositions during 1958–2014. Significance levels are indicated: * = 10 %, ** = 5 %, *** = 1 %

similar pattern appears for the Winsorized specification in column (2) and the capped position specification in column (3). The regression in column (4) includes election-specific fixed effects. The coefficient is even smaller, −0.03, and again far from statistical

significance. The California data, like the Texas data, offer little reason to believe that propositions benefit from being listed earlier on the ballot.

The California data also produce the pattern in the Texas data that propositions on longer ballots receive fewer votes in favor, independent of the proposition's own ballot position. In column (1) of Table 3, each additional proposition on the ballot reduces the approval rate by 0.30 % on average, a relation that is statistically significant at the 1 % level, and similar in magnitude to what appears in the Texas sample. The coefficient on ballot length is negative and statistically different from zero in regressions (2) and (3) as well.

Another control variable is a dummy equal to one if the proposition was an initiative, as opposed to a proposal from the legislature or a referendum. Initiatives might be expected to attract more attention before the election, and therefore show less of a gap between election approval and pre-election approval. This turns out not to be the case: the coefficient on the initiative dummy suggests a larger gap for initiatives, although the coefficient is not distinguishable from zero at conventional levels of significance in any of the regressions. The final control variable is also related to information conditions, a dummy equal to one for presidential election years. One could argue that voters pay more attention to politics in presidential election years, and thus are more informed, or conversely, that a presidential election draws voters to the polls who are uninformed about ballot propositions. The data show a significantly wider gap in presidential election years, indicating that support does not deteriorate as much in presidential election years.

I also estimated but do not report regressions under a variety of alternative specifications in order to assess robustness of the findings. The alternatives included: allowing a separate effect for the first position and for the last position; including higher order terms for ballot position; including time dummies; including dummies for general as opposed to primary elections; including dummies for bond propositions and for referendums; including controls for the fraction of undecided voters; and alternative Winsorization cutoffs. For all of these alternatives, it continued to be the case that no reliable relation could be found between approval rates and ballot position.

7 Discussion and conclusion

State and local governments in the United States, and increasingly abroad, rely on ballot propositions to resolve important public policy issues. More than 1800 state-level propositions have come before American voters in the twenty first century alone, addressing high-profile and high-impact issues such as same-sex marriage, marijuana legalization, taxes, and spending. The number of issues appearing in counties, cities, and towns is at least an order of magnitude larger, and equally diverse. With citizen lawmaking playing a central role in American democracy, it is important to identify mechanisms that might lead to distortions in direct democracy decisions. One potential distortion—the order in which issues are presented to voters—has long concerned practicing politicians, many of whom believe that being listed at the top of the ballot is advantageous, and this belief has influenced the design of state election laws. Yet research on the effect of ballot structure in proposition elections remains scarce, and seldom allows causal inference.

This paper proposes and implements two different empirical strategies, both of which are designed to distinguish causality from correlation. One strategy is to examine Texas propositions since 1986, when the state began to place propositions on the ballot in a

random order. The other strategy is to use pre-election survey data from California, which has a long history of polling on ballot measures, to control for public opinion independent of ballot position. Both approaches fail to turn up robust evidence in support of the idea that propositions attract more favorable votes when listed at the top of the ballot (or any other position) than when listed elsewhere on the ballot. Because the evidence comes from two rather different states and two different information environments—low-profile measures in Texas in off-year elections versus high-profile issues in California—yet tells the same story, the findings may have some generality. While it is difficult to prove a negative, and variance around the estimates leaves some room for the possibility of modest order effects, the evidence at hands points to the conclusion that ballot order effects are at best rather small.

At first glance, these findings appear at odds with those of Augenblick and Nicholson (2016). However, Augenblick and Nicholson do not actually study ballot order effects, as conventionally defined; rather they investigate the effect of shifting the block of propositions as a group above or below the candidate elections on the same ballot. For example, if a ballot begins with 10 candidate races in positions #1 to #10 and ends with 10 propositions in positions #11 to #20, Augenblick and Nicholson examine what would happen if the propositions were moved to positions #1 to #10 but otherwise kept in the same order. My study examines whether it matters to present propositions in a different order, for example, for a particular proposition to be listed #11 versus #20.

In contrast to weak evidence for order effects, I find a robust negative relation between approval rates and ballot length. Each additional proposition on the ballot is associated with about 0.3 % lower approval for *all* propositions on that ballot. These estimates are similar across various specifications, and hold for both California and Texas. On its own, we might be tempted to attribute this finding to decision fatigue, but that seems paradoxical given the absence of evidence for order effects. One way to square the two findings would be if voters do not complete the ballot sequentially: they might come to the polling place with a list of propositions they find important, and focus first on voting for those key propositions and then disapprove the rest. If decision fatigue limits their set of key propositions, then we could observe no order effects but lower approval on long ballots. An explanation with some anecdotal appeal, unrelated to decision fatigue, is that voters dislike long ballots in principle; if asked to resolve too many questions they sour on the entire enterprise and are more likely to vote no on any given issue. This would cause an erosion of support for every proposition on a long ballot, independent of position. A third possibility is that the finding is spurious. The study is designed to provide causal estimates of the order effect, but ballot length is not randomly assigned in the study. It could be that on short ballots only the strongest propositions qualified, while on long ballots a number of marginal propositions made the cut. Without a research design that allows stronger causal inference, it is not possible to settle on an explanation, and the ballot length coefficient ought to be interpreted with some care.

The policy implications of these findings are nuanced. In terms of providing a level playing field, it appears that one should not be overly concerned with order manipulation because the top of the ballot is not demonstrably better than the bottom. Even so, there is no obvious downside to randomizing ballot position, so it would seem to be a useful precaution. The evidence of lower approval rates on long ballots, if interpreted as a causal effect, calls for some attention concerning ballot length. However, with no evidence as to whether approval rates in general are too high or too low, it is difficult to conclude whether the erosion of support on long ballots is a good or bad thing. Moreover, an attempt to shorten ballots would mean that fewer issues reach the voters. Any benefits from higher

approval rates on short ballots would have to be balanced against the downside of curtailing the number of public issues on which voters are allowed to decide.

Finally, the motivating example for this paper was California's Proposition 30 that catalyzed a revision of the California elections code. As discussed above, the revision was widely seen as intended to help Proposition 30 pass. This study's findings suggest that simply moving the proposition to the top of the ballot was unlikely to have mattered. However, there was another feature of that ballot that could change the story: a competing initiative on the same ballot proposed a tax increase that was similar to the increase in Proposition 30. Rather than decision fatigue, it could be that voters have a target budget in mind and will only tax themselves (or approve spending) until that target budget is depleted. If voters behave in that way, being listed first would be advantageous in order to capture affirmative votes before voters exhaust their target budgets. This line of thinking suggests that ballot order might matter in the context of competing proposals. As an exploratory exercise, I returned to the California data and restricted the sample to bond propositions ($N = 55$). I then created a variable equal to the number of bond propositions that preceded each of the bond propositions on the ballot (i.e., the first bond proposition on a ballot was preceded by zero bond propositions, the second was preceded by one bond proposition, and so on). I then estimated a gap regression (3) that included the number of preceding bond propositions as an explanatory variable. The coefficient on the new variable was positive and statistically significant at the 10 % level, indicating that bond propositions received *more* votes when they were preceded by other bond propositions, contrary to what would be expected if voters have target budgets. Clearly, more rigorous testing of this conjecture is needed.

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Appendix

The Field Poll conducted a randomized controlled experiment in its survey for the June 7, 1994 primary election. I report this experiment here to bring it to the attention of researchers in the area. The Field Poll exercise is similar to the experiment reported in Binder and Kousser (2014). Four bond propositions were on the ballot, Propositions 1A, 1B, 1C, and 180. Each proposition authorized a bond issue for a different purpose (seismic retrofit, K-12 schools, higher education, or parklands). The Field Poll asked respondents if they expected to vote for or against each proposition. Half of the respondents were asked the questions in a random order, and half were asked the questions in the order they were to appear on the ballot (1A-1B-1C-180). This experiment presents an interesting opportunity to check for order effects because of the availability of a clear "order-free" benchmark; its main limitation is that it does not involve actual election votes and cognitive processes might be different when speaking to a pollster than when in the voting booth.

Table 4 summarizes the responses. In the randomized sample, column (1), the highest pre-election approval rate was 72.9 % for Proposition 1A and the lowest was 59.3 % for Proposition 180. Column (2) reports responses when questions were asked in the order they were to appear in the ballot. If the top of the ballot is a favored position, the gap (Δ) between the approval rate with the actual order and with the randomized order should decline moving down the ballot. There is no evidence for such a pattern. Column (3)

Table 4 %Yes from Field Poll with randomized question order, California 1994

Proposition	Ballot position	Question order = randomized (1)	Question order = 1A-1B-1C-180 (2)	Election results (3)
1A (retrofit bonds)	#1	72.9	72.7 ($\Delta = -0.2$)	45.7 ($\Delta = -27.2$)
1B (K-12 bonds)	#2	68.0	69.8 ($\Delta = 1.8$)	49.6 ($\Delta = -18.4$)
1C (higher education bonds)	#3	60.5	58.8 ($\Delta = -1.7$)	47.4 ($\Delta = -13.1$)
180 (parkland bonds)	#9	59.3	64.2 ($\Delta = 4.8$)	43.3 ($\Delta = -16.0$)
Respondents/voters		416	416	4,966,827

The election took place June 7, 1994. Field Poll data are taken from *The Field Institute/The California Poll*—9403, administered April 1 to April 9, 1994. Columns (1)–(3) report approval rates, defined as votes in favor as a percentage of votes in favor plus votes against. Δ in column (3) is the column (2) approval rate minus the column (1) approval rate; Δ in column (4) is the column (3) approval rate minus the column (1) approval rate

reports approval rates in the actual election. As is common, overall support eroded substantially between the survey date (early April) and the actual election (early June). The Δ between the approval rates in the election and the randomized order survey does not show a convincing pattern of declining moving down the ballot.

References

Alvarez, R. M., Sinclair, B., & Hasen, R. L. (2006). How much is enough? The 'ballot order effect' and the use of social science research in election law disputes. *Election Law Journal, 5*(1), 40–56.

Augenblick, N., & Nicholson, S. (2016). Ballot position, choice fatigue, and voter behavior. *Review of Economic Studies, 83*(2), 460–480.

Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology, 74*(5), 1252–1265.

Binder, M., & Kousser, T. (2014). First come, first served? Experiments on ballot order in direct democracy elections. University of North Florida and UC San Diego working paper.

Bowler, S., & Donovan, T. (1998). *Demanding choices: opinion, voting, and direct democracy*. Ann Arbor: University of Michigan Press.

California Secretary of State. (1981). *A study of ballot measures: 1884-1980*. Sacramento: California Secretary of State.

Danziger, S., Levav, J., & Avnaim-Pesso, L. (2011). Extraneous factors in judicial decisions. *Proceedings of the National Academy of Sciences, 108*(17), 6889–6892.

Grant, D. (2016). The ballot order effect is huge: evidence from Texas. Sam Houston State University working paper.

Ho, D. E., & Imai, K. (2008). Estimating causal effects of ballot order from a randomized natural experiment. *Public Opinion Quarterly, 72*(2), 216–240.

Iyengar, S. S., & Kamenica, E. (2010). Choice proliferation, simplicity seeking, and asset allocation. *Journal of Public Economics, 94*(7–8), 530–539.

Levav, J., Heitmann, M., Herrman, A., & Iyengar, S. S. (2010). Order in product customization decisions: evidence from field experiments. *Journal of Political Economy, 118*(2), 274–299.

Lupia, A., & Matsusaka, J. G. (2004). Direct democracy: New approaches to old questions. *Annual Review of Political Science, 7*, 463–482.

Matsusaka, J. G. (2005). Direct democracy works. *Journal of Economic Perspectives, 19*(2), 185–206.

Matsusaka, J. G. (2013). In search of ballot order effects in proposition elections. USC Marshall School of Business working paper.

Meredith, M., & Salant, Y. (2013). On the causes and consequences of ballot order effects. *Political Behavior, 35*(1), 175–197.
Miller, J. M., & Krosnick, J. A. (1998). The impact of candidate name order on election outcomes. *Public Opinion Quarterly, 63*(2), 291–300.
Mueller, J. E. (1969). Voting on propositions: Ballot patterns and historical trends in California. *American Political Science Review, 63*(4), 1197–1212.
Selb, P. (2008). Supersized votes: ballot length, uncertainty, and choice in direct legislation elections. *Public Choice, 135*(3/4), 319–336.