

Campaigns and the Mitigation of Framing Effects on Voting Behavior: A Natural and Field Experiment

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Abstract There is a widely held belief that the way a ballot proposition title is framed (the way the issue is presented) has an effect on its eventual success or failure on Election Day. Prior to California's 2010 General Election, the ballot language for two propositions was disputed and challenged in court. For both Proposition 22, intended to change the allocation of state and local tax revenues, and Proposition 23, intended to overturn California's landmark global-warming law, Fresno County failed to make the court ordered changes. The election proceeded with the unchanged ballot language in Fresno County and the newly adjusted ballot language throughout the rest of the state. This paper takes advantage of this natural experiment to evaluate the potency of framing effects in direct democracy elections, as well as, the role that campaigns (high salience versus low salience) can play in limiting those effects. As a further test, survey data using identical language collected in an area where neither issue was of high salience is used as a comparison. This additional test serves as a mechanism to isolate any potential framing effect of campaigns. We conclude that the way a ballot measure is framed has an impact on its Election Day success so long as it is a relatively low-salience measure. For initiatives with vigorous campaign activity, such as Proposition 23, framing effects are less effective and not statistically significant in this instance.

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If people can think about an issue or a candidate in multiple ways, they are susceptible to framing effects. Numerous studies have established that subjects' reported attitudes vary with the context of the question or that their decisions vary with how their options are presented (Chong and Druckman 2007; Schwarz 2007). Since most, if not all of the framing literature has used some form of survey or laboratory experiments, there are lingering questions about whether or not those effects persist in a real world environment. Do frames actually affect peoples' decisions at the ballot box?

Ideally, scholars would replicate laboratory studies using observational methods during campaigns, but it is often infeasible to do so. The campaign environment makes it difficult to tease out how particular frames or messages affect peoples' electoral choices. One barrier, tracking campaign advertising, is expensive and even when it is done, the data are not available to the scholarly community until years after an election (for proprietary reasons).

Occasionally, events during a campaign afford scholars the opportunity to gain leverage over elusive answers to such important questions. In California's general election in 2010, one of the state's 58 counties made a crucial error. Earlier that year, California courts ordered then-Attorney General Jerry Brown to change the official language for Propositions 22 and 23 because the court feared that Brown's approved titles and descriptions would bias the results. The ballots all over the state were changed to incorporate the new wording for the two measures with one notable exception: Fresno County failed to update their English language ballots for either measure. By the time the county was alerted to its mistake, the ballots were printed with the original language for Propositions 22 and 23. It was too late to reprint all of the ballots, so the election in Fresno County proceeded with the incorrect language for those two propositions.

Fresno County's "mistake" presents us with a natural experiment and an opportunity to test framing effects in an election. We investigate whether Propositions 22 and 23 performed differently in Fresno compared to counties that successfully changed their ballots in time. The two propositions deal with substantively different policies, Proposition 22 involves state and local funding, while Proposition 23 contains changes to a pollution control law. Optimally, our comparison of propositions would include nearly identical topics, however, that opportunity was not presented. In order to bolster our claims about the role that campaigns can play in mitigating framing effects, we conducted an experiment to alleviate concerns that the issues in the propositions are not driving the differential effects in our findings. The survey experiment was conducted in Duval County, Florida, an area that was not exposed to the political environment surrounding the California propositions. Thus, our study is one of the first to contrast observational evidence of framing effects with experimental survey results.

The frames in our survey experiment significantly affected the level of support for each ballot measure, but these effects were not replicated in the election results.

Using county-level election and census data, we find that in Fresno County the change in Proposition 23's ballot title did not significantly affect its support while the change in Proposition 22's fiscal analysis did. We suggest that the disparity between the election results and our survey experiment is caused by the variation in campaign intensity between the two propositions. Proposition 23 engendered a significantly more vigorous campaign than Proposition 22, also giving us an opportunity to observe whether framing effects vary by campaign intensity. Framing effects are more likely to endure in a low-information environment where campaigns do not spend a lot of money and the media do not devote much attention to the race (like most ballot proposition campaigns, with Proposition 23 as a notable exception). Frames in higher intensity environments, on the other hand, are less likely to affect election results because of the increased awareness and knowledge within the electorate.

Framing and Attitudes

The way that an issue, an event, or politician is presented, or the way that information about them is *framed*, can affect how we evaluate them. We adopt Chong's and Druckman's (2007, p. 105) definition of an attitude as the weighted sum of a series of previous judgments about an attitude object (i.e. a person, group, object, or issue). When we are tasked with evaluating an issue, for example, we update our attitude by comparing new information to previous considerations stored in our long-term memory (Chong and Druckman 2007; Schwarz 2007). The context in which information is presented, or the frame, affects which considerations we retrieve from memory, thereby affecting how we update our attitude. Changes in frames changes our reference points and can affect whether and how we update our beliefs.

Experimental research establishes some of the ways that frames affect our judgment. Tversky and Kahneman showed that people's decisions change as a function of how the alternatives are presented, even though they are logically equivalent (Kahneman 2003; Kahneman and Tversky 1979; Tversky and Kahneman 1981). These frames are what Druckman (2001) calls "equivalency frames." In their classic "Asian Disease Problem," Tversky and Kahneman asked respondents to decide how they would deal with the outbreak of a fictitious deadly Asian disease. Faced with a choice that offered certainty and another that seemingly did not, a majority of subjects preferred the "sure bet" over the seemingly "riskier" alternative.

Equivalency frames can also change the *tone* of the stimulus and produce significantly different outcomes. "Tone of wording" frames alter the tone of one or more words, but do not change the substantive meaning of the stimulus object (Druckman 2001). For instance, survey respondents answer differently when asked to "forbid" something rather than to "not allow" it because the former carries a much more negative connotation than the latter (Rugg 1941; Schuman and Presser 1981). Similarly, in a 1989 study, Rasinski found that only 20–25 % of the public wanted to pay for "welfare," while 63–65 % of people were willing to pay for "assistance to the poor" (Rasinski 1989, p. 391).

Issue frames, or *emphasis* frames (à la Druckman 2001), can influence peoples' beliefs about a policy because they lead voters to weigh certain elements of an attitude object more than others. For example, in an experiment using Ohio State University students, subjects exposed to a story about a new real estate development focusing on its environmental consequences were significantly less supportive of it than those who read a story highlighting its economic benefits (Nelson and Oxley 1999). Surveying Kansans' opinions on concealed handgun laws shortly after the Columbine tragedy, Haider-Markel and Joslyn (2001) found that people exposed to a message emphasizing public safety were significantly less supportive of conceal and carry laws than people exposed to a frame emphasizing one's right to carry a gun.

Frames in a Campaign Environment

The experimental results are clear, but there are reasons to question whether framing effects persist in the real world. Many of the conditions that affect our electoral choices differ from the factors that affect our opinions (Burnett and Kogan 2011; Druckman 2004; Johnston et al. 1992). The costs of alternative choices and social influences also bear on our behavior when they may not affect our attitudes (see Schwarz (2007) for a discussion of many other factors). A campaign environment presents intervening factors between beliefs and political choices. In a typical election cycle, opposing campaigns strive to counter the other side's message and the back and forth may weaken any single frame's influence on voters' opinions. People also talk to their friends, neighbors and coworkers about the candidates and the degree of political heterogeneity in one's network affects the strength of one's political preferences (Berelson et al. 1954). In his past research, Druckman (2004) showed that the presentation of counter frames and open discussion in a politically diverse group watered down the extent to which a frame affected subjects' attitudes.

Framing in Ballot Propositions

In this paper, we take framing research one important step further by testing framing effects in *both* an experimental setting and in an actual election. In California's General Election in 2010, the state was ordered to change the language for two ballot propositions and one of its 58 counties failed to make the appropriate modifications in time for the election. The natural experiment compared election results in Fresno County to results in the remaining counties using the court ordered language. We compared these results to the findings of a survey experiment we conducted testing the competing language for each of the two propositions in the natural experiment.

Direct democracy elections are unique because they ask voters to approve or reject proposed policies rather than choosing between competing candidates of opposing parties. For each proposition, voters read a title and a short paragraph summarizing the policy written by a state official. We acknowledge the abundance of literature demonstrating that most citizens are not political experts (Delli Carpini and Keeter 1996) and do not pay much attention to politics on a daily basis (Downs

1957). Yet, we assume that if citizens are going to vote on a ballot question, they will read a proposition's title and summary.

The way that a ballot question is phrased can affect its popularity among the electorate. Support for a proposition can shift if it mentions likeable population groups and not others, or if it emphasizes the benefits of a proposed law instead of its costs (Bowler and Donovan 2010). In Switzerland in 2000, two competing initiatives aimed at modifying eligibility rules in the Swiss pension system were similar in content but they differed in how they emphasized which groups would be affected by the proposed policy changes. The title for Initiative 469 emphasized a lower retirement age for women while Initiative 470 emphasized a lower retirement age for everyone. The latter received 6.5 % points more support than the initiative emphasizing changes in the retirement age for women (Bütler and Maréchal 2007).

It should be no surprise then that supporters and opponents of propositions spend millions of dollars on lawsuits over the language in a title or proposition, as we saw in the two lawsuits concerning California Propositions 22 and 23 in 2010 (League of California Cities 2010; Rogers 2010). Prior to the 2010 California General Election, the courts ordered the state to change the original language for both propositions. Judges ruled that the phrasing in the title for Proposition 23 and the fiscal impact statement for Proposition 22 would likely bias voters.

All of the counties in California changed their ballots accordingly, except for Fresno County. The County Clerk, Victor Salazar, blamed the oversight on budget cuts and understaffing (Fontana and Benjamin 2010). By the time the County Clerk's office was alerted to its mistake, the absentee ballots had already been sent out and it was too late to reprint the polling station ballots or send a mail notification to absentee voters. The election proceeded with the incorrect fiscal impact statement for Proposition 22 and the incorrect ballot title for Proposition 23. Salazar claimed that he would send out news alerts and post signs in all polling places to alert voters to the mistake (Fontana and Benjamin 2010). Local network affiliates like ABC's Channel 30 and Fox's Channel 26 devoted stories on their evening news programs to notify voters of the ballot mistake on October 29, 2010, just a few days before the election (ABC 30 Action News Live at 6pm 2010; KPMH Channel 26 2010).¹

The error in Fresno only occurred on the ballots printed in English as the Spanish language ballots were updated properly. In an ideal world, this would present a perfect opportunity to compare the effects due to the differences in the English and Spanish ballots. Unfortunately, the state of California does not collect data on the vote totals for each proposition based on ballot language. Nor does Fresno even keep track of the number of ballots cast in different languages, ergo we lack any concrete empirical evidence to properly estimate any treatment effects beyond the results from the general models that assume all absentee and polling station voters were exposed to the identical treatment for each method of voting—which of course Spanish language voters were not.

¹ We suspect that the local CBS and NBC affiliates also covered the ballot mistakes either that night or at some other time before Election Day because news outlets competing for the same audience tend to cover the same stories (see Hamilton (2004) for a thorough discussion of the market incentives for pack journalism). Unfortunately those stations do not have websites with searchable archives of past broadcasts.

Even though a bare majority of Fresno residents are Latino, 69 % of Fresno citizens speak only English (U.S. Census Bureau 2014). Of those citizens who speak a language other than English, 22 % speak Spanish; however, only 26 % of those citizens speak English “less than very well” (U.S. Census Bureau 2014). Assuming that English only speakers and those who speak English very well would vote using the English ballot, that would translate to just less than 6 % of the potential voting population who would not have been exposed to the treatment (the original ballot language). However, Latinos are not equally represented in the electorate (Lopez 2011) or at the ballot box (Hero and Campbell 1996). Additionally, there is evidence that Latinos are even more underrepresented during midterm elections (Cassel 2002). Considering non-English speaking Latinos are less likely to turnout to vote (DeSipio 1996; Parkin and Zlotnick 2011), the likely percentage of the voting population in Fresno that used Spanish language ballots was undoubtedly quite small and should not impact our estimates very much at all.

The affected language in Proposition 22 represents an issue frame because the new language emphasizes local funding at the expense of the state. Proposition 22 intended to prevent the state government from borrowing from funds that are redistributed to local governments. It declared that the state could not take local revenue intended for transportation, redevelopment or other local projects and services (Secretary of State 2010a). In 2010, lawmakers diverted \$1 billion dollars originally intended for local transportation funding to help reduce the state's enormous budget deficit (Gardner 2010). Proposition 22 was an attempt by many local governments to prevent the state from continuing to raid locally designated funds to reduce the state's enormous budget deficits resulting from the 2008 recession.

The fiscal impact statement as originally written indicated that the state would lose funds as a result of the measure's passage without explicitly stating that the measure's financial gains would go to local government. We consider this to present a “state” funding frame because it focuses the voter's attention on losses in state revenues. The proponents of the measure successfully petitioned the courts to have the word “local” inserted several times into that statement. The fiscal impact summary as ordered by the judge was as follows:

Due to restrictions on state authority over fuel and property taxes, the state would have to take alternative actions—probably in the range of \$1 billion to several billion dollars annually. This would result in both: Reductions in General Fund program spending and/or increases in state revenues of those amounts. Comparable increases in funding for state and local transportation programs and local redevelopment.

In the original fiscal impact summary, the last sentence above instead read, “Comparable increases in transportation and redevelopment resources.” (Fairbanks 2010)

For more than 30 years, citizens have consistently viewed local government as superior to state government when it comes to getting more out of their tax dollars (Cole and Kincaid 2000). The new language emphasizes local funding at the expense of the state and we expect the proposition to get less support in Fresno

County compared to the rest of the state. Fresno County voters were exposed to the more neutral language, while the rest of the state saw the court-ordered changes. Given the state's perennial fiscal problems and the consequences that local governments faced as a result of the state's budgeting maneuvers, we expect voters who were exposed to the court ordered changes to be more likely to support Proposition 22 than Fresno County voters (who were not). For the remainder of the paper, we will refer to this proposition as the Local Funding proposition.

H1 Support for Proposition 22, the Local Funding vs. State Funding proposition, will be lower in areas where voters are exposed to the state funding frame than in areas exposed to the local funding frame.

Proposition 23, on the other hand, would have suspended AB32, the "Global Warming Solutions Act" that was passed in 2006 and mandated California carbon emissions to be capped by 2020 at what their levels were in 1990 (Air Resources Board 2012). Its implementation was set to begin in 2012. There was vocal opposition to AB32 since its initial passage and it coalesced for the 2010 election in the Yes on 23 Campaign. The initial ballot wording proposed by Attorney General Brown referred to beneficiaries of the proposition as "major polluters." It was this language that was considered potentially biasing and the judge ordered this phrase to be substituted in the ballot title by the term, "sources of emissions." It also made clear in the new ballot title that the only law that would be suspended by the measure was AB32, rather than all pollution laws as the initial title implied. The ballot titles before and after the court decision are as follows:

Old ballot label: Suspends air pollution control laws requiring major polluters to report and reduce greenhouse gas emissions that cause global warming, until unemployment rate drops to 5.5 % or less for full year.

New ballot label: Suspends implementation of air pollution control law (AB 32) requiring major *sources of emissions* to report and reduce greenhouse gas emissions that cause global warming, until unemployment rate drops to 5.5 % or less for full year. [emphasis added] (Rogers 2010).

We predict that Fresno County's voters will be less likely to support Proposition 23 compared to the rest of the state. The "major polluters" frame compared to the more neutral language mandated by the court order represents a tone of wording frame. It suggests to voters that the proposed law would benefit polluters whereas the statewide ballot's language is much more subtle. The term 'polluters' has a negative connotation (Farrimond and Joffe 2006) and we expect voters in Fresno County to support Proposition 23 at lower rates than expected, compared to the rest of the state. For simplicity's sake, we will refer to Proposition 23 as the Pollution Law proposition for the remainder of the paper.

H2 Support for Proposition 23, the Pollution Law initiative, will be lower in areas where voters are exposed to the negative frame than in areas where voters are exposed to a neutral frame.

Neither the Local Funding nor the Pollution Law propositions had particularly high levels of public awareness. In a September 2010 Field Poll, only 37 % of

respondents were aware of the AB32 ballot question (Field and DiCamillo 2010).² Unfortunately, neither the environment nor local taxation were included as possible choices in questions about the most important issue facing California in PPIC's polls during the election season. Consequently, we are not able to directly estimate how many Californians were aware of the Local Funding initiative nor whether citizens considered those issues to be important.

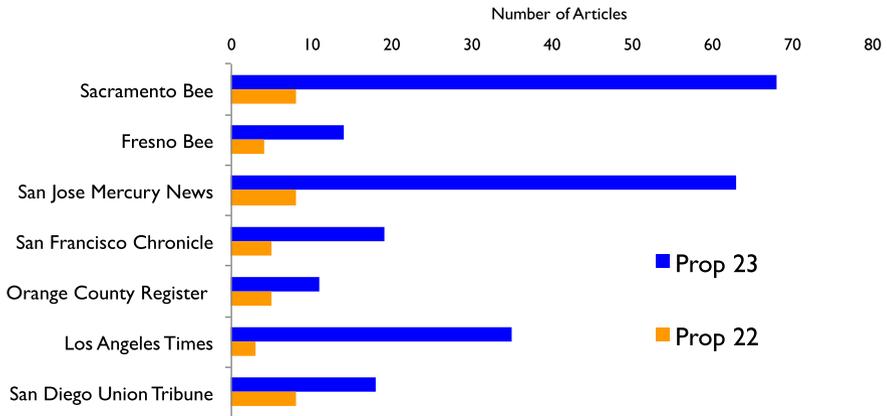
The propositions did vary with respect to their news coverage though, suggesting that one was relatively more salient than the other. Newspaper coverage is a reasonable measure of awareness because editors and publishers have incentives to cover the issues that are considered most interesting to their readers (Hamilton 2004; Smith 2001). Newspapers also influence issue salience by visibly discussing the measure. Regardless of whether newspapers increase issue salience or simply report on those topics that are already of interest, the literature shows that voters tend to be more aware of ballot measures with more media coverage than those with less coverage (Nicholson 2003). Figure 1 shows the number of news stories about each proposition in the state's most popular newspapers (by size of circulation) from July 1 through November 4, 2010.

Perhaps more importantly for our purposes, the two propositions also varied significantly by campaign intensity and we anticipate that the framing effects will differ across both ballot measures. The most widely used and accepted measure of campaign intensity in non-presidential elections is using campaign expenditures (Kahn and Kenney 1997; Smith and Fox 2001; Sulkin 2001). Campaigns for the Local Funding proposition, both for and against, spent a combined total of \$7,598,480, or a mere 32 cents per eligible voter, while the campaigns for the Pollution Law proposition spent a combined total of \$43,844,959, or \$1.86 per eligible voter (Follow the Money 2011). The Local Funding initiative campaigns spent \$5,914,294 for and \$1,684,185 against. Campaigns for and against the Pollution Law initiative spent \$10,669,814 for and \$33,175,145 against (Follow the Money 2011).

We argue that the substantial differences in campaign spending between both measures means that voters were more likely to be exposed to both sides of the Pollution Law debate than the Local Funding one. Previous work shows that voters also tend to be more aware of ballot measures whose campaigns spend more than measures whose campaigns spend less (Bowler and Donovan 1998; Nicholson 2003). Campaigns surrounding the Pollution Law measure spent six times more than the Local Funding measure's campaigns. Furthermore, even though the "pro" Pollution Law's campaigns spent much less than the "con" campaign, the "con" campaign still spent more than all of the Local Funding campaigns combined. Given the difference in media coverage and campaign intensity between the two ballot questions, we expect the frames to differentially affect the election results.

H3 The expected framing effects on the support for the Local Funding initiative will be greater than the framing effects on the support for the Pollution Law ballot question.

² None of the Field or PPIC polls during the election season asked about the Local Funding question.



Note: The total number of each newspaper’s articles on Propositions 22 and 23 in 2010.
 Source: Compiled by the Authors.

Fig. 1 Newspaper coverage of propositions 22 and 23 in 2010

The 2010 California Election: A Natural Experiment

In the natural experiment, we use county-level election results and other data to compare each proposition’s results in Fresno County to their level of success in California’s remaining counties. One advantage of this analytic strategy is that since ballot propositions are statewide elections, any campaign activity is generally held constant across counties. To get more leverage over potential differences of frames in a real election environment to frames in experiments, we also conducted a survey experiment using eligible voters in Duval County, Florida. We discuss that in the following section.

In order to test **H1**, Fresno’s ballot language serves as the “control” group with the state funding frame for the Local Funding proposition, while the rest of California is the experimental group receiving the local funding frame. Fresno will serve as the experimental group in testing our hypotheses about the Pollution Law proposition (**H2**) because the county’s voters were exposed to the negative frame and the rest of the state was exposed to the neutral frame.

Fresno County voters differed not only from the rest of the state in the ballot language, but the treatment levels within Fresno County varied as well. Those who voted in person on Election Day were exposed to signs at the polling station indicating the court-ordered altered language. Unfortunately, there are no data about how many voters saw the signs and there is no information about whether the signs were in places where voters could easily see them. Because of this uncertainty and the fact that the incorrect language on the ballot were the last words the voters saw, we cannot predict the level of impact the frames would have, but we still anticipate some framing effects.

Absentee voters, on the other hand, were not exposed to the “correct” language at the polling stations and we suspect that any framing effects in the propositions

would be greater among that group than among polling place voters. Many Californians take advantage of the state's fairly permissive absentee voting policy. Any registered voter is eligible for an absentee ballot and voters may also sign up as permanent absentee voters, ensuring that their county will mail them an absentee ballot thirty days ahead of any state or local election. In 2010, 48 % of the state's overall voters were absentee while approximately 53 % of Fresno County's voters were (California Secretary of State 2010b). Thus a substantial percentage of Fresno County's population had less exposure to the court ordered changes to the ballot language. To account for potential differences in treatment effects, we run separate models for Election Day polling station voters and absentee voters.

Data

Our dependent variables for the natural experiment measure the level of support each proposition received for polling stations and absentee ballots respectively. We collected the results for each county from the California Secretary of State (California Secretary of State 2010b). Our key independent variable of interest, the measure's support in Fresno County compared to the rest of the state, is measured by a dummy variable equaling 1 for Fresno County and 0 otherwise.

Since the treatment in the California election was not truly randomly assigned, we attempt to control for a number of factors that could affect support for each of the propositions. We also sought to develop a model that would provide a very strong prediction of what Fresno's vote totals "should be" using as many variables that account for political, economic, and demographic factors that could possibly affect support for these two ballot measures. The figures in Table 1 show that the models explain a substantial variation in vote shares across California's counties.

Partisan Indicators

We control for the percentage of each county's voters who are registered as Democrats (California Secretary of State 2010c). As another way measuring preferences, we also include vote shares for all of the partisan statewide races and for other statewide propositions in each the county.

Economic Indicators

Each county's total gross value of agricultural production and the percentage change from 2008 to 2009 (the most recently available data at the time of the proposition campaign) were gathered from the California Department of Food and Agriculture (2011). Each county's unemployment rate as of October 2010 is also controlled for, which was downloaded from California's Employment Development Department's website (2011). We also include a measure of the percentage change in the assessed valuation of property control of each county's redevelopment agency and that data are available from the California State Controller's Office (2010).

Table 1 County level support for local funding and pollution law measures

	Prop 22—local funding (low intensity)		Prop 23—pollution law (higher intensity)	
	Absentee	Polling station	Absentee	Polling station
Fresno	-0.11*** (0.021)	-0.07*** (0.019)	-0.01 (0.014)	-0.01 (0.014)
Democrat	0.38 (0.223)	0.11 (0.188)	0.17 (0.107)	0.10 (0.107)
Latino	-0.00** (0.001)	-0.00 (0.001)	-0.00 (0.000)	-0.00 (0.000)
Median income	-0.00 (0.000)	-0.00 (0.000)	-0.00 (0.000)	-0.00 (0.000)
Female	-0.01** (0.004)	-0.01** (0.003)	-0.00** (0.002)	-0.00 (0.002)
Unemployment rate	0.15 (0.244)	0.01 (0.247)	0.26* (0.120)	0.16 (0.120)
Eligible voters	-0.00 (0.000)	0.00 (0.000)	-0.00 (0.000)	-0.00** (0.000)
Agricultural revenue Per capita	-0.00 (0.001)	-0.00 (0.001)	-0.00 (0.001)	0.00 (0.001)
Percentage change agricultural revenue	0.00*** (0.000)	0.00*** (0.000)	-0.00* (0.000)	-0.00*** (0.000)
Transportation funding per capita	-0.00 (0.001)	-0.00 (0.000)		
Redevelopment: increase of assessed value	0.00*** (0.001)	0.00*** (0.001)		
Cancer rate per 100,000				
Jerry brown governor	-0.83* (0.469)	-0.65* (0.354)	-0.00 (0.000)	0.00 (0.000)
Gavin Newsom Lt. governor	-1.08*** (0.343)	-0.73*** (0.229)	-0.08 (0.231)	0.07 (0.200)
Debra Bowen sec. of state	-0.43 (0.774)	-0.27 (0.704)	-0.23 (0.169)	-0.13 (0.138)
John Chiang controller	0.05 (0.180)	-0.15 (0.180)	0.24 (0.355)	0.07 (0.347)
Loekyer treasurer	0.81 (0.567)	1.09** (0.481)	-0.00 (0.098)	0.04 (0.101)
Harris attorney general	0.20 (0.439)	0.45 (0.325)	-1.06*** (0.221)	-0.84*** (0.243)
Jones insurance comm.	0.76** (0.346)	-0.23 (0.296)	0.05 (0.231)	-0.09 (0.178)
Boxer US senator	0.57 (0.510)	0.73 (0.475)	0.29 (0.186)	0.23 (0.168)
Tortlakson superintendent	-0.26* (0.130)	0.01 (0.11)	0.09 (0.263)	0.09 (0.252)
Proposition 19	-0.25 (0.193)	-0.12 (0.156)	0.05 (0.064)	-0.02 (0.061)
Proposition 20	1.08*** (0.226)	0.52* (0.255)	0.06 (0.093)	-0.02 (0.083)
			-0.11 (0.122)	-0.05 (0.155)

Table 1 continued

	Prop. 22—local funding (low intensity)		Prop. 23—pollution law (higher intensity)	
	Absentee	Polling station	Absentee	Polling station
Proposition 21	−0.55*** (0.195)	−0.27 (0.161)	−0.14 (0.100)	−0.14 (0.083)
Proposition 22			0.07 (0.085)	0.04 (0.090)
Proposition 23	−0.60* (0.350)	−0.11 (0.352)		
Proposition 24	0.38 (0.291)	0.45 (0.351)	−0.03 (0.156)	0.13 (0.193)
Proposition 25	−0.12 (0.327)	−0.47 (0.304)	0.10 (0.178)	0.13 (0.186)
Proposition 26	0.40 (0.271)	0.45* (0.254)	0.35** (0.135)	0.47*** (0.110)
Proposition 27	0.19 (0.272)	0.02 (0.221)	−0.07 (0.146)	0.05 (0.117)
Constant	0.61 (0.427)	0.62 (0.380)	0.86*** (0.163)	0.46** (0.179)
Observations	58	56 ^b	58	56 ^b
Adjusted R-squared	.948	.942	.994	.996

Standard errors in parentheses

^a Analytic weights used to balance county size variation

^b Two counties in California (Alpine and Shasta) conduct elections by mail only

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$ in a two tailed test

Demographic Indicators

We include the percentage of eligible voters per county, available from the CA Secretary of State's website. Also, the percentage of Latinos in each County, available from the U.S. Census Bureau is included. Statistics on the median household income for a family of four in 2010 were available from the U.S. Department of Agriculture's Economic Research Council (2011). We also used each county's level of transportation funding, available from the state's Controller's office. For the Pollution Law proposition, we controlled for cancer rates per 100,000 people, obtained from the National Cancer Institute (2012).

Natural Experiment Results

We find mixed support the hypotheses in our analysis of the California election results. We test **H1** and **H2** using an ordinary least squares multivariate regression that includes a dummy variable for Fresno County. Table 1 presents four comprehensive models. The dependent variables for the first and third model use county level Election Day polling station support for the ballot questions during Election Day voting at the polling stations. The second and fourth models use county level absentee ballot support for the two propositions.

As expected, we see stronger framing effects among absentee ballots than the polling stations. The absentee voters in Fresno were less likely to support the Local Funding initiative compared to other counties in California. The coefficient for the Fresno dummy variable (-0.11) is statistically significant at the $P < .001$ level. Polling station voters in Fresno still show a statistically significant drop in support (-0.07) for the proposition, but the coefficient for the Fresno dummy variable is about 50 % smaller than the size of the absentee model. Models measuring support for the Pollution Law measure (Models 3 and 4) follow a very different pattern. Fresno County's coefficients are very small and not statistically significant for either the Fresno absentee or the polling station model of Proposition 23—Pollution Law.

We argue that the difference in support for the Local Funding initiative in Fresno, along with the variable effects between absentee voters and Election Day voters indicates that frames can affect election results. It also suggests voters got some of the message about changes in the propositions' language. We do, however, acknowledge that we are not able to measure the extent to which County employees faithfully implemented the County Clerk's instructions about alerting voters to the ballot language corrections at polling stations.

For our second test with the California county level election returns, we compare the expected values of Fresno County's vote share in support of the propositions to the actual election returns for both the polling station and absentee ballots. The predicted level of support for Proposition 22 was over 74 % for absentee ballot and 70 % for polling station votes, yet the actual 'yes' votes in the election returns were substantially lower, approximately 64 % for each. Table 2 shows that Proposition 22 did more than ten percentage points worse in the absentee ballots than expected and nearly seven percentage points worse at the polling stations. These differences are significant at the $P < .05$ level using a one-tailed test. The absence of the

Table 2 Framing effects in a natural experiment

	Proposition 22 absentee ballot	Proposition 22 polling station	Proposition 23 absentee ballot	Proposition 23 polling station
Actual support	64.11	63.47	46.28	48.45
Predicted support in Fresno County	74.47	70.16	45.48	48.98
Difference	-10.36*	-6.69*	.80	-.47

Table entries are percentage of support for the proposition

* $p < .05$ in a one-tailed test

“local” frame in Fresno County significantly reduced backing for the Local Funding initiative, supporting **H1** and adding credence to the claims that the framing of ballot measures can have a substantial impact on the outcome of elections.

The test of **H2** in Fresno County shows no meaningful difference (less than a single percentage point) between the expected vote share for the Pollution Law measure and the actual election returns. Our prediction that the frame “major polluters” would reduce support for the initiative was not realized in Fresno. Two of the most plausible explanations for this result are either A) the frame “major polluters” is not an effective frame or B) the voters had other information that reduced the effect of this frame. The survey experiment results negate the possibility that the “major polluters frame” is ineffective. Subjects exposed to that frame in the survey experiment were significantly less likely to support the measure compared to the group exposed to the “sources of emissions” language.

The 2012 Florida Version: A Survey Experiment

In order to shed light on the effectiveness of the two different frames that occurred in these ballot measures, we conducted a survey experiment to test each frame’s effectiveness in a neutral, campaign-free environment. The survey experiment was conducted in Duval County, FL using registered voters to test for the potential of framing effects in a more controlled environment. The experiment provides us an opportunity to give a group of randomly selected respondents one version of the ballot wording and a different group of randomly selected respondents a different version of the ballot title. A simple comparison of the mean support levels for each of the propositions allows for a test of both **H1** and **H2**.³

³ Duval County, Florida is not particularly different than Fresno County, California. Both counties have a population approaching one million residents, have similarly aged adult populations, median household incomes, homeownership rates and both counties were competitive in the 2012 presidential election (U.S. Census Bureau 2012; U.S. Census Bureau 2013). Even though Fresno has a bare majority of Latinos, compared to Duval’s predominately white population, there is evidence that Latinos do not disproportionately come out on the losing end of ballot measures (Hajnal, Gerber, and Louch 2002). In the fall of 2011 when the survey experiment was conducted, Duval was different from Fresno in one distinct way; Duval voters were not exposed to any of the campaign activity from the 2010 election in California. Duval County can thus serve as an appropriate laboratory to test the effects of frames in a controlled experimental environment, relative to a real life campaign.

Voters in direct democracy states are often faced with multiple policy choices and numerous candidates from different levels of government competing for their attention on any given ballot. Multiple races competing for the voters' attention on a single ballot increase the level of cognitive effort required to make decisions. In an effort to replicate the Election Day experience, respondents were asked a series of policy related questions (how to handle the national deficit) and candidate preference questions (presidential match ups with prospective Republican challengers and President Obama). Having respondents think through a series of these other political choices helps mimic the experience of going through a ballot and adds to the comparability of our survey results and the election results in Fresno.

The benefits of using experimental survey data are random assignment of respondents and easy interpretation of results. The survey experiment comparison uses one random selection of respondents as a control group (receiving the "state funding" frame for the Local Funding measure and the neutral "major sources of emissions" frame for the Pollution Law measure) and a second set of respondents (for each proposition) as the experimental group that is given the treatment frames ("local" for the Local Funding ballot question and "major polluter" for Pollution Law).

The survey conducted in Duval County, Florida was in the field from November 7th–15th, 2011. There were 120 University of North Florida political science undergraduate students that collected 574 completed interviews that took an average of 9 min. The survey was conducted through the use of Computer Assisted Telephone Interviewing (CATI) at a 27-station polling laboratory at UNF. A sample of the polling universe was selected through the use of Random-Digit-Dialing methodology. An additional cell phone sample was used to increase representation as well as an overlay sample from census tracks that had more than 30 % African-American residents. The response rate for the survey was 13.9 %.⁴ Gender and ethnic origin are weighted to statistics from the Supervisor of Elections for Duval County Registered Voters.⁵

Survey Experiment Results

The survey was conducted in the fall of 2011 in Duval County, Florida where there had not been any elections or public discourse dealing with the issues addressed in our ballot measures. Thus, this was conducted in an area where the political information environment with respect to these issues was limited. The differences in ballot language affected each proposition's support in the expected directions. Table 3 presents the results of the survey experiment. Support for the Local Funding measure is positively affected by the addition of the word "local" to the description of the ballot measure. The 7.64 percentage point increase is statistically significant at the .05 level in a one-tailed test. Support for the Pollution Law measure is reduced by the addition of the frame "major polluters", which dropped the support levels by

⁴ The response rate (Response Rate 4) was calculated according to AAPOR's Standard Definitions (American Association of Public Opinion Researchers 2011).

⁵ Weights range from .82 to 1.91. For non-completes with a working residential and/or cell phone line, up to 5 callbacks were attempted. To ensure a representative sample, calls were made from 5:00 p.m.—9:00 p.m. Monday through Friday and from 10 to 2 on Saturday.

Table 3 Framing effects in survey experiment

	Proposition 22: issue frame	Percent support	Proposition 23: negatively toned frame	Percent support
Frame	“Local”	51.87	“Polluters”	40.18
Neutral		44.23	“Sources of emissions”	48.60
Difference		7.64*		-8.42*

Table entries are percentage of support for the proposition

* $p < .05$ in a one-tailed test

	Proposition 22	Proposition 23
California General Election November 2010	Limited Campaign Frame has Significant* Effect	Active Campaign Frame has No Effect
Florida Survey November 2011	No Campaign Frame has Significant* Effect	No Campaign Frame has Significant* Effect

Note: * $p < .05$ in a one-tailed test.

Fig. 2 Campaign activity and framing effects

8.42 percentage points, also statistically significant at the .05 level in a one-tailed test.

Granted, the method of testing the framing effects varied: an actual ballot during a real election compared to a survey conducted on the telephone. However, we do not think that mode effects between a real election and a telephone survey could account for the varying results. Rather, it is the intensity of the campaigns across the different experimental context that seems to matter most. Additionally, if there was a mode induced effect, that effect should have influenced both frames similarly. Consistent results for the “local” frame used in the Local Funding question (see Table 2) establish stability across methods (predicted vote share during elections compared to a survey experiment). Both the survey experiment and predicted Fresno vote shares in Table 2 suggest that the “local” frame increased support for Proposition 22. Conversely, the Pollution Law proposition showed a significant decrease in support when the “major polluters” frame was used in the survey experiment. Since H2 was supported by the survey experiment when there was no campaign activity, we argue that this further suggests that the variation in campaign activity during the elections in 2010 is the reason we see differing results between the election (see Table 2) and survey experiment for the Pollution Law measure. Figure 2 is a two by two diagram that presents the level of campaign activity and the resulting effects of the frames. Our results across the two methods provide valuable support for H3 and suggest that campaigns can mitigate the effects of frames on ballot propositions.

Conclusion

This study builds upon previous work on framing by testing frames in a survey or “laboratory” setting and taking it further by measuring whether those frames affected election results using a natural experiment in California. Proposition 22, the

Local Funding measure, had a difference in issues frame while the Pollution Law measure (Proposition 23) featured a tone of wording frame, and they worked as theorized in the survey experiment. Support for the propositions fluctuated significantly between the competing frames in our survey experiment.

However, only one frame significantly affected the outcome in Fresno County during the 2010 election. In the Local Funding measure, Fresno County voters exposed to “state funding” language frame (both absentee and polling station) were less supportive of the measure. The differences were greater among absentee voters since they voted before Election Day and were not exposed to the “local funding” frame. Conversely, Fresno County voters showed no difference in their support for Proposition 23, the Pollution Law, than the rest of the state.

The second test of the California data extended the first series of tests and showed discrepancies between the predicted levels of support for the Local Funding measure and actual election returns. Similar to the first series of regressions, the Local Funding measure’s support in Fresno was much less than its predicted support, suggesting that it would have done better if voters in Fresno were exposed to the court-ordered language. The “major polluter” frame in Proposition 23 showed no substantive effects in the second test either. We do not see an appreciable difference in support for the Pollution Law in Fresno compared to its predicted level of support.

The differences between the experimental and observational results suggest that the reason why we see support for **H1** and not for **H2** (i.e. there appears to be a framing effect for Local Funding measure and not the Pollution Law) in the natural experiment is the difference in campaign intensity between the two campaigns. Campaigns for and against Proposition 23, the Pollution Law question, spent six times more money per eligible voter than campaigns for and against the Local Funding question (Proposition 22). We argue that the differences between the two experiments is due to the differences in campaign intensity surrounding the two campaigns and the impact that ballot language frames have on our voting decisions is mitigated by campaign intensity.

If, as we argue, frames have greater impacts in elections that are relatively less intense than those that get more campaign activity, ballot propositions are the elections that would appear to benefit voters most from increased campaigning. Proposition races are typically low information affairs (with the exception of some propositions like Proposition 23, Proposition 8 in California in 2008 or the famous California Proposition 13 decades ago) and consequently voters may be more susceptible to framing effects in campaign rhetoric or ballot language than other elections where citizens have more information about their choices going into the election cycle. Framing effects are difficult to study in a campaign environment using observational methods, but our research should provide scholars with some optimism that either with fortunate circumstances or clever designs, researchers could replicate experimental results in the “real world.” We hope that future research will continue to explore this phenomenon.

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