

# How Does the Ideological Composition of the Electorate Influence Attack Advertising Strategies?\*

Kevin K. Banda  
Assistant Professor  
University of Nevada, Reno  
kbanda@unr.edu

Jason H. Windett  
Assistant Professor  
Saint Louis University  
jwindett@slu.edu

## Abstract

We argue that the attack advertising strategy deployed by candidates is a function of their opponents strategies and the ideological preferences of the state electorate. Candidates should respond to attacks by their opponent, yet the degree of response is conditional upon the moderate population. As states become more moderate, candidates should become less responsive to their opponents attacks. We test our theory using advertising data on candidate-sponsored television spots in 149 U.S. Senate and gubernatorial elections. We test our theory dynamically and show strong evidence that both Democratic and Republican candidates respond to increased attacks by their opponents and that this relationship is conditioned by the size of the moderate population within a state. This conditioning, however, is asymmetric: Democrats' level of responsiveness decreases while Republicans degree of responsiveness counterintuitively increases as the moderate population of a state increases. Candidates behavior is thus informed by the electorate and their opponents.

---

\*Paper presented at the 2016 American Political Science Association Conference, September 1-4, Philadelphia, PA. We thank the panel participants for their helpful feedback.

Among the many factors that candidates must consider when choosing their campaign strategies, two in particular stand out: what preferences does the electorate hold and what strategies are their opponents employing? Candidates who wish to win elections should account for the preferences of their constituents (e.g. Downs 1957) or risk the wrath of voters (Canes-Wrone, Brady, and Cogan 2002). Whereas candidates would likely prefer to rely on a single campaign strategy designed to maximize their chances of winning by successfully appealing to citizens, there is evidence that candidates alter their strategies in response to those employed by their opponents (e.g. Kaplan, Park, and Ridout 2006; Sigelman and Buell 2004; Banda 2015), likely for a number of reasons such as avoiding criticism for ignoring the opposition and, when faced with attacks upon their policy proposals and personal characteristics, to respond to the charges leveled against them. Indeed, Carsey et al. (2011) find that candidates anticipate and respond to increases in their opponents' attack advertising by airing more attacks of their own.

The literature is silent, however, on how these two sources of electoral pressure jointly influence campaign behavior. In this research, we address the following question: how does the ideological makeup of the electorate condition candidates' proclivities to respond to their opponents' attacks? We argue that candidates should be less responsive to attacks as the proportion of their electorates that identify as ideological moderates increases relative to those smaller shares of moderates. Moderates tend to hold fewer extreme positions on issues; indeed, they may hold fewer actual positions on issues in general. They should thus be less interested in the bickering generated by attack advertising. Thus, candidates who face more moderate electorates should be less apt to respond to their opponents attacks than those facing less moderate electorates.

Using advertising data coded by the Wisconsin Advertising Project drawn from 149 state-level contests — U.S. Senatorial and gubernatorial campaigns, in this case — and state-level mass ideological preferences collected by Enns and Koch (2013), we find strong

evidence supporting our theory. As expected given previous research, candidates respond to increasing attacks sponsored by their opponents by increasing the degree to which their own advertising strategy consists of attacks. But this tendency becomes weaker for Democrats and stronger for Republicans as the electorates they face become increasingly made up of ideological moderates. This finding suggests that the degree to which candidates are mindful of the strategies employed by their opponents is strongly conditioned on their beliefs about the preferences of the voters from whom they are seeking support and that partisanship leads to asymmetric response strategies. Our findings have important implications for candidate strategy and the key roles played by both opponents and voters in the generation of campaign advertising agendas.

## 1 Campaign Messaging

Candidates make strategic decisions about how to present themselves and their opponents to citizens in their campaign communications because, at least on the margins, campaign behavior influences election outcomes (e.g. Holbrook 1996; Wlezien and Erikson 2002; Franz and Ridout 2007; Hillygus and Shields 2008; Box-Steffensmeier, Darmofal, and Farrell 2009; Vavreck 2009). Campaign communications are primarily designed to convince citizens to support the sponsoring candidate. This is often achieved by appealing to citizens' underlying predispositions (Berelson, Lazarsfeld, and McPhee 1954) and by teaching them about the state of the country (Gelman and King 1993; Erikson and Wlezien 2012). Campaigns may also alter the uncertainty with which citizens view candidates (Franklin 1991; Alvarez 1997; Peterson 2004, 2009) and may prime them to think about their vote choice in particular ways (Bartels 2006, but see Lenz 2009). Furthermore, campaign coverage by the news media can also inform citizens' perceptions of campaigns and issues (Kinder 1998*a,b*; Iyengar and Simon 2000), though citizens often select media outlets that present information in ways

that fit with their preexisting views (Arceneaux and Johnson 2013).

Most candidates running for high level political offices primarily attempt to communicate with voters through the use of television advertising. They do so in order to attempt to persuade citizens to support them on Election Day (Goldstein and Ridout 2004). Some researchers suggest that campaign advertising promotes democratic citizenship because it can expose people to emotional and informational content that leads to a more engaged, informed, and participatory citizenry (e.g. Freedman, Franz, and Goldstein 2004; Mattes and Redlawsk 2015). Setting these larger effects aside, the extant research at minimum suggests that television ads have both short (Gerber et al. 2011; Hill et al. 2013) and long-term (Banda and Windett 2016) effects on public opinion.<sup>1</sup>

While the choice of which issues to discuss may be important (see Riker 1990; Petrocik 1996; Carsey 2000; Simon 2002), one of the more important characteristics of campaign communications is messaging tone. Negative messages — typically conceived of as those that focus on a candidate’s opponent — may be particularly important. This is because, as Geer (2006) argues, democratic elections may not function well in the absence of negativity. Without access to negative information, citizens may be unable to make well informed voting decisions. If challengers cannot criticize incumbents, citizens may have little reason to support political newcomers, and thus the representative connection between elected officials and their constituents may weaken. In terms of negativity’s impact on elections, this suggests that candidates may use negative messages to erode support for their opponents (Skaperdas and Grofman 1995) and more generally may affect candidate selection (Krupnikov 2012). Negative messaging may also be advantageous in the sense that it may lead to greater visibility among potential voters in that it is more likely to be covered by the news media (Iyengar and Simon 2000).<sup>2</sup>

---

<sup>1</sup>There is also some evidence that other forms of campaign communications like direct mailers have short-term effects on public opinion, too (see Doherty and Adler 2014).

<sup>2</sup>The literature on the effects of negative messaging on public opinion and political behavior is voluminous.

Though candidates likely wish to choose a single advertising strategy that they believe will maximize their chances of winning their elections, there is strong evidence that they are unable to do so. The extant literature mostly shows that candidates tend to shift their advertising strategies in response to their opponents' strategies in both primary (Banda and Carsey 2015) and general elections (Kaplan, Park, and Ridout 2006; Banda 2013; Windett 2014; Banda 2015). Indeed, candidates may respond to their opponents in an attempt to reframe issues on which they are disadvantaged and thus try to portray themselves in a more sympathetic manner (Kinder 1998*a*; Chong and Druckman 2007).

Whereas the aforementioned research focuses on individual or families of related issues, Carsey et al. (2011) finds evidence that candidates respond to one another's advertising in general; when one candidate airs more advertisements of any type, that candidate's opponent responds by airing more ads of their own. They further find that candidates similarly respond to changes in their opponents' frequency of negative advertising.

Negative messages typically contain criticisms of the opposing candidate and may be more likely than positive messages — those that focus on the sponsoring candidate — to provoke responses from the targeted candidates who may wish to defend their character or records. Thus negative messaging may offer candidates a particularly powerful avenue by which to manipulate their opponents' own messaging strategies (e.g. Damore 2002). Indeed, Carsey et al. (2011) show evidence that candidates respond to changes in their opponents' frequency of negative advertising by similarly changing their own negative advertising strategies.

It thus appears as if negative messaging may be an effective means by which candidates can influence the strategies used by their opponents. But while there is evidence that higher levels of negative messaging by one candidate are associated with higher levels of negativity utilized by the opposing candidate, the literature is silent on what, if anything, might condition this relationship. We next discuss the possibility that this campaign responsiveness

---

See Lau, Sigelman, and Rovner (2007) and Lau and Rovner (2009) for thorough overviews.

may be conditioned by the self-placed ideological preferences of the electorate that candidates face.

## 2 Citizen Ideology, Attack Advertising, and Candidate Responsiveness

Whereas one strain of the literature seems to suggest that candidates should not engage with one another and should instead focus on the conflicts or issues that suit them best (e.g. Schattschneider 1960; Carsey 2000; Simon 2002), another larger strain consistently finds that candidates do respond to one another in various ways (Kaplan, Park, and Ridout 2006; Sigelman and Buell 2004; Carsey et al. 2011; Banda 2015). Building on the latter and focusing on negative messaging, we argue that candidates should respond to one another for a variety of reasons, which we outline below. More specifically, our argument centers on attack advertising, i.e. advertisements that contain only criticisms of the opposing candidate. This type of messaging is fundamentally different than contrast messaging, which compares the sponsor with their opponent on one or more dimensions.<sup>3</sup>

Candidates should respond to one another's attacks for several reasons. First, they should respond in order to avoid criticism from the news media. Attacks that go unanswered may be viewed by the media and, more importantly, by citizens as being legitimate lines of criticism. If candidates remain silent after being attacked, support for that candidate might decrease, thus candidates should respond to avoid this possibility by "setting the record straight." Candidates might directly respond to their opponents charges with a counterargument or they might seek to reframe the issue in a way that benefits them. Democratic candidate Bill

---

<sup>3</sup>Some research treat attack and contrast messaging as substantively identical (Franz et al. 2007; Shah et al. 2007; Wichowsky and Niebler 2010; Ridout and Fowler 2012), but we believe that this is conceptually problematic because the two types of messages contain fundamentally different kinds of information.

Clinton did during the 1992 presidential campaign, during which he talked about crime in terms of prevention rather than in terms of the standard Republican-advantaging frame of punishment.<sup>4</sup>

Second, candidates may wish to shift the focus of citizens and the news media away from their own perceived weaknesses and towards the weaknesses of their opponent. In other words, they may respond to an attack against them centering on one issue by attacking their opponent on a different issue. This kind of response thus represents an attempt to alter the levels of salience of the attacks against and made by a given candidate. If successful, the attack sponsored by the candidate will be more salient than the attacks leveled against them.

Third, there is evidence that attacks about ideological extremity can alter citizens' perceptions of the ideologies of both the target and the sponsor of such messages (Banda 2014). For example, when a Democrat attacks her Republican opponent for being too conservative, the Republican is viewed as being more conservative on average. But at the same time, this message also shifts citizens' perceptions of the Democrat such that they tend to view her as being more liberal. Thus candidates may wish to respond to their opponents' attacks in order to moderate perceptions of their ideological image in order to best appeal to the median voter (Downs 1957).<sup>5</sup> These arguments lead to the following hypothesis:

*Hypothesis 1: Candidates will respond to more frequent attacks from their opponent by attacking more.*

We further argue that candidates' proclivities of responding to their opponents' attacks

---

<sup>4</sup>Jerit (2008), though, finds that counterarguments can be more effective than attempts to reframe political problems.

<sup>5</sup>Rabinowitz and Macdonald (1989) argue that, contrary to the Downsian paradigm, moderate positions may not be advantageous. Instead, they put forth a directional theory of candidate choice, one in which citizens are more likely to view clearer and more extreme, but not *too* extreme, positions as more appealing. That said, this perspective does not necessarily negate our assumptions, as candidates in a directional world may still wish to inform citizens' ideological views of them.

should be conditioned by the ideological makeup of their constituencies. More specifically, while our general expectation is that candidates will attack their opponents more as their opponents attack them at higher rates, we argue that candidates will be less responsive to these attacks as the percentage of moderates who make up their constituencies increases. This is because self-identified moderates should be less open to attack messaging, which is generally viewed negatively by citizens (Hitchon and Chang 1995). Moderates tend to have fewer extreme preferences and tend to be less enthusiastic about the more rough and tumble characteristics of party politics during campaign cycles relative to those with more extreme ideological dispositions. Thus seeing candidates attack at higher rates may turn them away from those candidates as they come to view the candidates as more ideologically extreme (e.g. Banda 2014) and thus as more threatening given the moderate citizens' own less extreme preferences. In other words, attacks may lead ideological moderates to view one or both candidates as increasingly ideologically extreme, which may further lead them to fear the potentially extreme policy outcomes such candidates might seek out should they win.

We should also note that partisans who identify with the opposite party relative to an attacking candidate are also likely view that candidate as more extreme in the direction associated with the candidate's party and thus as more threatening when they are exposed to a greater number of attack messages. This tendency, however, may be less problematic from the candidate's perspective because it is unlikely that she would be very successful in her attempt to convince many partisans to defect from their preferred party's candidate. The limitation of this caveat is that a partisan who is ideologically incongruent with her party — and thus more moderate relative to party norms — may be persuadable. Thus candidates seeking to appeal to this kind of voter may wish to avoid fostering an image of ideological extremity in order to maximize their chances of earning this vote, and one way to achieve this goal is to attack their opponents less frequently.

This is not to say that candidates who face moderate electorates will avoid attacks entirely; on the contrary, we expect them to attack for the myriad of reasons that we previously discussed. To be clear, we expect that candidates facing electorates made up of many moderates should merely be *less* responsive to their opponents' attacks relative to candidates who are competing for the support of electorates that are primarily made up of people with more extreme ideological preferences. Our hypothesis can be stated more formally as follows:

*Hypothesis 2: Candidates will be less responsive to their opponents' attacks as the proportion of moderates in their electorates increases.*

### 3 Research Design

We test our theory using advertising data from 91 U.S. Senate and 58 gubernatorial elections collected by the Wisconsin Advertising Project (WiscAds) in 2000, 2002, 2003, 2004, and 2008.<sup>6</sup> These data contain information on the date, time, and television station on which each political advertisement ran in the 100 largest U.S. media markets in the 2000 - 2004 data and all media markets in the 2008 data. We use all U.S. Senate and gubernatorial contests in which both major parties were represented by a candidate.<sup>7</sup> In the end, we include observations from every state for at least one contest.

Each advertisement airing is coded for a large number of characteristics, the most important of which for this research is the tone of the ad. WiscAds codes the primary purpose

---

<sup>6</sup>The data were obtained from a project of the University of Wisconsin Advertising Project includes media tracking data from TNSMI/Campaign Media Analysis Group in Washington, D.C. The University of Wisconsin Advertising Project was sponsored by a grant from The Pew Charitable Trusts. The opinions expressed in this article are those of the authors and do not necessarily reflect the views of the University of Wisconsin Advertising Project or The Pew Charitable Trusts.

<sup>7</sup>First, we treated Paul Wellstone and Walter Mondale as a single candidate in Minnesota's 2002 Senate race due to the former's death late in the campaign. Excluding the race from our analysis does not alter the substantive findings we report in this research. Second, analyzing Senate and gubernatorial elections separately rather than jointly does not lead us to observe different results; they are substantively identical either way. We thus present the joint results for the sake of brevity.

of each advertisement as attacking a candidate, promoting a candidate, or contrasting the candidates. Attack advertisements contain information that is only relevant, at least explicitly so (but see Banda 2014), to the target of the ad. They are entirely negative in nature. Contrast ads, on the other hand, contain some explicit information about both the opposing candidate and the sponsoring candidate. They are thus only partially negative. Because these two types of advertisements provide citizens with fundamentally different kinds of information, citizens may be influenced by them in different ways. Thus we only treat ads coded as attacks as being negative (see also Martin 2004; Ridout and Franz 2011; Paul and York 2015; Banda and Windett 2016), which we label as “attack” ads from henceforth.

The dependent variable in our analysis is the proportion of a candidate’s ads that were coded as attacks in a given week. We analyze 1,180,637 candidate-sponsored advertisement airings across these 149 general election contests.<sup>8</sup> Democratic candidates sponsored 579,496 of these ads while the remaining 601,141 were sponsored by Republican candidates. Nearly 23.6% of Democratic ads and approximately 25.2% of Republican-sponsored ads were coded as attacks.<sup>9</sup> The WiscAds data includes variables indicating whether or not advertisements focus on policy, personal characteristics, or both. Only about 5% and 4.5% of Democratic and Republican-sponsored ads respectively were coded as containing only personal attacks. The remaining attack ads utilized policy-based attacks or both policy and personal attacks.

Because we are interested in observing the degree to which a candidate responds to her opponent’s attack advertising agenda and how this response is conditioned by the aggregate ideological dispositions of the electorates they face, we have two primary independent variables of interest. The first is the proportion of attack ads aired by a candidate’s opponent

---

<sup>8</sup>We do not include advertisements sponsored by political parties or interest groups in our analyses because this research focuses only on the political impact of candidate strategy. We also do not include any advertisements aired by 501(c) groups, which did not become prominent parts of campaigns for federal offices until the 2004 election cycle.

<sup>9</sup>An additional 26.8% and 22.4% of Democratic and Republican-sponsored spots were coded as contrast ads. All but a very small number of the remaining advertisements were coded as positive.

in a given week, which is measured as described in the previous paragraph. The second independent variable is derived from Enns and Koch’s (2013) measure of state ideology, or the average location on a unidimensional ideology scale for citizens in each state. These data include the proportion of a state that is either liberal or conservative. We construct a metric for the proportion of the electorate that is moderate by subtracting from 100 the sum of the proportion that is either liberal or conservative. The range of this variables runs from about 35 to 55 percent. We interact this value with the opposition candidate’s proportion of attack ads to allow us to observe the effects of opposition advertising strategy conditioned by a state’s aggregate ideological preferences on a candidate’s own advertising strategy. We control for the year in which the contest occurred using a series of dummy variables. Table 1 contains the summary statistics for all of the variables that we use in our analysis.

Table 1: Summary Statistics

	Mean	Standard deviation
Democratic attacks	13.77	27.27
Republican attacks	15.15	29.22
% state moderates	44.41	4.13
Year: 2002	0.36	0.48
Year: 2003	0.02	0.11
Year: 2004	0.16	0.37
Year: 2008	0.25	0.44

We use a general error correction model (ECM) when estimating our equations in order to test our hypothesis.<sup>10</sup> ECMs can be used to analyze data that is integrated or stationary (De-Boef and Keele 2008) and the general ECM is algebraically equivalent to an auto-regressive distributed lag model (ADL). Both types of models allow researchers to observe both the contemporaneous and the long-run effects of a change in an independent variable on the dependent variable.

<sup>10</sup>Grant and Lebo (2016) argue that ECMs are often misunderstood in the literature and make several recommendations for practitioners. We address their concerns in the appendix.

The dependent variable of an error correction model must be the first difference rather than the value of the variable at time  $t$ . In a single time series, differencing forces stationarity by extracting any first-order autocorrelation that may exist within the series. As Wooldridge (2000, chapter 14) notes, first differencing pooled time series data essentially removes the differences between the mean levels of the variables across the pooling unit, which in this case is across contests. First differencing of pooled time series data is identical to including unit fixed effects when there are only two time points. When there are more than two time points, first differencing is not the same as including unit fixed effects, but they are similar to one another. First differencing therefore essentially removes any unit effects that might exist across the campaigns we analyze. Any constant differences across campaigns like the presence of an incumbent, state characteristics, or pre-campaign expectations of competitiveness are effectively controlled for by this design.

This framework also requires the inclusion of a lagged dependent variable, the coefficient of which estimates the rate of error correction, and both first differences and lagged levels of the remaining time serial covariates. Our theory centers on the influence of one candidate's advertising strategies on that of their opponent and thus we must account for the possibility that that the candidates' strategies inform the behavior of one another simultaneously. We use a seemingly unrelated regression (SUR) approach to account for this possibility.<sup>11</sup> Because we are interested in the interaction between candidates' advertising strategies, we control for possible additional simultaneous unmodeled correlation in the behavior of the candidates by using seemingly unrelated regression (SUR). SUR allows the error terms of each equation in a model to be contemporaneously correlated with one another. We thus estimate a two equation SUR as follows:

$$\Delta DemNegAds_{it} = \beta_0 + \beta_1 DemNegAds_{it-1} + \beta_2 \Delta RepNegAds_{it} + \beta_3 RepNegAds_{it-1} + \beta_4 State \% Moderates_{t-1} +$$

---

<sup>11</sup>Multiple equation vector autoregression models are equivalent to SUR models as long as the models exhibit the same lag structure in each equation (Hamilton 1994, 314).

$$\beta_5 \text{State}\% \text{Moderates}_{t-1} * \text{RepNegAds}_{it-1} + \beta_5 \text{State}\% \text{Moderates}_{t-1} * \Delta \text{RepNegAds}_{it} + \epsilon$$

$$\Delta \text{RepNegAds}_{it} = \phi_0 + \phi_1 \text{RepNegAds}_{it-1} + \phi_2 \Delta \text{DemNegAds}_{it} + \phi_3 \text{DemNegAds}_{it-1} + \phi_4 \text{State}\% \text{Moderates}_{t-1} + \phi_5 \text{State}\% \text{Moderates}_{t-1} * \text{DemNegAds}_{it-1} + \phi_5 \text{State}\% \text{Moderates}_{t-1} * \Delta \text{DemNegAds}_{it} + \epsilon$$

“*DemNegAds<sub>it</sub>*” and “*RepNegAds<sub>it</sub>*” respectively represent the Democratic and Republican proportion of advertisements coded as attacks in contest  $i$  and week  $j$ . “*State%Moderates<sub>it-1</sub>*” refers to the percent of a state population that is not ideologically liberal or conservative in a given year.

The coefficients for the differenced independent variables estimate the average contemporaneous change — i.e. the change in the dependent variable at time  $t$  — in the dependent variable that results from a one unit increase in the covariate. The coefficients of the lagged endogenous variables captures part of a second short-term effect,<sup>12</sup> this time at time  $t + 1$ . These effects may not be theoretically interesting on their own, but when the coefficients that estimate them are divided by the negative of the coefficient generated for the lagged dependent variable, they generate the long run multiplier (LRM), which represents the total contemporaneous and long-run effect of a one unit increase in a time serial covariate on the dependent variable.<sup>13</sup> For this reason, the LRMs are the most — but not the only — interesting quantity produced by the model given the hypotheses we test.

## 4 Results

We begin our analysis with the results of our SUR models in table 2. Columns 1 and 2 of Table 2 reports the coefficient estimates and standard errors for the Democratic attack strategy, while Columns 3 and 4 report the coefficient estimates and standard errors for

---

<sup>12</sup>Many scholars refer to these coefficients as long-term effects because they can be transformed algebraically to produce estimated effects on the dependent variable across additional future time periods.

<sup>13</sup>We calculate the standard errors of each long run multiplier using the Bewley (1979) transformation (see also DeBoef and Keele 2008).

the Republican attack strategy. The estimates for the ECM are difficult to interpret in a straightforward manner given the presence of continuous by continuous interactions. We are primarily interested in the overall long run effect of the Republican strategy and proportion of the state population that are political moderates. The point estimates in Table 2 are not especially useful for this purpose. As such, we estimate the long run multiplier and marginal effects for the opposition’s attack strategy and the percentage of moderates in a state.

Table 2: Negative Advertising and Ideological Composition of the Electorate in Gubernatorial and Campaigns, 2000 - 2004, 2008

	Democratic Attacks		Republican Attacks	
LRM for Democratic attacks			-0.532*	(0.257)
LRM for % state moderates $\times$ Democratic attacks			0.024*	(0.006)
LRM for Republican attacks	1.244*	(0.213)		
LRM for % state moderates $\times$ Republican attacks	-0.020*	(0.005)		
Democratic attacks $_{t-1}$	-0.387*	(0.023)	-0.196	(0.256)
$\Delta$ Democratic attacks			0.452	(0.297)
Republican attacks $_{t-1}$	0.481	(0.213)	-0.368*	(0.021)
$\Delta$ Republican attacks	0.683*	(0.259)		
% state moderates	-0.372	(0.310)		
% state moderates $\times$ Democratic attacks $_{t-1}$			0.009	(0.006)
% state moderates $\times$ $\Delta$ Democratic attacks			-0.004	(0.007)
% state moderates $\times$ Republican attacks $_{t-1}$	-0.008	(0.005)		
% state moderates $\times$ $\Delta$ Republican attacks	-0.009	(0.006)		
Year: 2002	-0.406	(2.393)	0.239	(2.493)
Year: 2003	1.761	(6.428)	0.202	(6.689)
Year: 2004	0.047	(2.351)	-1.301	(2.450)
Year: 2008	-3.721	(3.443)	0.165	(3.587)
Intercept	21.872	(15.524)	-4.421	(16.148)
Bayesian Information Criteria	26,317.840			
N	1,465			

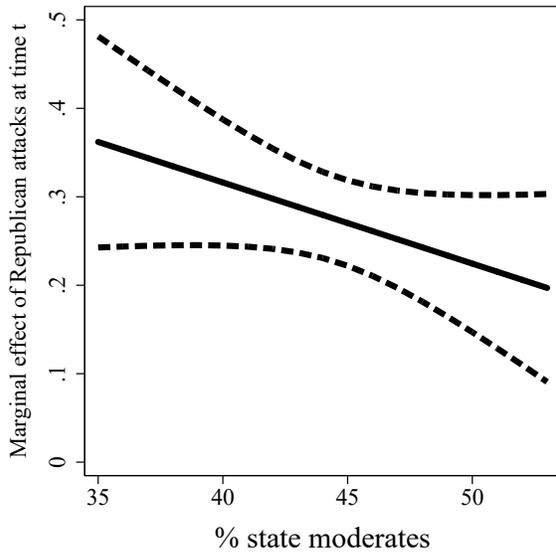
Estimated ordinary least squares coefficients are reported along with standard errors in parentheses. Long-run multipliers and their standard errors were generated using the Bewley (1979) transformation.

\* =  $p \leq 0.05$  (two tailed)

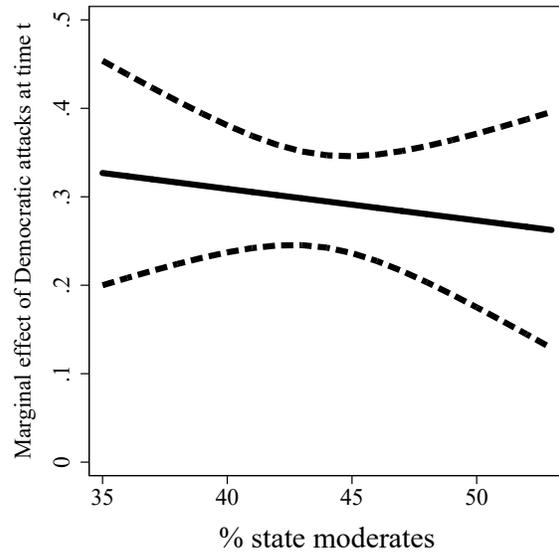
We turn first, however, to the contemporaneous effects of a candidate’s opponent’s attack strategy on their own proclivities to air attack ads. These effects are captured by the

estimated coefficients for the first differences of the Democratic and Republican attacks and the interaction between these variables and the percent of a state that is made up of moderates. These coefficients are not particularly informative on their own due to the nature of continuous by continuous interactions, so we estimate and plot in Figure 1 the marginal effects of the opposition’s attacks on the sponsor’s attacks across all observed values of the percentage of a state’s electorate that identifies as ideological moderates. Panel (a) shows these effects for Democratic sponsors while Panel (b) shows the effects for Republican sponsors. We plot the marginal effects in these and all future plots using solid lines and their associated 95% confidence intervals using dashed lines. If a confidence interval overlaps with zero on the y-axis, that indicates that the marginal effect at that value of the percent of state moderates — plotted along the x-axis — is not statistically discernible from zero at a traditional ( $p \leq 0.05$ ) level of significance.

These marginal effects offer strong initial support for Hypothesis 1 and some very limited support for Hypothesis 2. Both plots show clear evidence — in the form of positive marginal effects — that candidates respond to increases in the percentage of attacks aired against them by airing more attacks of their own in the same which in week their opponents’ attack strategies change. They also show some suggestive evidence that the degree to which candidates respond to their opponents’ attacks declines as the percent of the electorate that is moderate increases. For Democratic candidates, the marginal effect of a one unit increase in the percent of Republican attack ads aired against them decreases from about 0.36 at the lowest value of percent of state moderates to approximately 0.2 at the highest value of the state-level measure of ideological moderates. For Republican candidates, the marginal effects at these same values of percent of state moderates are about 0.33 and 0.26 respectively. All of the marginal effects in both plots differ significantly from zero. That said, the marginal effects at the highest and lowest values of state moderates fail to differ signif-



(a) Democratic Candidates



(b) Republican Candidates

Figure 1: Marginal effects (solid line) of negative advertising and ideological composition on sponsor attack agenda and 95% confidence intervals (dashed lines) at time  $t$  by party. Values generated from the results reported in Table 2.

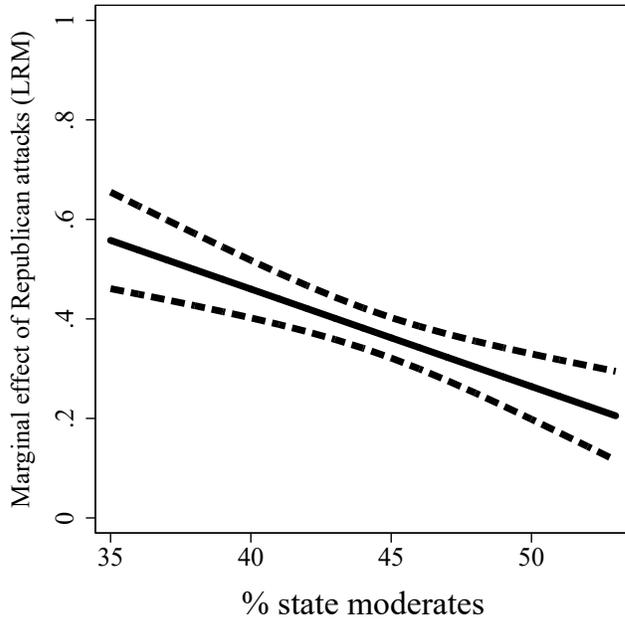
icantly from one another among both Democratic and Republican candidates.<sup>14</sup> In other words, the direction of state moderates on the degree of candidates' levels of responsiveness to their opponents attacks matches our theoretical expectations, the statistical evidence for Hypothesis 2 is insufficient for these contemporaneous effects. That said, these results on the whole suggest that when a candidate's opponent increases their frequency of attacks in a given week, that candidate responds by increasing their own frequency of attack advertising immediately during that same week.

Next, we turn to the key portion of our analysis: the total effects across *all* weeks — not just the first week — of a change in a candidate's opponent's attacks on the candidate's own attacks. We can observe these effects using the LRMs reported in Table 2. Once again, we must calculate and report a series of marginal effects due to the interactive nature of our model. We report the marginal effects stemming from our LRMs in Figure 2. More specifically, we plot the marginal effects of a one percentage point increase in the opposing candidate's attack advertising agenda across each observed value of percent state moderates.

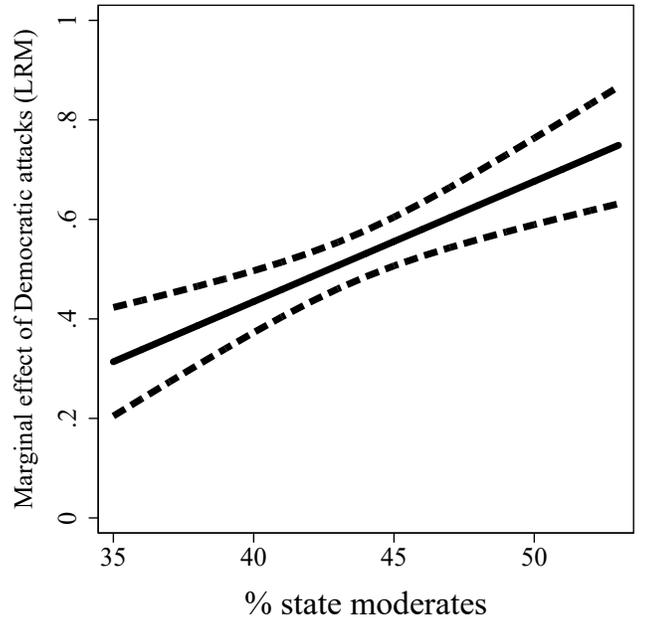
Both sets of marginal effects show strong support for Hypothesis 1; all of the marginal effects are positive and differ significantly ( $p \leq 0.05$ ) from zero, thus indicating that candidates increase the share of their advertising agendas that they devote to attacks as their opponents increase the degree to which they focus on attacks of their own. The marginal effects for Democratic candidates shown in Panel (a) also support Hypothesis 2 because they decrease as the percent of state moderates increases. The marginal effect of Republican attacks on Democratic sponsor attacks is approximately 0.56 and 0.21 at the lowest and highest levels respectively of percent of state moderates. In other words, Democrats become less responsive to their opponents' attacks as their constituents are increasingly made up of ideological moderates.

---

<sup>14</sup>The p-values estimated by these tests of equivalence are 0.11 for Democratic and 0.60 for Republican candidates.



(a) Democratic Candidates



(b) Republican Candidates

Figure 2: Long run multiplier marginal effects of negative advertising and ideological composition by party. Values generated from the results reported in Table 2 using the Bewley (1979) transformation.

The marginal effects for Republicans presented in Panel (b), however, do not support Hypothesis 2. These marginal effects are always positive, but their magnitude increases as the percent of state moderates increases. The marginal effect of a one unit increase in Democratic attacks on Republican attacks is 0.32 at the lowest level of percent of state moderates. But at the highest level, the marginal effect is about 0.75. This is the opposite of what we would expect to observe if Hypothesis 2 is correct. Thus it appears as if, across all time periods, Democrats become less responsive while Republicans become more responsive to their opponents's attacks as the percentage of state moderates increases.

Next, we discuss the substantive impact of these effects. We plot the total over time effects of a one standard deviation unit increase in the opponent's percentage of weekly attack ads (29.2 for Democratic sponsors and 27.3 for Republican sponsors) at the minimum (35.7), median (44.1), and maximum (53.1) values of our percent of state moderates measure in Figure 3. The gray bars show the effects for Democratic candidates while the black bars present the effects for Republican candidates.

As expected, among Democratic candidates, the total response to a one standard deviation unit increase in the Republican's attack percentage leads to greater responsiveness at lower levels of percent of state moderates. The level of responsiveness increases by about 16%, 11%, and 6% at the minimum, median, and maximum values of percentage of state moderates. The pattern is reversed for Republican candidates with increases in attack advertising of approximately 9%, 14.5%, and 21% at these same values of percentage of state moderates.

While the quantities reported above are substantively meaningful, they do not describe the dynamics at play in this process. We calculate and plot in Figure 4 the distributed lagged effects of a one standard deviation increase in a candidate's opponent's attack percentage in the same way as above. Panel (a) shows the distributed lags for Democrats while Panel

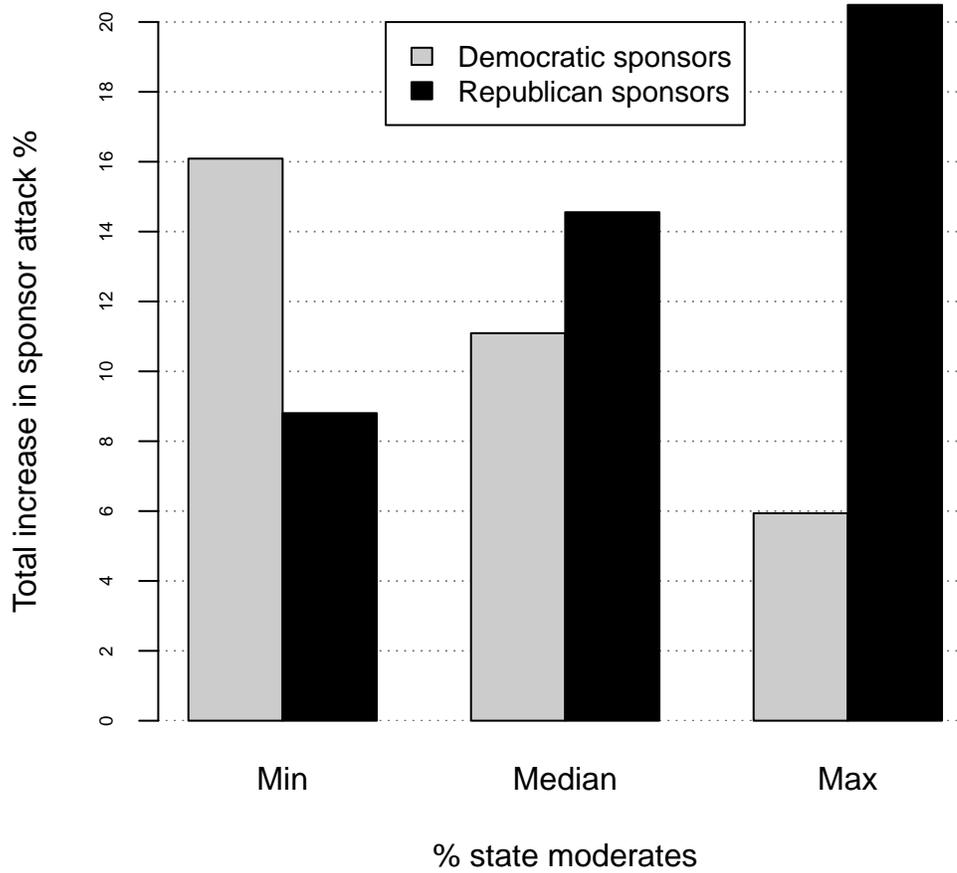


Figure 3: Total over time effects of a standard deviation unit increase in the opposing candidate's attack strategy at the minimum, median, and maximum values of percentage of state moderates. Values generated from the results reported in Table 2.

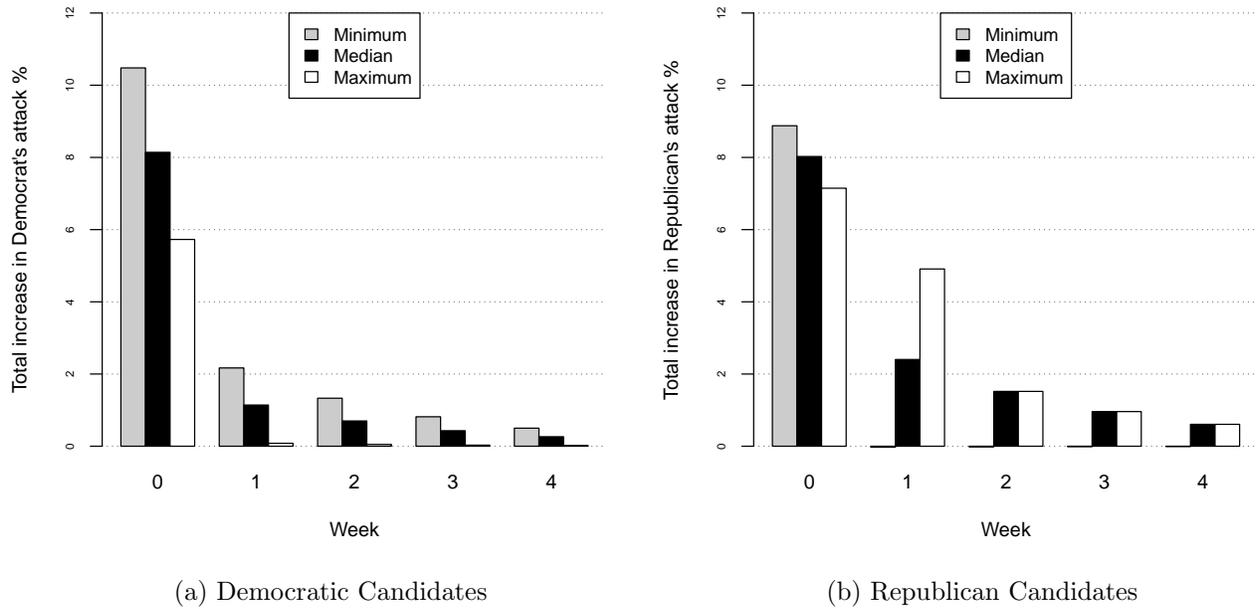


Figure 4: Distributed lag effects of a one standard deviation unit increase in the opposing candidate’s attack strategy at the minimum, median, and maximum values of percentage of state moderates. Values generated from the results reported in Table 2.

(b) shows them for Republicans. The gray bars represent the effects at the percentage of state moderate’s minimum value, the black bars for its median, and the white bars for its maximum value.

Turning first to Panel (a), we see that regardless of the level of percentage of state moderates, the time period in which most of the total effect of a standard deviation increase in the Republican’s advertising agenda on the Democrat’s agenda occurs contemporaneously in week 0. The general pattern suggests that Democrats become less responsive to their opponents’ attacks as the percentage of state moderates increases across individual time periods. For example, Democratic candidates in states with the median level of percentage

of state moderates respond to this increase in their opponents' attacks in week 0 by increasing their own attacks by about 8.1% immediately in week 0, 1.1% in week 1, 0.7% in week 2, 0.4% in week 3, and 0.3% in week 4. Across these five weeks, the total increase in the Democrat's attack agenda is approximately 10.7%. In other words, about 97% of the total increase of 11 percentage points described previously in Figure 3 is observed by the end of the fourth week after the Republican increases their attack agenda by a standard deviation at the median level of percentage of state moderates.

Across the five weeks plotted in Panel (a), the sum of the observed effects at the minimum and maximum levels of percentage of state moderates is about 15.3% and 5.9% respectively. Recall that the total effects for these changes in the Republican candidate's strategy as calculated above was 16% and 6%. Thus across these five weeks, we observe 96% and 98% of the total effects estimated to play out over all time periods. The responsiveness of Democratic candidates, then, appears to be mostly finished playing out by a month after the change in strategy. These dynamics do not appear to be particularly dependent on the percentage of the state's electorate that identifies as moderate.

The distributed lag effects for Republicans — plotted in Panel (b) of Figure 4 — show the opposite pattern, again as suggested by the results initially presented in Figure 3. Recall that a one standard deviation unit increase in Democratic attacks on average lead to a total increase on the Republican's attack percentage of 9% and 21% at the minimum and maximum levels of percent of state moderates. Summing across the effects distributed across the five weeks plotted in Panel (b), we observe a total increase of 8.8% when the percent of state moderates is at its minimum and a total increase of 15.1% when it is at its maximum. These represent 98% and 72% of the total effects calculated above. For Republicans, it appears as if the effects of changes in Democratic candidates' advertising strategies play out more slowly as the makeup of the electorate becomes more moderate.

## 5 Conclusion

Our analysis provided strong evidence in favor of Hypothesis 1; candidates appear to respond to increases in attacks sponsored by their opponents by airing a greater share of their own attacks. We also found strong evidence that the degree to which candidates are responsive to their opponents' attacks is conditioned by the percentage of the electorate that self-identifies as moderate. However, the evidence only favors Hypothesis 2 among Democratic candidates, who become less responsive as their electorates become more moderate. Republicans, on the other hand, become more responsive as this occurs, a finding that is at odds with our expectations.

Why is this? There are several possibilities. First, the make up of the parties' coalitions are different (e.g. Grossman and Hopkins 2016). It could be the case that Democratic and Republican identifiers respond to attacks in different ways. It is possible that Republican donors and activists make different demands of their candidates than do those who identify with the Democratic Party. Second, self-identified moderates may respond to attacks by Democrats and Republicans differently. Perhaps the types of attacks used by Republicans are more appealing to these people than are those employed by Democrats, and thus it makes sense for Republicans to become more responsive as the percentage of moderates in a constituency increases. A third possibility is that the more homogeneous nature of the Republican Party allows Republicans to make more ideological attacks against their opponents. These messages could be symbolic in nature and thus may appeal to peoples' symbolic rather than operational preferences (Ellis and Stimson 2012). Thus they might be effective among moderates, who may hold weak preferences. A larger proportion of moderates in an electorate may allow Republican symbolic attacks to be more effective. Future work should explore these possibilities.

Our results not only provide more evidence that the advertising strategies of candidates

are informed by the strategies employed by their opponents, but also further show that candidates' levels of responsiveness to their opponents are also conditioned by the electorates they face. This research directly ties what has been up to this point largely disparate literatures.

These results produce several implications. First, candidates closely monitor both the behavior of their opponents and the preferences of citizens, and they perform these tasks simultaneously. Both phenomena are important and contribute to the strategies that candidates ultimately employ in their political advertising. It is further plausible that this behavior may be evident in arenas beyond just advertising. Perhaps the content of candidates' speeches and direct mailers are similarly responsive to citizen preferences and the strategies of the opposition.

Second, candidates may be similarly responsive to outside groups. In contemporary campaigns, many organized groups air advertisements of their own, many of which contain attacks. Candidates may respond to the attack leveled at them by these groups, either in their own ads or through other forms of campaigning. Furthermore, this responsiveness may be similarly conditioned by the proportion of people in the electorate who identify as moderates. Future research might examine this possibility.

A third important point is methodological in nature. Researchers employing dynamic analyses should interpret them in as great as detail as possible to best inform their readers. In this analysis, we reported a series of distributed lagged effects. These better communicate the dynamic nature of candidate responsiveness in advertising relative to, say, the raw LRMs. This kind of information can be quite meaningful from a substantive perspective (see also Banda and Windett 2016).

Future research might examine the degree to which advertising responsiveness is conditioned by public preferences in several different contexts like total advertising, personal vs

issue-based attacks, contrast advertising, and positive advertising. Researchers might also examine how candidate characteristics condition responsive. For example, to what extent does incumbency status, candidate sex, or candidate gender matter? Future analyses might also take a more comparative perspective. Learning more about the strategic considerations underlying candidate behavior would help to expand our understanding of the complexities of campaigns and elections.

## References

- Alvarez, R. Michael. 1997. *Information and Elections*. Ann Arbor: University of Michigan Press.
- Arceneaux, Kevin, and Martin Johnson. 2013. *Changing Minds or Changing Channels? Partisan News in an Age of Choice*. Chicago, IL: University of Chicago Press.
- Banda, Kevin K. 2013. "The Dynamics of Campaign Issue Agendas." *State Politics and Policy Quarterly* 13(4): 446–470.
- Banda, Kevin K. 2014. "Issue-Based Negativity and Candidate Assessment." *Public Opinion Quarterly* 78(3): 707–720.
- Banda, Kevin K. 2015. "Competition and the Dynamics of Issue Convergence." *American Politics Research* 43(5): 821–845.
- Banda, Kevin K., and Jason H. Windett. 2016. "Negative Advertising and the Dynamics of Candidate Support." *Political Behavior* 38(3): 747–766.
- Banda, Kevin K., and Thomas M. Carsey. 2015. "Two-Stage Elections, Strategic Candidates, and Campaign Agendas." *Electoral Studies* 40(December): 221–230.
- Bartels, Larry. 2006. "Priming and Persuasion in Presidential Campaigns." In *Capturing Campaign Effects*, ed. Henry E. Brady, and Richard Johnston. Ann Arbor: University of Michigan Press pp. 78–112.
- Berelson, Bernard R., Paul F. Lazarsfeld, and William N. McPhee. 1954. *Voting: A Study of Opinion Formation in a Presidential Campaign*. Chicago: University of Chicago Press.
- Bewley, R.A. 1979. "The Direct Estimation of the Equilibrium Response in a Linear Dynamic Model." *Economics Letters* 3(4): 357–361.
- Box-Steffensmeier, Janet M., David Darmofal, and Christian A. Farrell. 2009. "The Aggregate Dynamics of Campaigns." *Journal of Politics* 71(January): 309–323.
- Canes-Wrone, Brandice, David W. Brady, and John F. Cogan. 2002. "Out of Step, Out of Office: Electoral Accountability and House Members' Voting." *The American Political Science Review* 96: 127–140.
- Carsey, Thomas M. 2000. *Campaign Dynamics: The Race for Governor*. Ann Arbor: University of Michigan Press.
- Carsey, Thomas M., Robert A. Jackson, Melissa Stewart, and James P. Nelson. 2011. "Strategic Candidates, Campaign Dynamics, and Campaign Advertising in Gubernatorial Races." *State Politics and Policy Quarterly* 11(September): 269–298.

- Chong, Dennis, and James N. Druckman. 2007. "Framing Theory." *Annual Review Political Science* 10: 103–126.
- Damore, David F. 2002. "Candidate Strategy and the Decision to Go Negative." *Political Research Quarterly* 55(September): 669–686.
- DeBoef, Suzanna, and Luke Keele. 2008. "Taking Time Seriously." *American Journal of Political Science* 52(1): 184–200.
- Doherty, David, and E. Scott Adler. 2014. "The Persuasive Effects of Partisan Campaign Mailers." *Political Research Quarterly* 67(3): 562–573.
- Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Row.
- Ellis, Christopher, and James A. Stimson. 2012. *Ideology in America*. New York: Cambridge University Press.
- Enns, Peter K., and Julianna Koch. 2013. "Public Opinion in the U.S. States: 1956 to 2010." *State Politics & Policy Quarterly* 13(3): 349–372.
- Erikson, Robert S., and Christopher Wlezien. 2012. *The Timeline of Presidential Elections: How Campaigns Do (And Do Not) Matter*. Chicago, IL: University of Chicago Press.
- Franklin, Charles H. 1991. "Eschewing Obfuscation? Campaigns and the Perception of U.S. Senate Incumbents." *American Political Science Review* 85(8): 1193–1214.
- Franz, Michael M., and Travis N. Ridout. 2007. "Does Political Advertising Persuade?" *Political Behavior* 29(December): 465–491.
- Franz, Michael M., Paul B. Freedman, Kenneth M. Goldstein, and Travis N. Ridout. 2007. *Campaign Advertising and American Democracy*. Philadelphia, PA: Temple University Press.
- Freedman, Paul, Michael Franz, and Kenneth Goldstein. 2004. "Campaign Advertising and Democratic Citizenship." *American Journal of Political Science* 48(October): 723–741.
- Geer, John G. 2006. *In Defense of Negativity: Attack Ads in Presidential Campaigns*. Chicago, IL: The University of Chicago Press.
- Gelman, Andrew, and Gary King. 1993. "Why Are American Presidential Election Campaign Polls So Variable When Votes are So Predictable?" *British Journal of Political Science* 23: 409–451.
- Gerber, Alan S., James G. Gimpel, Donald P. Green, and Daron R. Shaw. 2011. "How Large and Long-lasting Are the Persuasive Effects of Televised Campaign Ads? Results from a Randomized Field Experiment." *American Political Science Review* 105(1): 135–150.

- Goldstein, Kenneth, and Travis N. Ridout. 2004. "Measuring the Effects of Televised Political Advertising in the United States." *Annual Review Political Science* 7: 205–226.
- Grant, Taylor, and Matthew J. Lebo. 2016. "Error Correction Methods with Political Time Series." *Political Analysis* 24(1): 3–30.
- Grossman, Matt, and David A. Hopkins. 2016. *Asymmetric Politics: Ideological Republicans and Group Interest Democrats*. Oxford University Press.
- Hamilton, James D. 1994. *Time Series Analysis*. Princeton, NJ: Princeton University Press.
- Hill, Seth J., James Lo, Lynn Vavreck, and John Zaller. 2013. "How Quickly We Forget: The Duration of Persuasion Effects From Mass Communication." *Political Communication* 30(4): 521–547.
- Hillygus, D. Sunshine, and Todd G. Shields. 2008. *The Persuadable Voter: Wedge Issues in Presidential Campaigns*. Princeton, New Jersey: Princeton University Press.
- Hitchon, Jacqueline C., and Chingching Chang. 1995. "Effects of Gender Schematic Processing on the Reception of Political Commercials for Men and Women Candidates." *Communication Research* 22(August): 430–458.
- Holbrook, Thomas M. 1996. *Do Campaigns Matter?* Thousand Oaks, CA: Sage Publications.
- Iyengar, Shanto, and Adam F. Simon. 2000. "New Perspectives and Evidence on Political Communication and Campaign Effects." *Annual Review of Psychology* 51: 149–169.
- Jerit, Jennifer. 2008. "Issue Framing and Engagement: Rhetorical Strategy in Public Policy Debates." *Political Behavior* 30(1): 1–24.
- Kaplan, Noah, David K. Park, and Travis N. Ridout. 2006. "Dialogue in American Political Campaigns? An Examination of Issue Convergence in Candidate Television Advertising." *American Journal of Political Science* 50(July): 724–736.
- Kinder, Donald R. 1998a. "Communication and Opinion." *Annual Review of Political Science* 1: 167–197.
- Kinder, Donald R. 1998b. "Opinion and Action in the Realm of Politics." In *Handbook of Social Psychology*, ed. D. T. Gilbert, S. T. Fiske, and G. Lindzey. 4th ed. London: Oxford University Press pp. 778–867.
- Krupnikov, Yanna. 2012. "Negative Advertising and Voter Choice: The Role of Ads in Candidate Selection." *Political Communication* 29(4): 387–413.
- Lau, Richard, Lee Sigelman, and Ivy Brown Rovner. 2007. "The Effects of Negative Political Advertisements: A Meta-Analytic Reassessment." *The Journal of Politics* 69(October): 1176–1209.

- Lau, Richard R., and Ivy Brown Rovner. 2009. "Negative Campaigning." *Annual Review of Political Science* 12: 285–306.
- Lenz, Gabriel S. 2009. "Learning and Opinion Change, Not Priming: Reconsidering the Priming Hypothesis." *American Journal of Political Science* 53(October): 821–837.
- Martin, Paul S. 2004. "Inside the Black Box of Negative Campaign Effects: Three Reasons Why Negative Campaigns Mobilize." *Political Psychology* 25(4): 545–562.
- Mattes, Kyle, and David P. Redlawsk. 2015. *The Positive Case for Negative Campaigning*. Chicago, IL: University of Chicago Press.
- Paul, Newly, and Chance York. 2015. "I Approve This Candidate: The Strategic Use of Ad Endorsements in the 2008 Election." *PS: Political Science & Politics* 48(4): 584–589.
- Peterson, David A. M. 2004. "Certainty or Accessibility: Attitude Strength in Candidate Evaluations." *American Journal of Political Science* 48(3): 513–520.
- Peterson, David A. M. 2009. "Campaign Learning and Vote Determinants." *American Journal of Political Science* 53(April): 445–460.
- Petrocik, John R. 1996. "Issue Ownership in Presidential Elections, with a 1980 Case Study." *American Journal of Political Science* 40(August): 825–850.
- Rabinowitz, George, and Stuart Elaine Macdonald. 1989. "A Directional Theory of Issue Voting." *American Political Science Review* 83(March): 93–121.
- Ridout, Travis N., and Erika Franklin Fowler. 2012. "Explaining Perceptions of Advertising Tone." *Political Research Quarterly* 65(1): 62–75.
- Ridout, Travis N., and Michael M. Franz. 2011. *The Persuasive Power of Campaign Advertising*. Philadelphia: Temple University Press.
- Riker, William H. 1990. "Heresthetic and Rhetoric in the Spatial Model." In *Advances in the Spatial Theory of Voting*, ed. James M. Enelow, and Melvin J. Hinich. Cambridge: Cambridge University Press pp. 46–65.
- Schattschneider, E. E. 1960. *The Semi-Sovereign People: A Realist's View of Democracy in America*. New York: Holt, Rinehart, and Winston.
- Shah, Dhaven V., Jaeho Cho, Seungahn Nah, Melissa R. Gotlieb, Huyunseo Hwang, Nam-Jin Lee, Rosanne M. Scholl, and Douglas M. McLeod. 2007. "Campaign Ads, Online Messaging, and Participation: Extending the Communication Mediation Model." *Journal of Communication* 57(4): 676–703.
- Sigelman, Lee, and Emmet H. Buell. 2004. "Avoidance or Engagement? Issue Convergence in U.S. Presidential Campaigns, 1960-2000." *American Journal of Political Science* 48(October): 650–661.

- Simon, Adam F. 2002. *The Winning Message: Candidate Behavior, Campaign Discourse, and Democracy*. Cambridge and New York: Cambridge University Press.
- Skaperdas, Stergios, and Bernard Grofman. 1995. "Modeling Negative Campaigning." *American Political Science Review* 89(1): 49–61.
- Vavreck, Lynn. 2009. *The Message Matters: The Economy and Presidential Campaigns*. Princeton and Oxford: Princeton University Press.
- Wichowsky, Amber, and Sarah E. Niebler. 2010. "Narrow Victories and Hard Games: Revisiting the Primary Divisive Hypothesis." *American Politics Research* 38(6): 1052–1071.
- Windett, Jason Harold. 2014. "Gendered Campaign Strategies in U.S. Elections." *American Politics Research* 42(4): 628–655.
- Wlezien, Christopher, and Robert S. Erikson. 2002. "The Timeline of Presidential Election Campaigns." *Journal of Politics* 64(4): 969–993.
- Wooldridge, Jeffrey M. 2000. *Introductory Econometrics: A Modern Approach*. South-Western College.