Diffusion and Learning across Political Campaigns

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Abstract

Are campaigns for different offices isolated events, or do candidates observe and learn from each other? For example, when choosing which issues to emphasize, do candidates focus solely on their own strengths and their constituents' desires, or do they emulate one another? The answers to these and other related questions have important implications for the genesis of the national policy agenda. To address these questions, we study the diffusion of issues across gubernatorial and senatorial campaigns in the general election of 2002. We find that candidates do learn, emulating other successful candidates, and that candidates learn more from copartisans and from those whose constituencies are ideologically similar. Moreover, we show that experimentation with new issues begins with risk-taking newcomers, followed by successful issues eventually spreading to the campaigns of entrenched incumbents. These results suggest that the national policy agenda is built from the bottom up, with new ideas attracting institutional support based on their proven electoral success.

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* Paper previously presented at the 2011 Annual Meeting of the Southern Political Science Association and the 2010 Annual Meeting of the American Political Science Association. The authors thank Chris Achen, Leticia Bode, Jan Box-Steffensmeier, Chuck Finocchiaro, Ken Goldstein, Shanto Iyengar, Lesley Lavery, Jacob Montgomery, Ellen Moule, Michael Neblo, Brendan Nyhan, Sean Richey, Daron Shaw, John Sides, Harvey Starr, Tracy Sulkin, Alan Wiseman, and seminar participants at Ohio State University and the University of Pittsburgh for helpful comments and discussions during the development of this project, and Kelsey Shoub and Chris Skovron for valuable research assistance. Thanks to the Wisconsin Advertising Project for making their data available. Please send questions or comments to the authors (darmofal@gmail.com, botten.1@osu.edu, minozzi.1@osu.edu, or volden.2@osu.edu).

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> "Since July, Max Cleland has voted against the President's vital Homeland Security efforts 11 times! Max Cleland says he has the courage to lead, but the record proves Max Cleland is just misleading."
>
> Television ad aired by Saxby Chambliss[1]

In early October 2002, Saxby Chambliss was losing his bid to unseat Georgia Democratic Senator Max Cleland. Chambliss had aired ads on abortion and Social Security, but little seemed to have worked. Cleland, a Vietnam veteran and triple amputee, touted his close, working relationship with President Bush to vouch for his moderate ideological (but tough-on-terrorism) status, and his lead seemed unassailable. The most recent independent poll had Chambliss down by 11 points, but the four-term Republican Representative from Macon had not yet deployed what was to become his most devastating weapon. On October 8th, Chambliss started airing an ad targeting Cleland's recent voting record on homeland security, reiterating a charge he had been leveling for weeks. The ad, the text of which is quoted above, sparked a firestorm and commanded national attention. By October 20th, Chambliss had narrowed the gap to 6, and other candidates across the nation had taken an interest in the homeland security issue. Between the 20th and the end of the month, Republicans ran ads on homeland security in Senate campaigns in Arkansas, Louisiana, Iowa, and New Mexico. Chambliss's victory that November is remembered (perhaps infamously) as one of the success stories of the 2002 electoral season.

Candidates craft the agenda for a representative democracy when they decide which issues to emphasize. Voters choose which candidates to support based on whatever criteria are available, meaning that candidates help set the bar against which they are measured. This choice, however, is fraught with danger. There are dozens of issues to choose from, and the

[1] See the ad at http://www.youtube.com/watch?v=tKFYpd0q9nE.

successful candidate must hit a moving target, as neither the issues nor the voters themselves are static and unchanging. If a candidate chooses the wrong set of issues, she risks leaving her constituents unexcited, or worse, hostile. For example, how soon after 9/11 could candidates raise terrorism or homeland security as a political campaign issue, and with what effects? Fortunately for the ambitious candidate, these choices are not made in a vacuum; they can learn from the successes of others, as the above anecdote suggests.

However, either implicitly or explicitly, scholars and popular observers often conceive of concurrent elections for different offices as distinct, isolated events. For example, candidates are thought to focus on developing personal connections with their constituents, who reelect local, familiar incumbents based on past performance (Fenno 1978). According to this view, candidates become linked only in the rare event that partisan tides roll across the nation. Most of the time, candidates are thought to focus on their own races, yielding a national agenda that can add up to little more than the sum of parochial problems. In contrast, if candidates watch and learn from each other, issues would diffuse throughout the nation, and geographically disparate elections could be knit into coherent national priorities. Without understanding whether, how, and when candidates learn from each other, we risk radically misinterpreting the meaning of campaigns and elections.

This is not to say that scholars and practitioners have ignored entirely the interrelated nature of separate races. Indeed, members of the media and policy advocates often discuss the common themes they see throughout an election season. However, these proclamations of commonality are as likely designed to attract an audience or advance a political agenda as to accurately characterize the spread of issues from one race to another. Likewise, scholars write of the common and collective fate of each party's candidates depending on the state of the economy

or the popularity of the president, and note how candidates ride the wave of popular and highly salient issues. But these works neglect the experimentation and learning about what works inherent in campaigns, as well as the spread of effective ideas from one candidate to the next.

While these ideas of learning and diffusion have received little attention in the campaigns and elections literature, recent works in disparate fields of political science identify the highly interrelated nature of political actors and their behavior. From policy diffusion (Shipan and Volden 2008) to international conflict (Gleditsch and Ward 2000), waves of democratization (Starr 1991) to legislative voting behavior (Darmofal 2009), studies have shown that political actors often learn from each other. Similarly, we argue that candidates watch their compatriots experiment with different campaign strategies, learning from the success stories and avoiding the failures. Moreover, candidates learn from friendly sources, picking up ideas more easily from successful copartisans and from those with similar constituencies. Contrary to Tip O'Neill's famous axiom, all politics is *not* local; issues in one race can diffuse outward and ascend the national political agenda.

We begin this paper by constructing a theoretical framework through which to study how candidates choose issues to emphasize. After developing hypotheses from this framework, we describe and apply our approach to studying campaigns. Using data on television advertising and polls conducted in the senatorial and gubernatorial elections of 2002, we examine the relationship between issue emphasis and electoral success, with a focus on the conditions in which learning is most likely. We conclude by discussing the implications of our results for the emergence of new issues on the nation's policy agenda.

Theoretical Framework and Hypotheses

In a representative democracy, campaigns produce more than a slate of aspiring policymakers. Campaigns and the elections in which they culminate help set the agenda for the legislative and policymaking process that follows. The ballot box constitutes a rare formal point of contact between the governed and those to whom they give their consent, making control over the criteria voters use nearly as valuable as actually holding office. Although these criteria can include important valence dimensions like competence and descriptive representation, the issues that are emphasized during a campaign set the stage for the legislation that follows. Thus, to understand how the preferences of citizens become the policy of a nation, we must understand how and why candidates choose the issues they emphasize in their campaigns.

Elections scholars have recognized the importance of issue emphasis in representative democracies and have investigated the issue content of campaigns as a consequence. A broad consensus has emerged on some fundamental ideas. Candidates expend considerable resources making issue appeals to voters (e.g., Freedman, Franz, and Goldstein 2004), who are in turn attentive to and influenced by these appeals when casting their ballots (e.g., Abbe et al. 2003; Iyengar and Kinder 1987). Moreover, elected officials carry forward the issues that figure prominently in their elections as they begin to formulate public policies (Sulkin 2005). Beyond these points of agreement, however, scholars continue to debate how candidates choose to emphasize the issues they do.

The dominant perspective on issue emphasis treats each individual candidate as though she faces her own separate problem to solve. How can she best allocate the limited resources she has among the vast array of possible issues? Some scholars argue that candidates emphasize issues that are associated with, or "owned by," their party (e.g., Brasher 2003, Damore 2004, Petrocik 1996, Spiliotes and Vavreck 2002). Others disagree, arguing instead that candidates are

bound to emphasize the priorities of the voters, "riding the wave" of whatever issues are most salient in the nation (e.g., Ansolabehere and Iyengar 1994; Kaplan, Park, and Ridout 2006; Sigelman and Buell 2004). Both approaches essentially treat the issue emphasis problem as if it were not particularly difficult. A candidate need only obey the dictates of party ownership and salience; to solve a problem as simple as this, no learning seems to be necessary. A myopic, self-focused candidate who follows these simple rules should sail to victory with ease.

Of course, the true electoral landscape is much more variegated and perilous than indicated by this model. For example, issue ownership changes over time (Sides 2006), and issue salience varies significantly from one geographic area to another (Minozzi 2010). Importantly, candidates also face challengers who try to counteract every move they make. The strategic problem faced by candidates is complicated and constantly changing. Once the problem of how to campaign is reconceptualized as difficult and complex, many questions arise. Do candidates watch each other experiment with different issues, and learn from one another's successes? Do candidates learn more from colleagues who are similar, or is there a mad dash to try every innovative issue? Are some candidates natural leaders or risk takers who experiment with new ideas, while others wait in the wings to capitalize on their success? And do some candidates learn more ably than others?

Early in a campaign season, intrepid candidates begin to air ads, emphasizing some cluster of issues. We argue that strategic candidates pick up on issues emphasized by the most successful early experimenters. This claim rests on two simple assumptions. First, we make the uncontroversial assumption that candidates are electorally motivated and act to increase their likelihood of victory. Second, we assert that candidates are able to gauge the state of races elsewhere in the country and evaluate the success of other candidates. In an era of easy access to

polling data, we expect strategic candidates to pick up on the issues emphasized by their successful colleagues, beginning the diffusion of issues across the nation.

Learning from Success Hypothesis: *Issues emphasized by successful candidates are more likely to be subsequently emphasized by other candidates.*

This simple learning hypothesis and the diffusion of issues it suggests does not differentiate based on the applicability of other candidates' experiences to one's own circumstances. But there is good reason to expect that problems of applicability can limit learning. Successful candidates must fit the issues they raise to the preferences, expectations, and priorities of their own constituents. An issue that works for a Democrat in a liberal state like Vermont may fare poorly for a Republican in a conservative state like Texas. One reason for this is the "issue ownership" thesis alluded to above; candidates may benefit by emphasizing issues associated with their own party. Parties also serve as organizational networks, connecting copartisans to the same campaign consultants, groups of activists, and other networks of influential individuals (Koger, Masket, and Noel 2009). Furthermore, successful issue emphasis in a very conservative (or liberal) state is likely to be more applicable in states that are similarly conservative (or liberal). Thus, learning should be conditional; candidates should learn from successful experiments attempted by others like themselves more than successful experiments by very different candidates.[2]

Learning from Similar Candidates Hypothesis: *Issues emphasized by successful candidates are more likely to be subsequently emphasized by copartisans and by those whose constituencies have a similar ideological complexion.*

[2] Other similarities across races, such as in constituent demographics or in the salience of particular issues, may likewise affect the diffusion of campaign activities. Future work exploring these relationships would be welcome.

Beyond questions of success and the fit between an issue and a campaign, we should expect innovations in issue emphasis to come from the candidates with the most to gain from experimentation. Candidates differ in a fundamental way based on whether they are challengers to incumbents, competitors for open seats, or incumbents (Herrnson 2008). One of the defining features of the American electoral landscape is the high reelection rate of incumbents. Challengers to incumbents face the longest odds of victory, and therefore have the most to gain by emphasizing the right issue. Moreover, they have little to lose; the chances of winning are typically so slim as to offset the gamble with new issues. Open seat candidates likewise need to make a name for themselves, and thus are prone to be risk takers who bring more innovative ideas into campaign discussions. The flip side is that incumbents, with their enhanced name recognition, prior constituent service, and well-honed political acumen, are in a better position to play a defensive and safe strategy unless and until they perceive a significant challenge. Moreover, because they are expected to win, their impending victory is not looked upon with the same level of interest as are the campaigns of high performing outsiders.

Learning from Newcomers Hypothesis: *Issues emphasized by successful challengers and open seat candidates are more likely to be subsequently emphasized by others.*

Rather than being the candidates who adopt risky strategies that are emulated if successful, incumbents are more likely to be recipients and benefactors of issue diffusion. These proven winners have previously shown their ability to recognize the fit between a portfolio of issues and the characteristics of their constituents. Challengers and open seat candidates, in contrast, are often new to the high level of electoral politics demanded of them. They may well be underfinanced, limiting their ability to adapt to a changing environment even when they are

aware that the environment has changed. They are so immersed in their own battles that they have little time or ability to learn the appropriate lessons from others.

Learning by Proven Winners Hypothesis: *Issues emphasized by successful candidates are more likely to be subsequently emphasized by incumbents.*

In sum, the theoretical argument advanced here is that learning across political campaigns is possible and that candidates embrace such learning to enhance their electoral chances. Learning is not likely to be universal, however. Risk-taking candidates bear much of the burden of coming up with new ideas that will succeed or fail at pleasing potential voters. Incumbents may be able to watch and learn, perhaps gaining the most from the diffusion of ideas across campaigns. And the lessons to be learned are most likely to be appropriate if candidates are similar in their partisan leanings and their constituents' ideologies.

Empirical Approach

Although the above hypotheses are quite general, we focus here on races for governor and for Senator in the U.S., specifically during the post-primary general election cycle in 2002. A vast amount of information about these campaigns is available from a broad array of sources. Given our hypotheses, we need to measure the issues emphasized by candidates and the success of candidates, and to use a method of analysis that allows an exploration of which issues spread across campaigns. We rely on data from the Wisconsin Advertising Project (WiscAds) to determine which candidates emphasized which issues during each week of the campaign. We assess the success of each campaign according to each candidate's poll numbers, and we assess the diffusion of issues from successful campaigns through a dyad-based event history analysis. Each of these aspects of our empirical approach merits some detailed discussion.

Any set of elections held individually across multiple jurisdictions, as in a federal system like the U.S., may feature the types of learning hypothesized above. However, for most campaigns, such as those for state legislatures and even for the U.S. House of Representatives, objective data are not readily available regarding campaign success. Only very limited details of campaign activities are available in many of these races, as well. This is not to say that candidates in such races do not learn, nor that there is no issue diffusion in these campaigns. Rather, it is difficult to cleanly detect diffusion processes in the absence of objective data. Most critically, consistent over-time polling has not been conducted regularly for most elected offices. In contrast, multiple polling organizations conduct and release polls for many races for governorships and Senate seats, providing a glimpse into which candidates are doing well and which are doing poorly. Campaign activities, like issue emphases, are also well documented in these races.

Given our focus on the diffusion of issue emphasis, we rely on the WiscAds dataset. This dataset captures the television advertisements in political campaigns for the top 100 media markets in the U.S. For each ad aired in these areas, the dataset includes information on when and where the ad was run and what the ad contained. This information includes a list of dozens of issues that are raised across the political campaigns in a given year. Each ad airing is coded for up to four issues that the ad mentions. This allows us to record which issues were emphasized by which candidates in which weeks. The WiscAds data are currently available for the 2000, 2002, and 2004 election cycles. We here focus on 2002, but plan to expand our analysis to the other two campaign years in future drafts of this paper.

[Insert Figure 1 about here]

The homeland security ad run by Chambliss, as noted in the introduction, is coded in WiscAds as emphasizing Terrorism. As an example of the insight afforded us by these data, Figure 1 shows the diffusion of Terrorism emphasis across general elections for Senate seats in 2002. In each pane of the figure, states with a dark shading include at least one Senate candidate who started running ads emphasizing Terrorism in the corresponding time period. Once Terrorism has been emphasized in a state, that state is shaded lightly. The first pane depicts all states in which any candidate emphasized Terrorism more than six weeks before the election, making it clear that candidates in states other than Georgia preceded Chambliss in emphasizing Terrorism. Georgia is still an early mover, as seen in the second pane, and the diffusion suggested by the anecdote also seems to emerge over the next few weeks. Terrorism emerged as an issue in more and more states, most notably in states with strong Republican partisan complexions. But this does not necessarily mean that candidates in other states learned from Chambliss's success, that Chambliss was the only candidate who thrived using the Terrorism issue, or that the diffusion pattern was based on ideological or partisan learning. To evaluate claims like these, we need a measure of each candidate's success.

To identify the success of political campaigns, we rely on the most recently released poll numbers for each candidate being examined. Unfortunately, we are not aware of a comprehensive dataset of governor and Senator polls across the years of the WiscAds data. Therefore, we constructed our own dataset based on Lexis-Nexis and Factiva searches of newspaper articles using the phrases "poll," "percent," "margin of error," or "campaign tip," coupled with either "governor" or "gubernatorial" in the case of governors' races or "Senate," "senator," or "senatorial" in the case of Senators' races. The "campaign tip" search term was used to capture the polling summaries of "The Hotline," a news outlet that tries to systematically

aggregate and report current poll numbers on all high profile races across the country. Together, these searches generated thousands of articles for each campaign cycle. Two research assistants read each article and coded any general election poll found within. Any discrepancies between the two coders were resolved by one of the authors, who returned to the news article to discern which coder had the correct information. Although not every race featured significant polling over time, across the 36 contested gubernatorial and 32 contested senatorial races in 2002, our approach captured 191 and 202 separate polls, respectively.

With the data needed to capture both campaign activities and candidate success, the final element of our empirical approach is an assessment of the extent to which campaign issues spread across campaigns during any given election cycle. Thankfully, here we could rely on an extensive literature on policy diffusion that has generated hundreds of articles in American politics, comparative politics, and international relations on the spread of policies across governments.[3] The literature on policy diffusion in American politics extends back to the work of Walker (1969). A significant methodological advance by Berry and Berry (1990), who brought event history analysis into this area of research, allows scholars to determine which governments adopted which policies and why, controlling for internal determinants of policy adoption and external policy diffusion considerations, such as copying the policies of geographic neighbors.[4] While such an approach is very useful in exploring the adoption of individual policies, such as the lottery (Berry and Berry 1990) or a limited set of antismoking laws (Shipan and Volden 2006, 2008), it is less attractive for studies of policies with multiple components (see Boehmke 2009a) and for assessing the extent to which successful policies spread across governments (but see Meseguer 2006). Studying the complex decisions of states regarding the

[3] For a review of this literature across fields in political science, see Graham, Shipan, and Volden (2010).
[4] Event history analyses and duration models have also become more frequently used in the study of campaigns and elections, such as in Damore's (2005) assessment of issue convergence in presidential campaigns.

emulation of successes in the multi-faceted State Children's Health Insurance Program, Volden (2006) brought a directed-dyad-based event history analysis into the policy diffusion literature. This approach has been widely assessed and accepted as a useful method to study diffusion within political networks (e.g., Gilardi and Fuglister 2008, Boehmke 2009b, Gilardi 2010).

Put in our context, the directed dyad approach focuses on all possible pairs of candidates in each week of the general election campaign.[5] The key question we are asking is, under what circumstances will Candidate A adopt an issue emphasis strategy that has previously been adopted by Candidate B? We develop a dependent variable, ***Emulation***, to capture this phenomenon. Specifically, we examine all of the issues addressed in all ads aired by each candidate in each week of the general election campaign. For 2002, the WiscAds data contain 59 separate issues mentioned in television ads, ranging from Abortion to Education to Terrorism to Welfare. In any given week, Candidate A's ads may raise several new issues not discussed by that candidate in the previous week. If a majority of these new issues are those that were being discussed by Candidate B in the previous week, *Emulation* takes a value of one. Otherwise, *Emulation* takes a value of zero.[6] Because it is impossible to know whether Candidate A's campaign team is aware of and intent upon copying Candidate B's issue emphasis strategy, this dependent variable could perhaps best be thought of as capturing *potential* emulation. However, if there are systematic patterns regarding which candidates discuss which issues during a

[5] "Directed" with respect to dyads means that a separate observation is generated for Candidate A emulating Candidate B and vice versa, which is appropriate in our context as either candidate in each pairing may emulate the other. The potential number of observations in this sort of analysis depends on the number of candidates. For example, with 40 candidates, each could be paired with 39 others. Across 20 weeks, this would yield up to 40 × 39 × 20 = 31,200 dyad weeks. The number of observations may then be limited back depending on data availability, on some primaries occurring later than others, and on other such considerations.

[6] If Candidate A airs no new ads in a given week, the dependent variable thus takes a value of zero. Examining only the subset of observations in which Candidate A addresses at least one new issue in the current week results in largely similar support for the hypotheses as discussed below. Such an approach may or may not be theoretically appropriate, given the research questions being asked. For our purposes, the decision to address no new issues is evidence of lack of emulation, perhaps because there are no campaigns that have demonstrated the value of addressing new issues. Therefore, excluding such observations does not appear to be an improvement upon the inclusive approach we use here.

campaign, those patterns can be uncovered through relationships between the *Emulation* variable and key independent variables.

Not all similarities in issue emphasis strategies across different campaigns should be thought of as diffusion, however.[7] As Volden, Ting, and Carpenter (2008) demonstrate, similar actors may take the same actions at about the same time merely because they are similar, rather than because they have learned from one another. For example, Chambliss may not have learned about the success of candidates who emphasized Terrorism in North Carolina or New Hampshire; he may simply have been in a similar position as challengers in these other states. However, high levels of emulation of the strategies of more successful campaigns—that is, learning—would not occur randomly through independent choices made by different campaigns. It is this focus on learning from others' successes that drives our current research.

There are many ways that campaigns may be thought to be successful, but the gold standard is actually winning the election. Thus, to assess campaign success at any given point in time, we rely on the simple independent variable measure of ***Candidate B's Poll Results***. As discussed above, the data for this variable were collected from multiple polling organizations as released in news accounts. Here we merely rely on the most recent available poll results.[8] If Candidate A is more likely to emulate the campaign activities of successful candidates, we would expect a positive coefficient on this polling variable. For example, Chambliss's early strategies, when he was down by 11 points, would be less likely to be emulated than his strategies after he started to gain ground. To test the conditional nature of such learning from

[7] A commonly used definition of diffusion is that the decisions of one actor depend on the prior decisions of actors in other jurisdictions. Therefore, *independent* discussion of issues across campaigns would not meet this definition, even if some of those issues are raised previously by other campaigns.

[8] Future work exploring *changes* in poll numbers over time, especially linked to which issues are addressed by candidates, may provide further evidence through which to assess the hypotheses raised in this paper.

successes, we interact *Candidate B's Poll Results* with key similarities across campaigns and with indicators for different types of candidates, as detailed below.

In addition to this measure of the success of Candidate B, it is important to account for the similarities between Candidate A and Candidate B within the dyads. If candidates are looking for new ideas, it is likely that they will emulate those campaigns that share many features with their own race. Moreover, even absent the diffusion of ideas and learning from successes, candidates in similar races may discuss similar issues. Thus controlling for candidate similarities is necessary to reduce the potential for omitted variable bias. We include ten variables to account for three main types of similarities across campaigns.[9] First, to capture political and ideological similarities, we create the following variables. ***Same Incumbency Status*** takes a value of one if both Candidate A and Candidate B are incumbents, if both are challengers to incumbents, or if both are in open seat races, and takes a value of zero otherwise. ***Same Party*** takes a value of one if both candidates in the dyad are Republican or both are Democrats. ***Absolute Difference in Presidential Vote*** is the absolute difference in the percent of the two-party vote that Al Gore received in the 2000 election in Candidate A and Candidate B's respective states. ***Absolute Difference in Government Ideology*** and ***Absolute Difference in Citizens' Ideology*** are based on the updated versions of Berry, Ringquist, Fording, and Hanson's (1998) state measures of ideology.[10]

Second, to capture cultural and geographic similarities we create ***Same Culture***, which takes a value of one if both candidates' states share Elazar's (1966) same cultural classification,

[9] Accounting for further similarities, specifically with respect to the proportion of state populations over 65, the proportion college educated, and the proportion Evangelical Christians, did not substantially change the support for our hypotheses as discussed below.

[10] Substituting the Erikson, Wright, and McIver (1993) measure of state ideology yields comparable results to those noted below, as well as further evidence of greater learning across candidates from states with similar ideological positions.

and ***Same Region***, which takes a value of one if both candidates are running in the same geographic region. Third, similar demographics are accounted for with three variables. ***Population Ratio*** captures the ratio of the population of the larger state to the smaller state in which Candidates A and B are running. ***Absolute Difference in Percent White*** accounts for racial differences across the candidates' states, and ***Absolute Difference in Percent Urban*** accounts for urban-rural differences. For each of these variables, our *ex ante* expectation is that emulation should occur based on similarities, thus producing a positive coefficient on variables capturing similarities and a negative coefficient on variables capturing differences.

Much has been written on campaign dialogue and issue convergence between opposing candidates (e.g., Damore 2004; Kaplan, Park, and Ridout 2006; Minozzi 2010; Sigelman and Buell 2004; Simon 2002). We likewise expect that issues raised by one's opponent are more likely to be addressed than are those issues raised by an unrelated candidate in a different state. We therefore anticipate a positive coefficient on ***Opponents***, an indicator variable that takes a value of one if Candidate A and Candidate B are opponents in the same race.

Beyond the measures of Candidate B's success and of campaign similarities, there may be reason to believe that the nature of Candidate B or of Candidate A themselves may influence the likelihood of Candidate A copying Candidate B's campaign strategies. As hypothesized above, we expect differences between the innovativeness of challengers and open seat candidates and that of incumbents. Thus, we account for these possibilities with indicator variables for $\boldsymbol{Challenger_B}$ and $\boldsymbol{Open\ Seat_B}$, with incumbents being the omitted baseline category. Moreover, because the diffusion literature has long indicated a flow of ideas from larger states to smaller

states (e.g., Walker 1969), we control for ***Population$_B$ (logged)***, based on 2002 estimates.[11] We also include those three variables for Candidate A, as we anticipate differences in emulation by different types of candidates and by those from larger or smaller states.[12] Finally, to account for differences in the likelihood of emulation across campaigns over time, we include ***Week*** and the squared term, ***Week^2***.[13] All variables, their sources, and their descriptions are reported in the Appendix.

Results

As is common in dyad-based event history analyses (e.g., Volden 2006), we conduct a logit regression to explore the relationship between *Emulation* and the various independent variables. However, there may be concerns about the independence of observations. For example, if Candidate A does not emphasize any new issues in her ads in a given week, the dependent variable takes a value of zero for all of her directed dyads. Likewise, a new ad may introduce a series of issues found in many other campaigns. To account for possible dependence across Candidate A's observations both within any given week and also across weeks, we cluster the observations by Candidate A, using the cluster procedure in Stata 10.1. This procedure also uses Huber/White standard errors to account for the possibility of heteroskedasticity. Beyond these adjustments, Boehmke (2009b) raises a concern about dyadic diffusion models where the dependent variable takes a value of zero simply because A and B were already behaving identically at the start of any given period. In such a circumstance, it would be impossible for A

[11] Logging the population value reduces the likelihood of outliers driving the effects of this variable. Including the non-logged version of this variable instead produces results in the same direction as the logged population variable and does not substantively change support for our main hypotheses.

[12] Controlling for campaign contributions in the Senate races, based on Federal Election Commission data, showed that candidates with more money were more likely both to emulate others and to be emulated themselves. Such controls did not affect support for the hypotheses advanced here, and will be explored in greater detail in future drafts.

[13] Including dummy variables for each week of the campaign does not substantively change the results reported here.

to emulate B, and the inclusion of such observations could bias the results of the model. We therefore follow Boehmke's lead in excluding all pairings in which Candidate A is already airing ads discussing all of the issues emphasized by Candidate B.

[Insert Table 1 about here]

Table 1 presents the results for our baseline model. This model explores the effects of *Candidate B's Poll Results* from the preceding week on the probability of Candidate A subsequently emulating B's issues. As can be seen, we find strong support for the Learning from Success Hypothesis. Candidates are more likely to emulate the issues in another candidate's ads if that candidate is successfully attracting voters. Specifically, for the governors' races of Model 1, each one point rise in Candidate B's poll numbers is associated with about a two percent increase in the odds that Candidate A will emulate B's issue emphases.[14] Model 2 shows a similar 1.4% rise in Senate races. Put another way, compared to the average candidate, when Candidate B is one standard deviation higher in her poll numbers, the odds of her issues being picked up in each other race are 16% higher for governors and 13% higher for Senators. While readers may assess these effects to be large or small based on their own considerations, it is worth noting that such effects hold for *each* Candidate A paired with B and for *each week* of the election season. Thus the overall learning effects may be quite substantial indeed.

This finding is consistent with our understanding of political candidates as strategic actors with electoral motivations who scan other contests to emulate what is proving effective in those races. We find evidence of this effect both for gubernatorial and senatorial candidates. Thus, even though gubernatorial candidates are not elected to the same governmental body, gubernatorial races are *not* simply independent state-by-state contests. All politics are not local.

[14] The relevant calculation is $e^{(1.00)(0.019)} = 1.019$, which is a 1.9% increase in the odds ratio.

Gubernatorial candidates, like their senatorial counterparts, learn from what is working in other races and adjust their strategies accordingly.

Although candidates for both types of office share a common tendency to adopt the issues that are proving effective in other races, they differ in their emulation processes in other ways. For example, Senate Candidate A is more likely to emulate Senate Candidate B if they both are incumbents, both challengers to incumbents, or both candidates in open seat races. *Same Incumbency Status* does not, however, seem to affect gubernatorial candidate emulation. Both gubernatorial candidates and senatorial candidates are more likely to emulate co-partisans, although this effect is only statistically significant for governors.

Absolute Difference in the Presidential Vote has the expected negative effect on emulation in senatorial contests. As pairs of candidates for Senate seats represent increasingly disparate constituencies, they become less likely to emulate one another. This effect, however, is not present in gubernatorial contests. Instead, for governors, it is a sizable ideological difference in the state governments across the dyad that puts a damper on issue emulation. Perhaps government ideology has a greater effect on gubernatorial emulation than on senatorial emulation because gubernatorial candidates are competing to lead these state governments whereas Senate candidates are more removed from their home state government's ideology in the national legislature.

We also see contrasting effects for *Same Culture* and *Same Region* in gubernatorial and Senate races. Gubernatorial candidates are more likely to emulate candidates from states with the same political culture while Senate candidates are more likely to emulate candidates from the same region. Perhaps *Same Culture* captures a state-specific dimension of executive governing

style, while *Same Region* identifies an otherwise-unaccounted-for desire for geographic representation on the national stage.

Issue convergence (e.g., Kaplan, Park, and Ridout 2006), modeled here as increased emulation by *Opponents*, is present only in gubernatorial contests. Even though our dyadic diffusion approach identifies significant emulation in races for both types of office, little evidence emerges for dialogue within any given Senate race. This demonstrates the limited nature of a focus only on issue convergence *within* races relative to the significant patterns of issue diffusion *across* contests.

We find conflicting effects of Candidate B's candidate type on the probability of emulation in gubernatorial and senatorial races. Candidates in gubernatorial contests are more likely to be emulated if they are challengers to incumbents, and open seat candidates in Senate races are less likely to be emulated, all else equal. An interesting contrast also is present in the effects of population, representing the nature of the U.S. Senate as a legislative body. Senate candidates are more likely to emulate others from small states while gubernatorial candidates are more likely to emulate others from large states. We cautiously interpret these effects as reflecting the irrelevance of state populations for influence in the Senate as opposed to the prominence of governors from large states on the national stage. With two Senators elected from each state regardless of population, big-state Senators have no inherent advantage in influencing behavior in the Senate. In contrast, big-state governors are more prominent than their small-state counterparts due to the media presence in their states and the need to confront complex problems at an earlier date. Consequently, they are more likely to be sources of emulation than are big-state Senators.

The results in Table 1 tell us much about the nature of the campaign strategy emulation in gubernatorial and senatorial contests. Our principal finding here is that candidates who are doing well in the polls are more likely to be emulated, a pattern we expect given the complexity of the problem candidates face and the opportunity to learn from the experimentation of others. Candidate similarity and constituency differences also affect emulation. Interestingly, the processes shaping emulation in races for governorships and for Senate seats demonstrate some distinct differences. Both types of contests share an important feature, however: neither gubernatorial nor senatorial contests can be treated as separate and independent races. Instead, candidates for both offices emulate and, in fact, learn from candidates in other races.

The Intervening Role of Party and Ideology

As we hypothesize above, there is good reason to suspect that the partisan and ideological elements of politics affect when and how candidates can learn from one another. To explore the conditional nature of learning, Table 2 probes the Learning from Similar Candidates Hypothesis by examining the interactive effects of success in the polls and candidate similarity on the emulation of issue strategy.[15] Models 3 and 4 examine the interactive effects of *Candidate B's Poll Results* and *Same Party* on *Emulation* for gubernatorial and senatorial candidates, and the results are somewhat mixed. We find support for the hypothesis only among gubernatorial candidates. As we can see, gubernatorial candidates are more likely to emulate a candidate who both is doing well in the polls and is a member of the same political party as the emulating candidate. Specifically, each one-percent rise in Candidate B's polls is linked to a 1.7% increase in the odds of Candidate A emulating B's issue emphases if they are of different

[15] The full set of control variables from the model specification in Table 1 is included in the model specifications in Tables 2, 3, and 4, but is deleted due to space considerations. Results including these control variables are available from the authors. Broadly speaking, the effects of the control variables discussed above hold upon accounting for the conditional nature of learning from successful candidates.

parties, and a 2.3% increase if A and B are from the same party.[16] This interactive effect is absent, however, in races for Senate seats.

[Insert Table 2 about here]

Another aspect of the Learning from Similar Candidates Hypothesis is that candidates should learn more from candidates with ideologically similar constituencies. This prediction is supported for both types of candidates, as seen in Models 5 and 6 of Table 2. Both gubernatorial and senatorial candidates are more likely to emulate candidates who are doing well in the polls and also represent similar partisan constituencies. We can get a sense of the magnitude of this interactive effect by plotting the marginal effect of *Candidate B's Poll Numbers* on *Emulation* by *Absolute Difference in Presidential Vote*. Figure 2 presents this information for gubernatorial candidates in 2002 while Figure 3 presents this for senatorial candidates in the same election cycle.

[Insert Figures 2 and 3 about here]

As can be seen, the effect of Candidate B's support among voters on *Emulation* is greatest when Candidates A and B represent constituencies with identical ideological or partisan complexions as measured by presidential vote share. For both types of campaigns, the odds of Candidate A emulating Candidate B are just above two percent greater for each percent increase in B's poll numbers, if A and B are from states with identical Democratic presidential vote shares. This effect declines, however, as the distance between constituencies' support for Gore in 2000 increases. Once the absolute difference in presidential vote share reaches 20 points, the confidence interval crosses zero in gubernatorial races. A similar pattern holds in Senate contests, though the effect drops off more quickly in these contests than in gubernatorial races. Here the confidence interval crosses zero when the absolute difference in vote share reaches

[16] The relevant calculations are $e^{(1.00)(0.017)} = 1.017$, and $e^{(1.00)(0.017+0.006)} = 1.023$.

approximately 13 points. Thus, similarity is conducive to learning for both gubernatorial and senatorial candidates. For gubernatorial candidates, both the candidates' party and their partisan constituencies are relevant; for senatorial candidates only the latter is consequential. On the whole, these results tend to support the Learning from Similar Candidates Hypothesis.

Who Learns from Whom?

Our next hypotheses focus on which candidates are the sources and which are the recipients of issue diffusion. In the Learning from Newcomers Hypothesis, we posited that challengers and open seat candidates who are doing well in the polls are most likely to be emulated because newcomers must take more risks than incumbents in identifying persuasive issues on which to campaign. In contrast, incumbents can be more risk averse in their initial issue emphases, and may be better able to sit back, watch, and learn from successes elsewhere, as predicted by the Learning by Proven Winners Hypothesis.

[Insert Table 3 about here]

Table 3 reports the findings of the models examining which types of candidates are emulated. Model 7 presents the results for gubernatorial emulation while Model 8 presents the results for senatorial emulation. By interacting *Candidate B's Poll Results* with each of the three types of candidates (*Incumbent*, *Challenger*, and *Open Seat*), we can easily identify which of these types of candidates are most likely to be emulated upon exhibiting campaign success. In line with the Learning from Newcomers Hypothesis, open seat candidates and challengers exhibit the strongest interactive emulation effects, for gubernatorial and senatorial races, respectively.

[Insert Figures 4 and 5 about here]

It is also important, however, to account for the baseline rates of emulation for these different types of Candidate B. Upon doing so, the patterns of who is emulated can be seen most easily visually. Figure 4 presents who was emulated among gubernatorial candidates in the 2002 election cycle. Figure 5 presents the same effects for senatorial candidates. The figures plot the logit effects, relative to an incumbent Candidate B with a 50% poll rating, for each of the types of potentially emulated candidates across the range of polling percentages observed for these candidates in our data.

As can be seen from Figure 4, the polling numbers for incumbents and their challengers in races for governor did not significantly affect the likelihood of their issues being picked up in other races. In contrast, as the polling percentage for open seat candidates rises, the probability of their being emulated rises significantly. In concrete terms, the most successful open seat candidates, receiving polls of about 57%, were about 40% more likely to have their issues emulated than were incumbents with 50% support. By no means were all open seat candidates emulated, however. Consistent with our overall learning story, those newcomers who took risks that did not pan out were much less likely to have their mistakes replicated elsewhere.

The effects for senatorial candidates are shown in Figure 5. Here we find a sharp increase in emulation of challengers as their poll numbers rise. Challengers are both the most likely to be emulated, if successful, and the least likely, if prospective voters do not reward their risks with high poll numbers. Incumbents also appear somewhat more likely to be emulated as their poll numbers increase, though with a smaller slope than for challengers. The probability of open seat candidates being emulated varies little by their standing in the polls, and is significantly lower than for incumbents.

Why the differing effects across these two offices? We believe that it may be due to the differing candidate profiles of challengers to senatorial incumbents vs. challengers to gubernatorial incumbents. The former are more likely to be long-shots for victory than are the latter given the advantages accruing to incumbent Senators who face no term limits (whereas many governors do). As a consequence, rare is the challenger to a Senate incumbent who is faring well in the polls. When such challengers do fare well, they are particularly likely to attract the attention of other Senate candidates in that election cycle and to be emulated as a consequence.

In contrast, gubernatorial candidates are often term limited, and thus open seat candidacies are relatively common. Given that gubernatorial candidates recognize the frequency of such contests, they are particularly attuned, we believe, to these races as a source of new campaign ideas. Such open races present the closest approximation to an *ex ante* level playing field and thus when candidates in such races are faring well, they are particularly likely to be emulated by other candidates. Despite these differences, the fact that the candidates most likely to be emulated are the high-performing newcomers supports the Learning from Newcomers Hypothesis quite well.

[Insert Table 4 about here]

Our final hypothesis focused on which candidates were most likely to learn from other candidates. Here we posited that incumbents, as both experts and proven winners, would be most likely to emulate the successes of others. Table 4 presents the results of the models examining who learns from other candidates, again captured by interactions, this time between *Candidate B's Poll Results* and each type of Candidate A. We once again find differing relationships for gubernatorial and senatorial candidates. All three types of gubernatorial

candidates are essentially equally likely to learn from issue successes by other candidates. In contrast, incumbent Senators are particularly likely to emulate candidates with high poll standings.

[Insert Figures 6 and 7 about here]

Once again, we can see these relationships most easily visually. Figure 6 presents who learned from other candidates' successes among gubernatorial candidates in the 2002 election cycle. The figure plots the logit effects relative to an incumbent Candidate A paired with a Candidate B receiving a 50% poll rating. Figure 7 presents the same effects for senatorial candidates in this election cycle.

Among gubernatorial candidates, all three types of candidates emulate success and avoid failure. Open seat challengers and incumbents are roughly equal emulators while challengers to incumbents are less likely to emulate at low levels of success for Candidate B but nearly catch up to their two counterparts at B's highest levels of polling. In contrast, among Senators, incumbents exhibit a sharp rise in emulation as Candidate B's poll numbers rise. At high levels of support for Candidate B, they overtake emulation by open seat challengers. These open seat challengers exhibit a stronger propensity to emulate candidates with low levels of polling support than either of the other two types of candidates. However, the emulation effects also increase slightly for open seat challengers as Candidate B's support rises. In contrast, challengers to incumbents exhibit the least emulation across the range of Candidate B's support.

The results for senatorial candidates in Figure 7 are consistent with our expectations. Incumbents are the most discerning. At the opposite end of the spectrum, faced with limited resources, challengers to these incumbents are limited in their abilities to emulate even successful candidates. Open seat candidates for Senate pick up ideas elsewhere, but seemingly

not with the same emphasis on only copying winning issues that incumbents exhibit. Such patterns are particularly supportive of the Learning by Proven Winners Hypothesis.

Implications and Future Directions

Significant policy change is hard to come by in American politics. Policy solutions must be joined to policy problems under the right political circumstances (Kingdon 1984). Agenda items are often stuck in gridlock for long periods of time before substantial change can be achieved (Baumgartner and Jones 1993). Yet, at some point, elected policymakers must take a risk and cast a vote or throw their support behind a major policy reform. In making such choices at critical moments, politicians wish to be as informed as they can be about the effects of their decisions. Rather than relying on broad nationwide polls or focus groups, politicians would like to know the effects of taking particular stances within the heat of the electoral battle. What we find in this paper is that elected politicians have a natural inclination and incentive to try out new ideas in campaigns and to learn from those that are successful elsewhere.

It is through this process that campaigns form the crucible within which the national policy agenda is forged. As such, it is vital to understand how and why aspiring candidates emphasize the issues they do. Although scholars have long studied this question, the dominant model of the candidate has been as an isolated and myopic decision-maker, sharing an electoral fate based on economic conditions, riding the wave of popular ideas, but interacting at most with her own competitors. Under such a portrayal, candidates are not described as sophisticated enough to solve the strategic problem of which issues to emphasize in the face of a complex and constantly changing electorate. To achieve success, candidates would do well to learn from their counterparts in different races across the county.

To examine the possibility of learning and diffusion across political campaigns, we apply a dyadic event history analysis to study each candidate's issue emphasis strategy in each week of the 2002 general elections for governor and for U.S. Senator. We find strong evidence that candidates do learn from one another, emulating successes and avoiding failures, especially of other candidates from the same party or representing similar constituencies. It is the newcomers (challengers and open seat candidates) who take many of the initial risks of developing new ideas, while incumbents subsequently embrace those issues shown to be electorally successful elsewhere. Such a process enhances the likelihood of a common national agenda in Washington, and even shows how policy diffusion across the states may begin very early in the public policy process.

This is an intriguing vision of a dynamic electoral arena, with experimentation, learning, and the eventual embrace of ideas favored by the public, setting the stage for significant policy change. It lays the foundation of a better understanding, for example, of how politicians, initially hesitant to try to score political points from homeland security and terrorism issues following 9/11, became sufficiently emboldened during the 2002 election to advance their political agendas, bringing about specific forms of intelligence reforms, instituting a new Department of Homeland Security, and even tying the potential for a military invasion of Iraq to the global war on terror. Yet many steps remain in fleshing out the relationships between learning in political campaigns and major policy reform. Here, we fill in one crucial piece, showing the spread of successful issue emphases across campaigns. This diffusion sets the stage for a common national agenda. The next steps involve showing the movement of these campaign emphases onto the national stage and into policy. Thankfully, some scholars have already begun work in this direction (e.g., Sulkin 2005, 2009).

Yet, even in the area of learning and diffusion across political campaigns, much is left to be done. First, to explore whether the patterns uncovered here are systematic or idiosyncratic, it will be helpful to expand the current study to additional years. Second, beyond television ads, scholars can look at other sources of data that capture the issues raised by candidates in elections (e.g., Druckman, Kifer, and Parkin 2009). Third, learning and diffusion should not just take place for issue emphasis, but also for other effective campaign strategies and tactics, like going negative under particular circumstances. Fourth, other measures of success, such as increasing poll numbers upon implementing particular campaign activities, are worth exploring. Fifth, the mechanisms by which ideas and strategies spread need to be isolated, especially with an exploration of the role of consultant networks across campaigns (e.g., Montgomery and Nyhan 2010).

In sum, understanding whether and when common themes develop across campaigns is an important first step in determining the issues that gain a critical level of support to bring about national policy change. Thus, we provide an important view into early stages of the public policy process. Whether the campaign season raises exciting new proposals for health care or immigration reform, or whether elections provide evidence of effective political strategies for confronting issues of homeland security and terrorism, our work suggests that rarely is it one lone politician who needs to carry the message of her successful election efforts forward into policy. Rather, her electoral success will be noticed, her issue emphasis emulated, and she will enter or return to office along with a cadre of compatriots who likewise campaigned successfully on her chosen issue. As an individual, she may have been ineffective; but, together with likeminded and likewise rewarded policymakers, she can bring about major changes. New issues, first experimented with by underdog challengers, can catch fire through the diffusion

process of nationwide campaigns, eventually gaining primacy on the national agenda and shaping policy for years to come.

Appendix: Data Descriptions and Sources

Variables	Description	Governors Mean (Std. Dev.)	Senators Mean (Std. Dev.)
Emulation (dependent variable)[a]	Dummy = 1 for dyad in which most of Candidate A's newly discussed issues were addressed by Candidate B in the previous week	0.127 (0.333)	0.080 (0.271)
Candidate B's Poll Results[b]	Candidate B's tracking poll numbers, a measure of success	42.05 (7.57)	45.19 (8.71)
Same Incumbency Status[c]	Dummy = 1 for dyad if both candidates are incumbents, both are challengers, or both are competing in an open election	0.381 (0.486)	0.327 (0.469)
Same Party[c]	Dummy = 1 for dyad if both candidates are from the same party	0.491 (0.500)	0.492 (0.500)
Absolute Difference in the Presidential Vote[d]	Absolute difference between the two candidates in the dyad in Democratic presidential two-party vote share in their state in the most recent previous presidential election	8.55 (6.58)	7.08 (5.67)
Absolute Difference in Government Ideology[e]	Absolute difference between the two candidates in the dyad in their state's government ideology	30.54 (21.65)	24.81 (17.58)
Absolute Difference in Citizens' Ideology[e]	Absolute difference between the two candidates in the dyad in their state's citizen ideology	16.90 (13.68)	15.15 (12.12)
Same Culture[f]	Dummy = 1 for dyad if both candidates are the same on Elazar's culture measure	0.321 (0.467)	0.371 (0.483)
Same Region[c]	Dummy = 1 for dyad if both candidates are in the same region of the country (based on the eight census regions)	0.129 (0.335)	0.160 (0.367)
Population Ratio[g]	Ratio of Candidate A and Candidate B's state populations, larger divided by smaller	4.35 (4.97)	2.93 (2.56)
Absolute Difference in Percent White[g]	Absolute difference between the two candidates' states in the dyad in percent white	13.05 (10.79)	11.55 (8.06)
Absolute Difference in Percent Urban[g]	Absolute difference between the two candidates' states in the dyad in percent urban	16.80 (12.76)	15.53 (11.25)
Opponents[c]	Dummy = 1 for dyad if both candidates are in the same race	0.017 (0.129)	0.021 (0.142)
Challenger[c]	Dummy = 1 if Candidate is a challenger	0.204 (0.403)	0.238 (0.426)
Open Seat[c]	Dummy = 1 if Candidate is running in an open seat race	0.542 (0.498)	0.347 (0.476)
Population[g] (logged)	Natural logarithm of Candidate's state population	15.40 (0.95)	15.20 (0.70)

[a] Constructed by authors from Wisconsin Advertising Project.
[b] Constructed by authors from Lexis-Nexis searches of poll results.
[c] Constructed by authors.
[d] Provided by Peter F. Nardulli, University of Illinois at Urbana-Champaign.
[e] Calculated by authors based on Berry, Ringquist, Fording, and Hansen(1998) approach, data on ICPSR website.
[f] Based on Elazar (1966).
[g] Calculated by authors from U.S. Census Bureau, Current Population Survey.

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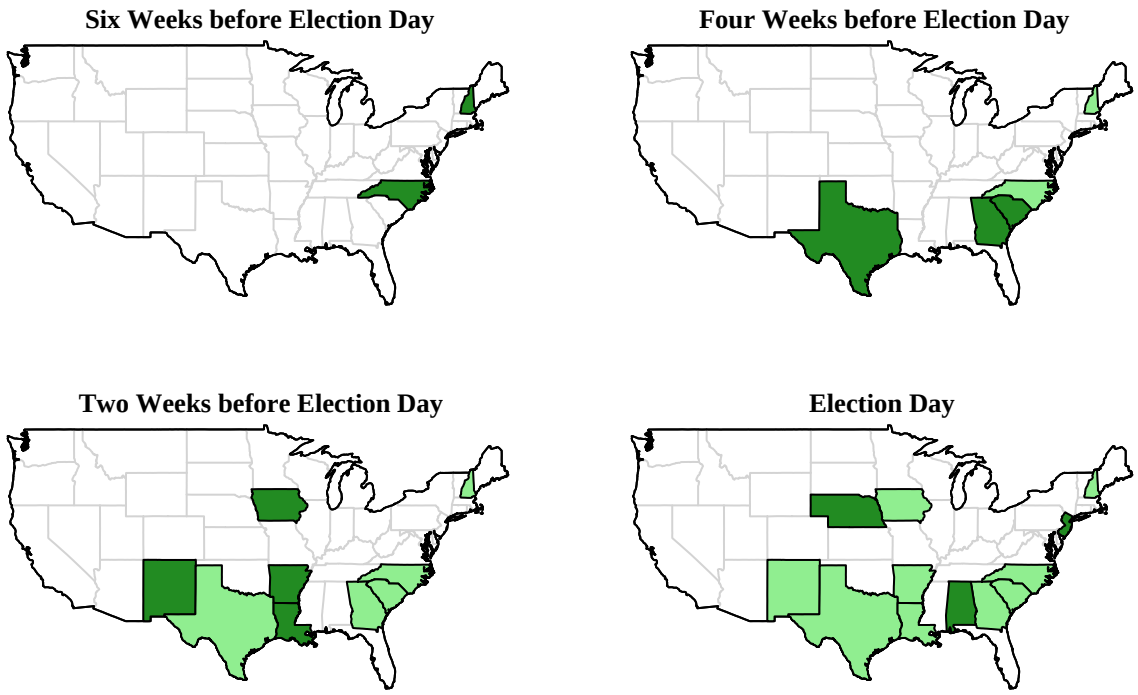
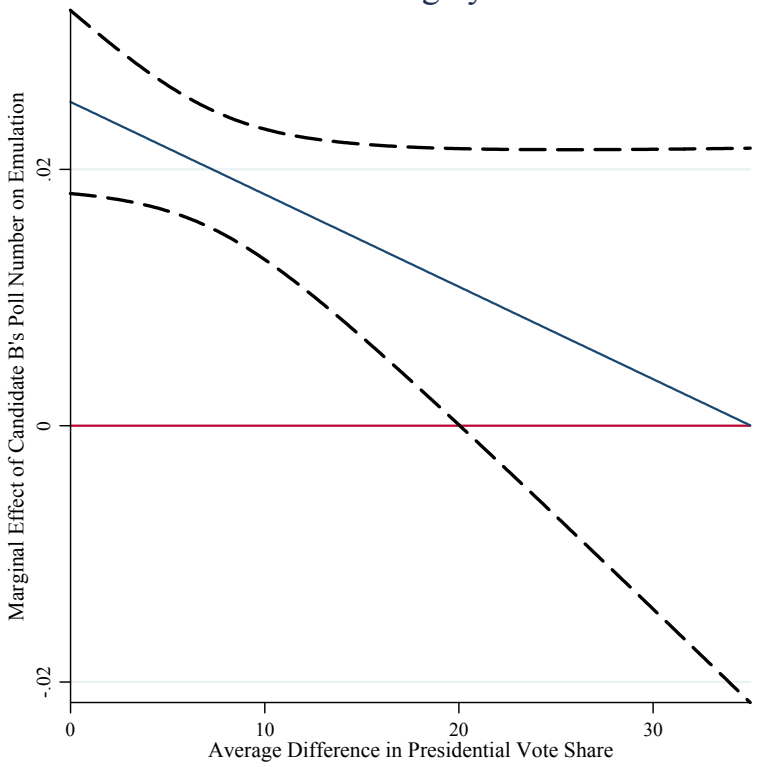
Figure 1: Diffusion of Terrorism Emphasis in 2002 Senate Campaigns



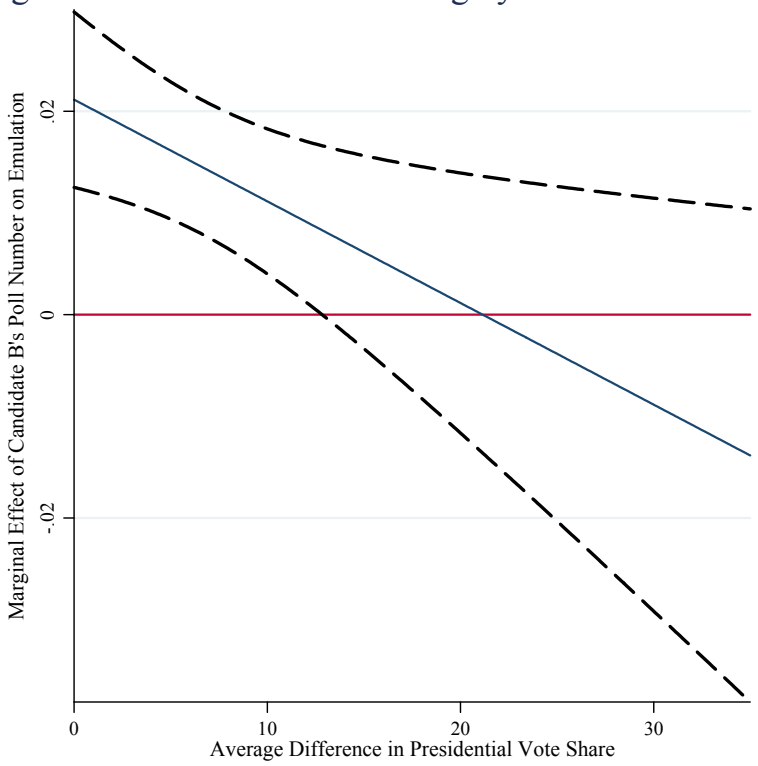
Notes: In darkly shaded states, at least one candidate emphasized Terrorism as a new issue before the date indicated. Races with a previous (and possibily continuing) emphasis of Terrorism are more lightly shaded.

Figure 2: Differences in Learning by Gubernatorial Candidates



Dashed lines give 90% confidence interval.

Figure 3: Differences in Learning by Senatorial Candidates



Dashed lines give 90% confidence interval.

Figure 4: Relative Learning Effects, 2002 Governors, Learning FROM Whom?

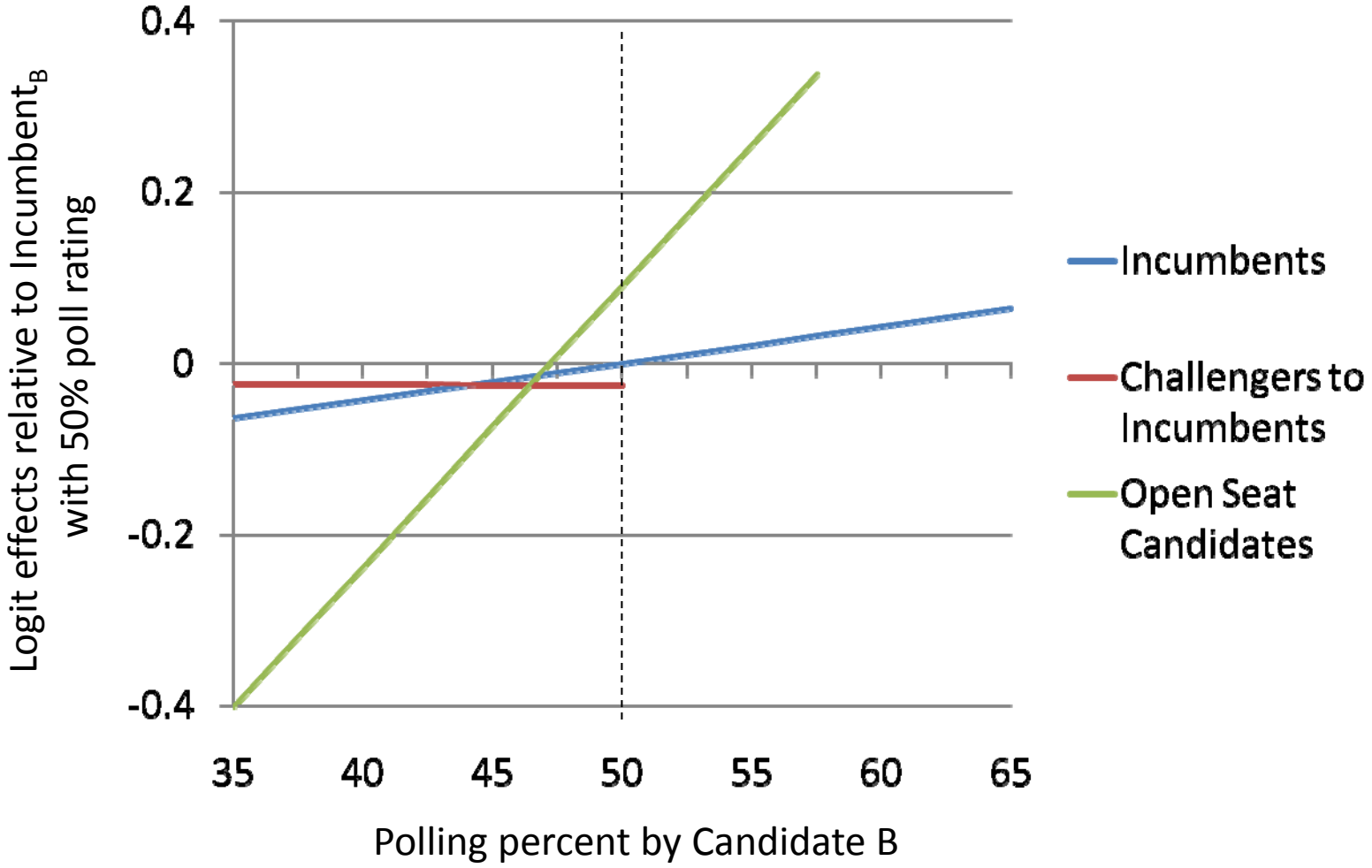


Figure 5: Relative Learning Effects, 2002 Senators, Learning FROM Whom?

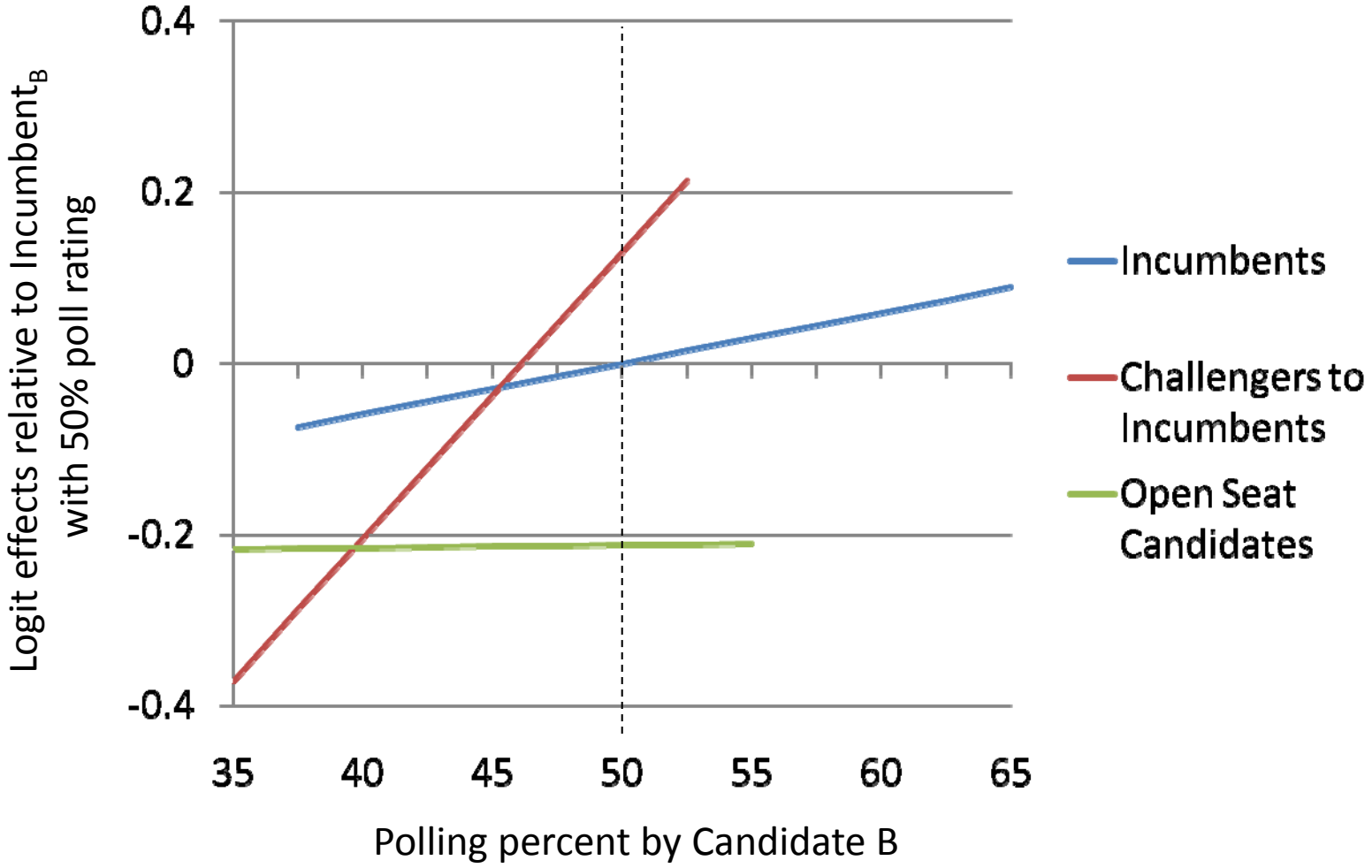


Figure 6: Relative Learning Effects, 2002 Governors, Learning BY Whom?

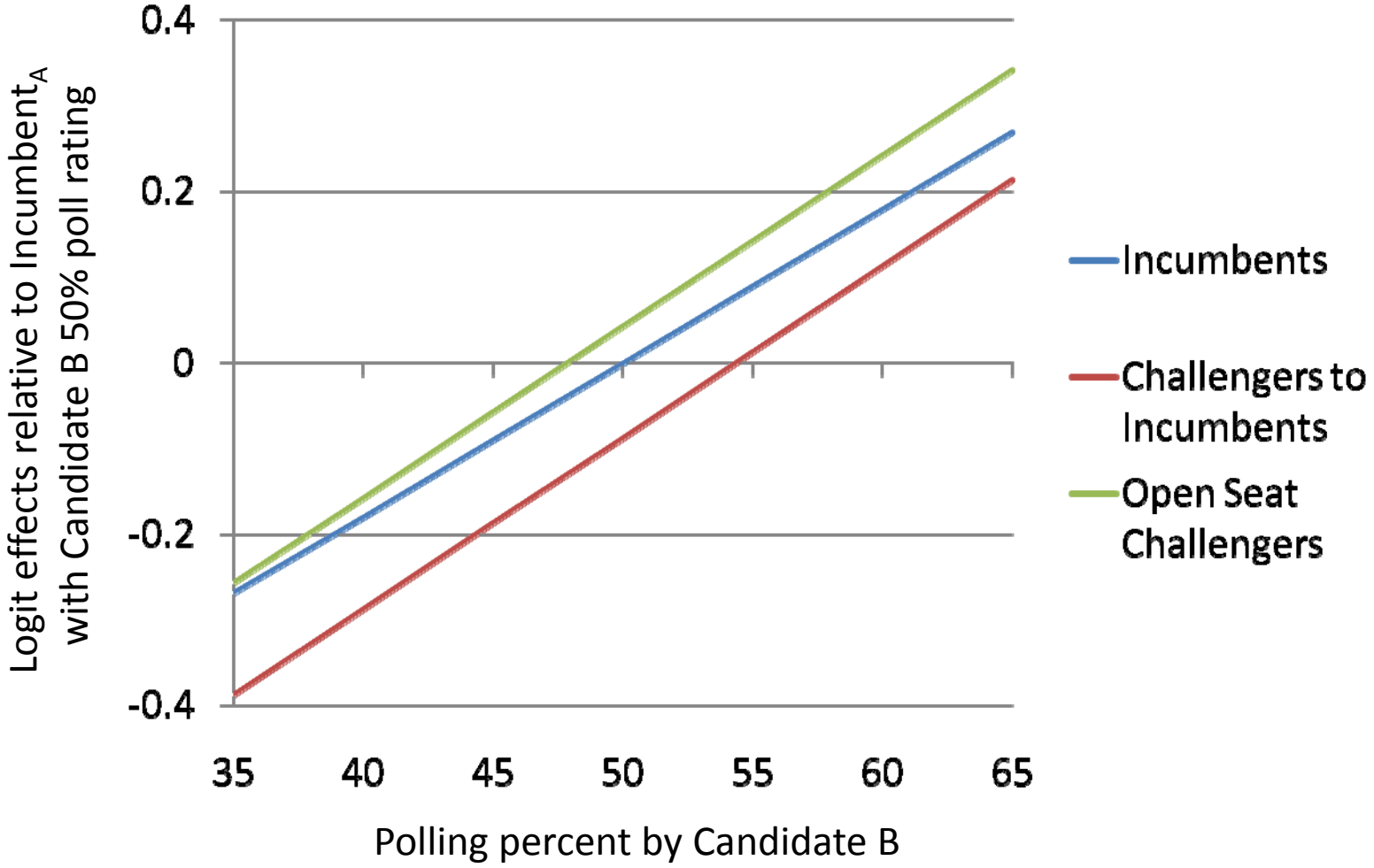


Figure 7: Relative Learning Effects, 2002 Senators, Learning BY Whom?

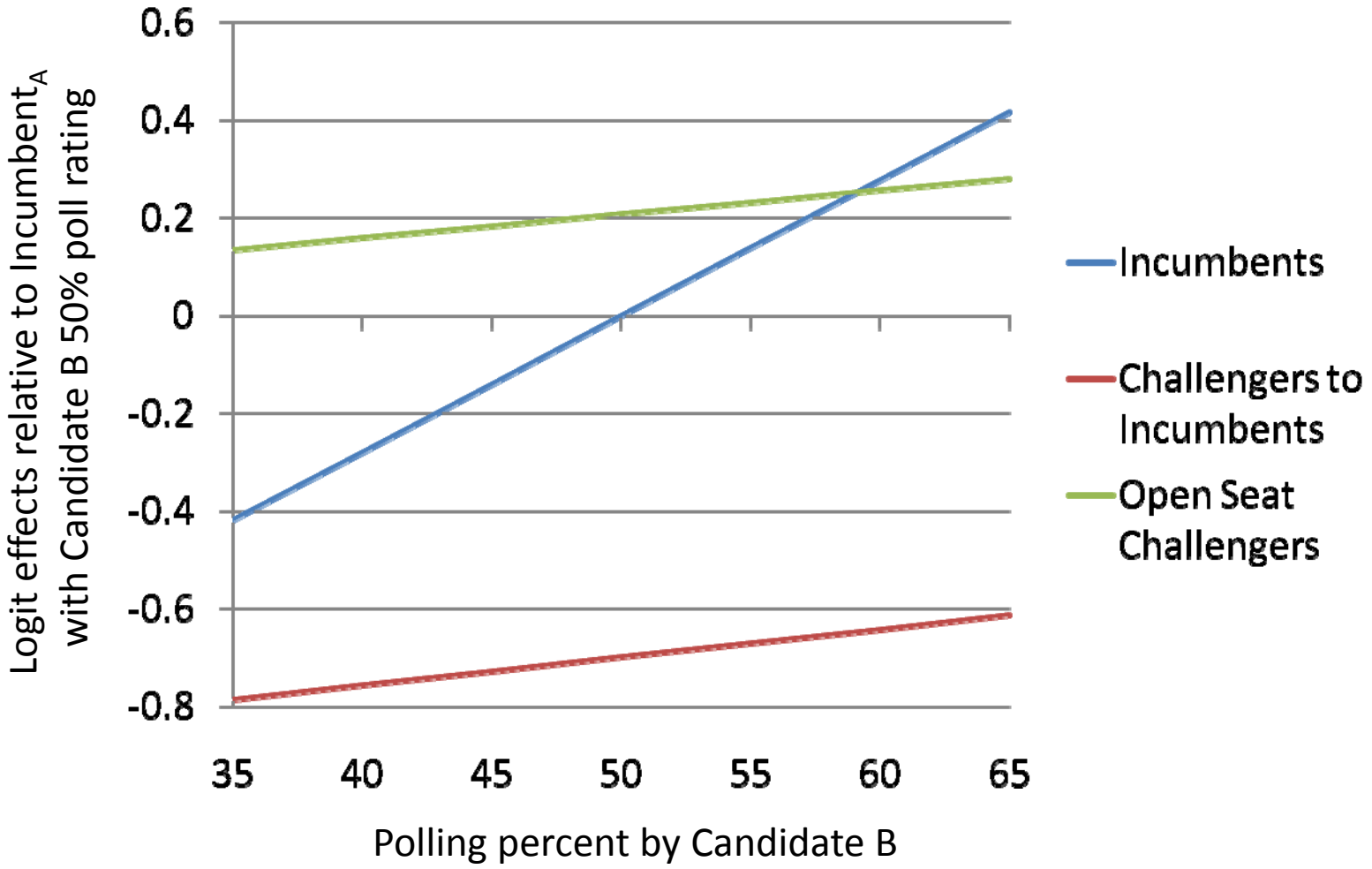


Table 1: The Diffusion of Campaign Issue Emphases

Independent Variables	Model 1 Governors	Model 2 Senators
Success		
Candidate B's Poll Results	0.019***	0.014***
	(0.003)	(0.004)
Campaign Similarities		
Same Incumbency Status	-0.023	0.090*
	(0.034)	(0.068)
Same Party	0.050*	0.064
	(0.034)	(0.070)
Absolute Difference in the Presidential Vote	0.004	-0.030*
	(0.010)	(0.021)
Absolute Difference in Government Ideology	-0.005***	-0.002
	(0.001)	(0.004)
Absolute Difference in Citizens' Ideology	-0.002	0.004
	(0.004)	(0.009)
Same Culture	0.083**	0.026
	(0.043)	(0.128)
Same Region	0.044	0.229**
	(0.073)	(0.121)
Population Ratio	-0.003	0.031**
	(0.008)	(0.018)
Absolute Difference in Percent White	0.011***	0.002
	(0.003)	(0.081)
Absolute Difference in Percent Urban	0.004*	-0.010**
	(0.003)	(0.005)
Opponents	0.456***	0.029
	(0.146)	(0.266)
Candidate B Characteristics		
Challenger_B	0.160***	-0.062
	(0.057)	(0.099)
Open Seat_B	-0.033	-0.120*
	(0.043)	(0.085)
Population_B (logged)	0.190***	-0.229***
	(0.032)	(0.034)
Candidate A Characteristics		
Challenger_A	-0.102	-0.602**
	(0.242)	(0.318)
Open Seat_A	0.029	0.298*
	(0.197)	(0.225)
Population_A (logged)	0.047	-0.034
	(0.083)	(0.135)
Temporal Controls		
Week	-0.033	2.216**
	(0.184)	(1.050)
Week^2	0.003	-0.025**
	(0.003)	(0.013)
Intercept	-9.614***	-47.923**
	(3.618)	(21.605)
χ^2 (20)	437.2***	235.5***
N	23528	13003

Estimated logit coefficients with robust standard errors clustered by Candidate_A in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.10$ (one-tailed tests)

Table 2: Learning from Similar Candidates

Independent Variables	Model 3 Governors	Model 4 Senators	Model 5 Governors	Model 6 Senators
Candidate B's Poll Resuts	0.017***	0.016***	0.025***	0.021***
	(0.003)	(0.007)	(0.004)	(0.005)
Candidate B's Poll Results	0.006*	-0.004	—	—
× Same Party	(0.004)	(0.011)		
Candidate B's Poll Results	—	—	-0.0007*	-0.0010**
× Absolute Difference in Presidential Vote			(0.0005)	(0.0005)
Same Party	-0.188	0.266	0.050*	0.063
	(0.197)	(0.499)	(0.034)	(0.070)
Absolute Difference in Presidential Vote	0.004	-0.030*	0.034**	0.017
	(0.010)	(0.021)	(0.018)	(0.037)
χ^2 (21)	553.5***	236.3***	441.9***	240.4***
N	23528	13003	23528	13003

Estimated logit coefficients with robust standard errors clustered by Candidate_A in parentheses. All variables reported in Table 1 are included in these models, but their coefficients are not reported here due to space considerations.
***$p < 0.01$, **$p < 0.05$, *$p < 0.10$ (one-tailed tests)

Table 3: Learning from Newcomers

Independent Variables	Model 7 Governors	Model 8 Senators
Incumbent$_B$ × Candidate B's Poll Results	0.004 (0.004)	0.006 (0.007)
Challenger$_B$ × Candidate B's Poll Results	-0.0001 (0.0061)	0.033*** (0.008)
Open Seat$_B$ × Candidate B's Poll Results	0.033*** (0.004)	0.0003 (0.0090)
Challenger$_B$	0.192 (0.296)	-1.244*** (0.441)
Open Seat$_B$	-1.340*** (0.262)	0.067 (0.506)
χ^2 (22) N	422.9*** 23528	306.1*** 13003

Estimated logit coefficients with robust standard errors clustered by Candidate$_A$ in parentheses. All variables reported in Table 1 are included in these models, but their coefficients are not reported here due to space considerations.
***$p < 0.01$, **$p < 0.05$, *$p < 0.10$ (one-tailed tests)

Table 4: Learning by Proven Winners

Independent Variables	Model 9 Governors	Model 10 Senators
Incumbent$_A$ × Candidate B's Poll Results	0.018*** (0.005)	0.028*** (0.006)
Challenger$_A$ × Candidate B's Poll Results	0.020*** (0.005)	0.006 (0.007)
Open Seat$_A$ × Candidate B's Poll Results	0.020*** (0.003)	0.005 (0.005)
Challenger$_A$	-0.191 (0.392)	0.404 (0.590)
Open Seat$_A$	-0.058 (0.317)	1.357*** (0.480)
χ^2 (22) N	466.0*** 23528	318.6*** 13003

Estimated logit coefficients with robust standard errors clustered by Candidate$_A$ in parentheses. All variables reported in Table 1 are included in these models, but their coefficients are not reported here due to space considerations.
***$p < 0.01$, **$p < 0.05$, *$p < 0.10$ (one-tailed tests)