**Forecasting Issue Elections through Message Testing**

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**Abstract: Election forecasting uses a wide variety of strategies including historical voting patterns, election cycles, key economic conditions or political events, candidate qualities and financing, expert opinions, betting markets, and pre-election polling based on voter intentions or voter expectations. Campaign managers and pollsters often use another strategy, the message testing strategy, in which poll respondents first answer an “uninformed” heads-up voter intention question, then followed by several questions that test possible campaign messages, then followed by another “informed” heads-up voter intention question. How well the message testing strategy forecasts election outcomes has never been analyzed. This paper uses a matched-pair design to compare the forecasting ability of uninformed versus informed poll questions by using 39 polls from 20 state and local elections on tobacco controls. The results here show that the message testing strategy improves forecasts during an election campaign’s early stages.**

Accurately forecasting upcoming election results is no simple task. Forecasters now make predictions about a wide variety of elections and in many different ways. The most common types of elections forecasts include shares of legislative seats won by the parties, the percentage of votes won by major party candidates, the winning candidate, or less frequently the share of votes in issue elections. The predictors used in forecasting also vary widely, and commonly include historical elections, betting markets, current events such as the economy or wars, incumbent popularity, expert opinions, and poll preferences or expectations. A frequent finding is that combining predictors improves forecasting accuracy. Forecast accuracy may also be reported in different ways including the percentage of correct predictions, R-2 estimates, or the percentage reduction in error. As well, forecast accuracy may be measured as of a specific date such as of the two to four months before the election day, over a much longer time period before and up until the election day, or for only within a few weeks or months before the election day.

Many forecasts use voter preference poll questions, at least as a baseline comparison. Doing so allows a test of whether other forecasting methods, taken alone or in addition to voter preference questions, can improve election forecasts. Graefe, et al. (2014a, 2014b, 2014c, 2015) reviews the recent evidence. Forecasts that are based on voter preferences rely on a particular type of poll question, the so-called “uninformed” heads-up question. In this format a respondent is simply asked to give his or her preferred voting choice without being provided with any information other than the candidates’ names and, if applicable, political party. For an issue election a poll respondent is asked whether he or she favors or opposes an upcoming ballot issue that is only briefly and impartially described. No other information is provided that might influence a voter’s choice between candidates or issue either within the heads-up question itself or prior thereto. A common problem with these seemingly unbiased poll questions is that they do often not yield particularly accurate forecasts during the early campaign although their forecasts become more accurate as the election date nears (Campbell and Wink 1990; Erikson and Wlezien 2002, 2012; Jennings and Wlezien 2016).

**The Message Testing Strategy**

In-house campaign pollsters routinely use a variety of poll question formats other than the uninformed heads-up question. For example, an in-house campaign poll may ask respondents to choose between hypothetical or unnamed candidates described in some manner. Or, a campaign pollster may provide descriptions of the named candidates’ backgrounds or issue positions within a heads-up question, often using a split-ballot format. In-house campaign pollsters also frequently incorporate a message testing strategy in their polls (Tringali 2012). In this approach the survey first asks an “uninformed” heads-up poll question very early during the survey. Then follows a series of message testing questions, most of which usually provide explicitly negative information about the opposing candidate or issue (commonly called “push” questions) but some of which provide positive information about the opposing candidate or issue (“pull” questions). These questions often use a “*what if you knew*” or “*what if you heard*” format.[[1]](#endnote-1) Then follows a version of the earlier uninformed heads-up question commonly called an “informed” heads-up question. Very often a significant number of voters will change their minds during the survey itself.

This three-part sequence of poll questions provides several useful types of information. The earlier “uninformed” heads-up question measures existing public opinion at the time of the poll. The intervening message testing questions identify the strongest and most powerful campaign messages for campaign advertising, appearances, endorsements, and debates (Tringali 2012: 119-123).[[2]](#endnote-2) The later “informed” heads-up question forecasts how a better-informed (or in campaign pollsters’ parlance: “educated”) electorate might choose between the candidates or issues. In campaign management the informed heads-up question is usually treated as a forecast.

This three-part sequence of questions distinguishes message testing from many other surveys. For example, the 2016 American National Election Stud (ANES) Time Series Pre-election questionnaire early in the questionnaire asks heads-up questions about a respondent’s presidential, U.S. House and Senate, and governor preferences; then follows with several questions, some on timely issues; but neither phrases these issue questions explicitly in terms of the candidates nor later asks any informed heads-up questions. Likewise, most of the surveys reported on the on-line RealClearPolitics site early in the questionnaire ask an uninformed heads-up question, then sometimes follow with issue or candidate questions, some of which might be considered as push or pull questions, but that site does not report the results of later informed heads-up questions.

The message testing strategy is not new and is widely used to identify persuasive communications messages (Capella, Yang, & Lee 2015; Rimer & Kreuter 2006; Wilson 2000). Message testing can be applied to different types of persuasion campaigns and to different media strategies (Austin and Pinkleton 2006: 297-327; Jordan et al. 2012; McGuire 1989; Noar 2006). Message testing has been used in elections at least since the mid-1970s in early (“baseline” or “benchmark”) and in mid-season (“brushfire”) campaign polls when campaign strategy is still being formulated (Stonecash 2008: 43-5; Tringali 2012; Wilson 2002). Regrettably, campaign managers, pollsters, and candidates seldom publicly discuss, provide, or publicly archive their private campaign polls, and particularly not so their message testing questions and the informed heads-up results. As a result, there are apparently no published accounts of whether, how much, or under what circumstances an informed heads-up question will be a better forecast than is an uninformed heads-up question. This paper is the first to examine the message testing strategy.

**Message testing versus push polling** Message testing relies heavily on “push” questions but should not be confused with push polling. Message testing is widely used in marketing and political surveys and, unlike push polling, is not one of the American Association for Public Opinion Research’s condemned practices. In message testing the individual “push” (or “pull”) questions are typically developed through focus groups, open-ended questions, or past surveys. Message testing typically involves a three-part sequence of questions within a longer survey, often asked of six hundred to a thousand randomly-chosen respondents. In the 39 surveys herein this population was always registered voters in a state or large city or county. By contrast, a push poll is a telemarketing strategy aimed at a large number of likely voters typically just before an election day. A push poll is typically short, often including only five to ten questions, and with few if any questions other than the uninformed heads-up question, the push questions, and the informed heads-up question. The AAPOR condemns the practice of push polling.

**A Note on Tobacco Control Elections**

Media attention to and public awareness of the health risks of smoking increased rapidly during the 1950s and 1960s as a result of several high-profile scientific exposes and the landmark 1964 U.S. Surgeon General’s Advisory Committee report on smoking (Marshall 2016; Pacheco 2011, 2012, 2013; Roeseler and Burns 2010; Studlar 2002). Even so, Congress, the federal agencies, state legislatures and agencies, cities, and counties enacted very few meaningful limits on cigarette smoking soon thereafter. By the mid-1970s tobacco control advocates, frustrated by this inaction, increasingly turned to statewide and local issue elections as a way to bypass reluctant or even tobacco-friendly elected officials and agencies.[[3]](#endnote-3) About half the American states and most American cities allow citizen-initiated issue elections, commonly called a referendum (if the election is to uphold or overturn a state law or local ordinance already passed) or an initiative, measure, proposition, or amendment, if the election is held to enact a new state law or local ordinance. By time, place, objective, and outcome the 39 surveys and 20 elections herein range from Proposition 5, a failed 1978 California statewide election to limit indoor public smoking to a 2002 successful Florida statewide election limiting indoor smoking in workplaces.

Cigarette manufacturers and allied groups, particularly the Tobacco Institute, sought to defeat many of these ballot initiatives. In so doing the tobacco industry commissioned high-quality pollsters to conduct numerous pre-election surveys.[[4]](#endnote-4) Thirty-nine of the tobacco industry’s polls used a message testing strategy.[[5]](#endnote-5) The industry’s polling was originally kept private, but as a result of prolonged litigation eventually became publicly available through the on-line Truth Tobacco Documents Library archive.

Tobacco control elections are a relatively predictable set of issue elections, in some ways similar to the better-studied sports facility referendums (Paul and Brown 2001, 2006; Schaffner, Streb, and Wright 2001).[[6]](#endnote-6) Tobacco control elections are nonpartisan and for a given state or locality occur only sporadically although are typically high profile when they do occur (Samuels and Glantz 1991). The tobacco industry typically heavily outspends tobacco control supporters, just as sports team owners typically outspend stadium opponents (Stratmann 2006). Elected officials; community, health, and business leaders; and the news media often publicly support one side or the other in these elections. Both the tobacco industry and tobacco control advocates often conduct public opinion polls to guide campaign strategy. Large poll shifts during issue election campaign are common (Bowler and Donovan 1994; Lupia 1994). Tobacco control elections also vary in their outcomes. Tobacco control advocates won 60% but lost 40% of these 20 elections.[[7]](#endnote-7) Election day voter support for the tobacco control side ranged from a low of 37% to a high of 74%. A few variables strongly predict the election outcome for both tobacco control elections and sports facility referendums. For explaining tobacco control election outcomes the best-fit two-variable prediction model includes the degree of elite support for the tobacco control position and whether another major election was held on the same day.

**Data Sources** This matched-pair research design is based on an unusual publicly available archive of campaign polls and related memorandums, letters, and reports originally conducted for major cigarette manufacturers and their trade associations (usually the now-defunct Tobacco Institute) in statewide and local tobacco control elections between 1978 and 2002. The tobacco industry conducted many campaign polls of which 39 polls in 20 separate elections followed the three-part message testing strategy and asked an uninformed heads-up poll question, followed by several message testing questions, then followed by an informed heads-up question.

**Research Design, Variables, and Hypotheses**

For each of these 39 pre-election polls the results of both the uninformed heads-up question and the informed heads-up question were compared with the final election result and treated as a forecast. The matched pairs of uninformed versus informed questions are identified from archived poll reports; data files are not available for these surveys. Seven hypotheses are offered, described, and tested. Some of these hypotheses are strongly based in the existing literature while others are offered more speculatively.

**Hypothesis One: message testing produces significant preference shifts between the earlier uninformed poll question and the later informed poll question**. This hypothesis is based on the extensive literature showing that priming, question order effects, and information effects significantly affect survey responses (e.g., Erikson and Wlezien 2012: 8-10; Hillygus and Shield 2008; Schueler & West 2016; Sides 2015). Message testing provides admittedly selective information designed to influence (or as pollsters would say: “educate”) respondents. Since individual data files are not available, this hypothesis focuses on net poll shifts.

This hypothesis is strongly supported. Message testing significantly affects voter preferences. Overall, poll support for the tobacco control side dropped an average of 9.2% between the uninformed and informed questions. Support for the tobacco industry rose by an average of 8.4%. The combined percentage of undecideds, refused, and don’t knows was little changed, rising an average of only one percent (with standard deviations of 7.7%, 7.2%, and 5.4%, respectively). For the tobacco control side and the tobacco industry side average poll support was significantly different at the .001 level. Described otherwise, poll support for the tobacco control side dropped 36 of 39 times and rose only three times. Poll support for the tobacco industry side rose 34 of 39 times. The percentage of undecideds, refused and don’t knows dropped 14 times, was unchanged 4 times, and rose 21 times. In short, as hypothesized, message testing produces large net opinion shifts.

**Hypothesis Two: Switching preferences depends on the number of anti-tobacco control message testing poll questions or the ratio between pro- and anti-tobacco control poll questions**. Two versions of this hypothesis are tested. The first version predicts that the more push questions reflecting the tobacco industry’s arguments, the more often respondents will switch to the pro-tobacco industry position on the informed heads-up question. The second version predicts that position switching is influenced by the ratio between pro- and anti-tobacco control push questions. Typically, the number of anti-tobacco control push questions is much greater than the number of pro-tobacco control push questions in these polls, with an average of 5.3 questions favorable to the tobacco control side and 14.5 questions favorable to the tobacco industry, a 2.7-to-1 ratio.

Neither version of this hypothesis finds much support. Although net poll changes between the uninformed and informed heads-up questions were common, these shifts were neither significantly related (at the .05 level) to the number of anti-tobacco control push questions nor to the ratio of pro- versus anti-tobacco control questions.

**Hypothesis Three: Informed heads-up poll questions better forecast the election outcomes than do uninformed poll questions.** This key hypothesis directly tests the forecasting efficacy of message testing. The results of either the uninformed or informed heads-up question is compared to the actual election results, and a percentage forecasting error (compute as the percentage difference between the poll result and the election result) is generated separately for the uninformed and informed questions.

This hypothesis was strongly supported. Informed heads-up questions are significantly better predictors of the election results for both the tobacco industry and tobacco control sides. For the tobacco control side the forecasting error averaged 10.9% on the uninformed heads-up question but only 7.4% on the informed heads-up question. For the tobacco industry the forecasting error averaged 15.6% on the uninformed heads-up question but only 9.0% on the informed heads-up question. This is a reduction in error of 32% for the tobacco control side and a reduction in error of 42% for the tobacco industry side.

Described otherwise, the informed heads-up question better forecast the election results 74% of the time for the tobacco control side and was worse 26% of the time. For the tobacco industry the informed heads-up question yielded better forecasts 74% of the time, was worse 18% of the time, and was the same as the informed heads-up question 8% of the time. In terms of forecasting the election-day (percentage) vote margin between the two sides correctly, the informed heads-up question was the better predictor 83% of the time; the uninformed heads-up question was better 12% of the time; and both performed equally well 5% of the time. That the informed heads-up question is by far the better forecasting choice suggests that it is useful to examine further why it yields better forecasts. The three remaining hypotheses examine variations in forecasting success.

**Hypothesis Four: Informed heads-up questions yield less biased forecasts of election results than do uninformed heads-up poll questions.** Pollsters and poll aggregators often examine whether, how much, and why pre-election poll results are consistently biased in one direction – that is, whether certain polls consistently over- or under-estimate electoral support for one party’s candidates. This hypothesis predicts that the informed heads-up question yields less biased forecasts than does the uninformed heads-up question. [[8]](#endnote-8)

This hypothesis is also strongly supported, The informed heads-up questions provide much less biased forecasts than do uninformed heads-up questions. For the tobacco control side the uninformed heads-up question generally *over*estimates net election-day support, doing so in 33 of 39 instances, with large net *over*estimates averaging 8.5% with a standard deviation of 10%. While the informed heads-up question also usually *over*estimates net election-day support for the tobacco control side, doing so 26 of 39 times, the net forecasting error is much smaller, with an net average *under*estimate of only .7% and a standard deviation of 10%.

A similar result occurs for the tobacco industry side. The uninformed heads-up question almost always (37 of 39 times) *under*estimates net election-day support for the tobacco industry and by an average of 15.6% with a standard deviation of 9.3%. The informed heads-up question also *under*estimates net election-day support for the tobacco industry, doing so 34 of 39 times, but *under*estimates net election-day support by an average of only 7.1% with a standard deviation of 8.9%. In short, the informed heads-up question yields decidedly more accurate and less biased forecasts.

**Hypothesis Five: Informed heads-up poll questions yield the better forecasts prior to the active campaign stage but not thereafter.** Pre-election polls almost always better forecast the election result as the election date nears and as voters become more aware and better informed on the candidates or ballot issues (Erikson and Wlezien 2002, 2012; Jennings and Wlezien 2016). The 39 polls here were conducted over a wide variety of time since the tobacco industry conducted its early polls as soon as an election seemed likely (Marshall 2016: 90-95). For the baseline and brushfire polls considered here the average number of days between the poll and the election date is 161 days with a standard deviation of 111 days. This allows a test of when the message testing strategy works best. As a caveat, the tobacco industry did not include message testing questions and an informed heads-up question in its last rounds of tracking polls.

Two alternative versions of this hypothesis are tested. The first version compares the forecasting gain in accuracy to the number of days between the poll and the election date. The second version simply uses a dichotomous measure – that is, whether campaign advertising had actively begun or not, coded 1 if campaign advertising has begun, otherwise 0. In the first versionvoter learning is treated as a steady and continuous process; in the second version voter learning increases only when the campaign is actively underway as measured by the start date or radio, television, and direct mail advertising.[[9]](#endnote-9) In the first version the informed heads-up question is predicted to lose its advantage gradually; in the second version the informed heads-up version loses its advantage after the start of campaign advertising since message testing provides less new information.

The first version of this hypothesis was not supported but the second version was strongly supported. The Pearson correlation between the number of days for the poll’s improved accuracy and the election date was only .12 for the tobacco control side and .14 for the tobacco industry side, neither correlation significant at the .05 level.[[10]](#endnote-10) However, the second version was strongly supported. For the tobacco control side the informed heads-up question better forecast election-day support than did the uninformed question 77% of the time prior to the active campaign but only 25% of the time thereafter. For the tobacco industry side the informed heads-up question yielded better forecasts 83% of the time prior to the active campaign, but only 50% of the time thereafter. In short, message testing improves forecasting prior to the start of the active campaign but not thereafter.

Described otherwise, before campaign advertising was up and running the average forecasting error for the tobacco industry was 13.7% on the informed heads-up question but only 8.1% on the informed heads-up question. When the campaign was active those figures were 9.7% and 8.4%, respectively. This is a reduction in error of 43% prior to the active campaign but only 13% thereafter. For recent comparisons using a reduction-in-error approach, see Graefe et al. (2014a, 2014b, 2014c, and 2015). By this standard the uninformed heads-up question much better forecasts the vote results before campaign advertising begins, but not so much during the active campaign.

**Hypothesis Six: The more similar the ratio of pro- versus anti-tobacco control questions is to the ratio of pro- versus anti-tobacco control campaign spending, the better will be the informed heads-up questions forecasting ability.** So far the results show that message testing provides much better and less biased forecasts until the active campaign begins. The sixth hypothesis expands on the prior hypothesis by examining the ratio between the favorable (for the tobacco control side) to unfavorable message testing questions, as compared to the ratio of campaign spending between the pro-tobacco control side and the tobacco industry side.[[11]](#endnote-11) This hypothesis predicts that when the message testing question ratio is similar to the campaign spending ratio, message testing will have its greatest advantage.[[12]](#endnote-12)

This hypothesis finds little support, however. A similarity between the ratio of pro- and anti-tobacco control message testing questions, as compared to the ratio of pro-to-anti-tobacco control sides’ campaign spending failed to significantly explain improved forecasting accuracy on the informed heads-up question. The Pearson correlation was only -.02 for the tobacco control side and .02 for the tobacco industry side; neither was statistically significant.

Expanding on these results, what, then, is the optimum number of push questions that best predicts the election-day results? No strong or linear relationship appears between the mix of message testing questions and the superiority of the heads-up question. An optimum improvement in forecasting results from a two-to-one ratio of anti- to pro-tobacco control questions with about six anti-tobacco control questions and three pro-tobacco control questions.[[13]](#endnote-13) Adding more push questions beyond this point, whether anti- or pro-tobacco control, neither improves nor worsens pre-election forecasting for either the tobacco control side or the tobacco industry side. In short, relatively few message testing questions will produce an average increase in forecasting accuracy and at a relatively low cost.

**Hypothesis Seven: The informed heads-up poll question improves election forecasts independent of election-specific circumstances.** The final hypothesis tests whether any of six election-specific variables explain the superiority of the informed heads-up question. These variables include the year of the election; whether the election was statewide or local (that is, in a large city or county); the percentage of initially undecided respondents (on the uninformed question); whether the election involved a tax hike versus a public smoking ban; whether another major election was held on the same date as the tobacco control election; and the level of elite support for the tobacco control side among community leaders, elected officials, and the media. Several of these variables, particularly the level of elite support and whether another major election was on the ballot, explain election-day support for the tobacco control side. If none of these variables mediate the superior forecasting ability of the informed heads-up question, it would indicate that message testing has a forecasting benefit independent of the specifics of an election.

This hypothesis is strongly supported. Only one variable, the percentage of undecideds on the uninformed heads-up question, was significantly (and negatively) related to the informed heads-up question’s superior forecasting accuracy, only barely so (at the .05 level), and only for forecasting the tobacco control side’s election-day support. Otherwise, none of these election-specific variables significantly explains the informed heads-up question’s superior performance either for the tobacco industry or the tobacco control side. In short, the message testing advantage is not a byproduct of any election-specific variables.

**Conclusion and Discussion**

Although message testing is well-established and widely used among campaign pollsters, its usefulness as a forecasting tool has never been systematically examined. This paper shows two results. First, message testing and the so-called informed heads-up question provide more accurate and less biased forecasts early in the election process. The reduction in error at this time compares favorably to the reduction in error achieved by other forecasting methods. This is particularly important since voter preference poll results from long before election day are often inaccurate as forecasts. This may also be useful since other forecasting methods, such as betting markets or expert opinion are seldom if ever available in state and local issue elections. Second, once campaigns roll out their advertising campaigns, the message testing advantage declines. Again, improved forecasting is an issue completely separate from whatever messaging benefits campaign managers may glean from the message testing questions themselves.

Using message testing as a forecasting tool is a relatively low-cost although not a cost-free strategy. Uninformed heads-up questions are already a standard feature of pre-election polls. Incorporating the message testing strategy requires adding only a handful of message testing questions plus an informed heads-up question. This involves some additional costs, likely several thousand dollars for live-call telephone surveys of six hundred to a thousand respondents, but is probably less costly for on-line surveys.

How different types of pollsters or forecasters would evaluate the message testing strategy will vary. For pollsters working on elections or public relations campaigns, message testing has clear advantages and is already widely used. For independent public-release pollsters and for pollsters such as the ANES who accept public funding, the tradeoff may be unacceptable. Poll aggregators would probably benefit from using informed heads-up poll results, especially early during an election campaign; admittedly, however, the results from informed heads up questions are now seldom available and if available should certainly be kept separate from the uninformed heads-up poll results. Media pundits seldom, if ever discuss the message testing strategy either before or after election day, but for the pundits doing so might be very helpful. Academic forecasters have not yet begun to incorporate poll results from message testing into either their forecasting research on candidate elections so that it is difficult to know whether adding this information to combined forecasting models that use other predictors would be of benefit.

As a caveat, these results are not without some limitations. This is only a first look at the usefulness of message testing in forecasting election results, and no evidence from candidate elections or from other types of issue elections is now available. Tobacco control elections are an important type of elections and somewhat similar to the better-studied sports stadium elections. Even so, whether the results herein would be similar to other types of issue elections such as marijuana legalization, minimum wage hikes, or same sex marriage is unclear. More information would also be welcome on candidate elections. Arguably, issue elections allow an easier test of the message testing strategy since a candidate’s personal behavior or campaign season performance is not of concern in issue election and because the pros and cons of a ballot issue may more easily be identified early in the campaign as compared to candidate elections. On the other hand issue campaigns are always nonpartisan and party labels strongly influence voter choice in high-profile partisan candidate elections.

Better evaluating the forecasting advantages of message testing seems most likely to be done in one of two ways: either prospectively with on-line surveys or else by accessing the polling archives of candidates and parties. On-line surveys would very likely reduce the costs of evaluating the message testing advantage as compared to live-call telephone interviews, and better allow a study of exactly why message testing yields better forecasts. For example, does improved forecasting accuracy chiefly result from respondents’ increased recall and cognitive access or from adding completely new information? As an alternative strategy many campaign pollsters and interest groups already have existing privately-held collections of message testing campaign polls that might be mined. To summarize: message testing provides more accurate and less biased early election forecasts and merits further inquiry.

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1. In a January 1990 Montana survey, for example, the tobacco industry’s several push questions included these questions: “*There are far more important programs to be funded with a cigarette tax than anti-smoking education programs*.” (agree or disagree); “*If you knew that the proposed cigarette and tobacco tax would increase cigarette sales on Indian reservation stores that don’t pay taxes thus hurting small Montana grocery stores, would you favor or oppose the initiative?*” and “*If you knew that the proposed cigarette and tobacco tax initiative would provide $1.7 million per biennium to pay staff for a new state commission to oversee the spending of the cigarette and tobacco tax dollars, would you favor or oppose this measure?*” An example of a pull question was: “*If you knew that $6 million of the proposed cigarette and tobacco tax would be used each biennium to fund prenatal care for the poor, would you favor or oppose the initiative?*” See also Moon, Males and Nelson (1993). [↑](#endnote-ref-1)
2. Since at least the mid-1980s campaign pollsters have frequently performed a statistical analysis such as a beta score to compare responses on an individual’s responses to push questions with either choices on the informed heads-up question or switching of preferences between the uninformed and informed heads-up questions (Tringali 2012: 119-123). [↑](#endnote-ref-2)
3. According to Ballotpedia, the earliest state-level tobacco control elections, usually held to raise taxes on cigarettes, first occurred in the 1920s during a much earlier anti-cigarette protest movement. The number of all statewide initiatives and referendums then declined during the 1950s and 1960s before rebounding during the 1970s and thereafter. A few of the elections examined herein were called by elected officials, typically by city councils, rather than by a voter signature process. Outside the United States only Switzerland appears to have conducted tobacco control referendum elections (Cornuz, et al. 1996; Durham et al 2014). [↑](#endnote-ref-3)
4. Tobacco control supporters also conducted surveys in several of these elections, particularly so by the mid-1980s as their campaigns became better funded and more professional. Their poll results, however, are not archived and only uninformed question results are available (Bjornson and Sahr 1997; Givel and Glantz 2000; Glantz and Balbach 2000; Goldman and Glantz 1999; Lum, Barnes, and Glantz 2009; Traynor and Glantz 1996; and Nicholl 1998). A few media surveys are also available, mostly from California, but only for uninformed heads-up poll questions. [↑](#endnote-ref-4)
5. The tobacco industry also sponsored many other surveys in these elections, including late-campaign tracking polls, post-election and exit surveys, voter segmentation studies, and other baseline or brushfire polls that did not include a message-testing strategy. All the 20 elections examined here were conducted between 1978 and 2002 after which the industry’s polling is no longer archived. All 39 of the surveys here are of registered voters; all information is taken from polling reports; no data files are available. [↑](#endnote-ref-5)
6. The best-fit model for the percentage of votes received (for the tobacco control side) was 38.5% + 8.5% for each degree of elite unanimity in favor of the tobacco control side – 9.5% if another major election was held on the same day (with standard errors of 5.8%, 1.9%, and 9.35%, respectively; significance levels were .000, .000, and .05, respectively); R-2 =.60; adjusted R-2 = .55; overall significance level of .000. Paul and Brown (2001) did not code whether another election was held at the same time as the sports facility referendum, but do report that three variables – baseline public opinion, elite unanimity, and the percentage of the facility paid for by public funding – strongly affected vote outcomes, with an R-2 of .75 and adjusted R-2 of .65 when these three variables were included along with six nonsignificant variables. The baseline support for the tobacco control position, as measured by the uninformed heads-up question, did not significantly predict the election percentage vote outcome; and neither did whether the election was statewide or local, the ratio of campaign spending, or whether the election involved a tax hike or a public smoking ban. Following Paul and Brown (2001) elite unanimity for the tobacco control position was coded ranging from 4 (near-complete elite support for tobacco control) to 1 (very little elite support for tobacco control). [↑](#endnote-ref-6)
7. This win-loss ratio is very similar to the results for all elections during the 1978-2002 time period and also for the later 2004-2018 period during which tobacco control supporters won 58% while losing 42% of statewide tobacco control elections. This computation does not include a few tobacco industry-sponsored ballot measures aimed at enacting weak statewide regulations but preempting stronger local ordinances, nearly all of which failed. None of the industry-sponsored ballot measures are included among the 20 elections reported in this paper. [↑](#endnote-ref-7)
8. The logic of this hypothesis is that most voters begin a tobacco control election by answering the uninformed poll question by using a health-oriented frame, but that the message testing questions lead respondents to consider other frames just prior to answering the informed heads-up question. During these campaigns the tobacco industry avoided debating the public health issue, instead focusing its campaign advertising on alternative frames such as whether tax hikes on tobacco products were unfair or regressive; whether an added tax would create more bureaucracy, be diverted to hospitals or HMOs or doctors, or be misspent or wasted; whether higher taxes would lead to cigarette smuggling; or whether public smoking bans would burden business owners or the police, or lead to discriminatory enforcement (Lum, Barnes, and Glantz 200; Nicholl 1998; Marshall 2016: 87-95). [↑](#endnote-ref-8)
9. In all these 20 elections the better-funded tobacco industry was the first to start its active campaign, typically with radio and television ads, at an average of about 105 days before a statewide election and about 55 days before a city or county election. Evidence on when the active campaign started is taken from tobacco industry records in the Truth archive. [↑](#endnote-ref-9)
10. Further, when there were two or more benchmark polls take prior to the active campaign, average poll support on the uninformed question for the tobacco control position varied only 2.5% and average support for the tobacco industry changed only 4.5%. This suggests that only a minimal amount of net position changing occurred during the time prior to active campaign advertising. [↑](#endnote-ref-10)
11. Coding whether a message testing question reflects a pro- versus an anti-tobacco control position is usually straightforward since these questions typically reflect current or prior campaign advertising by the tobacco industry side or the tobacco control side (Givel and Glantz 2000; Lum, Barnes, and Glantz 2009; Moon, Males, and Nelson 1993; Nichol 1998). A small number of questions could not be so coded and are not included for this hypothesis. [↑](#endnote-ref-11)
12. This ratio-of-ratios variable computes separately the ratio of anti-to-pro message testing questions and the ratio of campaign spending of anti- and pro-tobacco control supporters, then divides the smaller by the larger of the two ratios. As an example if there were three times as many anti- and pro-tobacco control poll questions, and the tobacco industry spent three times as much as did the tobacco control side, both ratios would be 3-to-1 and the resulting ratio-of-ratios variable would be 1.0. As the ratio-of-ratios becomes less similar, the resulting value approaches zero, with the range of numbers from one to zero. [↑](#endnote-ref-12)
13. It is unclear whether an even smaller number of push and pull testing questions would produce an average result since the tobacco industry’s polling did not commonly include so few such questions. [↑](#endnote-ref-13)