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# The long and short of it: The unpredictability of late deciding voters

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ABSTRACT

We examine the long- and short-campaign forces and their effects on the error variance in models of presidential voting decisions. Using a heteroskedastic probit allows a separate equation for the error variance and thus insight into campaign effects on voter uncertainty. Controlling for political sophistication, partisan strength and ambivalence, the choices of voters deciding later in the campaign are consistently less predictable. This is important because the number of late deciders has increased in recent elections. Furthermore, ambivalence and residing in a battleground state are stronger sources of error variance among late deciders.



## 1. Introduction

Voting analysts have long made a distinction between "long-term" and "short-term" forces that influence the voting decision in presidential elections (e.g., Campbell et al., 1960; Tufte, 1975; Erikson et al., 2008). Long-term forces reflect information and considerations that are available to the voter before the presidential campaign starts. Long-term forces usually refer to political attitudes (such as party identification and ideological preferences) and demographic attributes (such as race, religious affiliation, and union membership) that are or can be relatively stable over the long haul. Long-term forces may also include the record each candidate has established previously in government, e.g., as a member of Congress, as a governor, or as president running for reelection. The period of governing has been called the "long campaign" to denote its importance in subsequent elections (Box-Steffensmeier and Franklin, 1995). These long-term forces shape the voting decision and often lead voters to develop a habitual pattern of voting for the same party every four years.

In contrast, short-term forces refer more specifically to the campaign and contemporary events, and do not favor the same party every election. Traditionally, attitudes toward the candidates and specific issue positions are considered short-term forces on the voting decision, since the candidates and the salient issues change from election to election. Other short-term factors include discussions with family members or co-workers during the campaign, exposure to campaign advertising, or other contact with one of the campaigns. Analyses of national elections indicate that short-term forces consistently influence vote choice (Huber and Arceneaux, 2007; Johnston et al., 2004; Healy and Malhotra, 2009; Shaw, 2006; Miller and Shanks, 1996; Kinder et al., 1984).

We use timing of when voters decide to gain insight into the effects of campaigns. While much of the research

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examines the impact of campaigns on turnout and vote choice, there are other ways in which campaigns influence voters. For example, some find that campaigns help educate voters about political parties and the issues of the day (e.g., Alvarez, 1997; Smith and Tolbert, 2004; Gelman and King, 1993). Campaigns also prime the considerations voters take into account when deciding (Sides and Vavreck, 2013; Hillygus and Schields, 2008; Shaw, 2006; Bartels, 2006; Campbell, 2001; Iyengar and Kinder, 1987; Berelson et al., 1954). A critical point of contention is whether campaigns make voting decisions more or less predictable. The prevailing view is that presidential campaigns help make voting decisions more predictable by reinforcing predispositions. That is, what voters learn during the campaign pushes them toward their longstanding partisan preferences (for a recent summary of this view, see Sides and Vavreck, 2013). However, there is a subset of voters who wait until very late in the presidential campaign to decide, and if these voters tend to have weaker partisan preferences then they may be influenced by the campaign in ways that are less predictable.

Although scholars have long taken interest in the timing of the vote decision (e.g., Lazarsfeld et al., 1944; Campbell et al., 1960; Kessel, 1973, 1968), it has been the subject of growing attention recently. Much of this research has focused on identifying the contextual and dispositional factors that delay or hasten the vote decision. Recent scholarship suggests that campaign competitiveness (Nir and Druckman, 2008), counterattitudinal advertising (Matthes, 2012), candidate sex (Fulton and Ondercin, 2012), voter sex (Kenski, 2007), and voter ambivalence (Lavine, 2001; Lavine et al., 2012) affect when people decide for whom they will vote. Examination of the electoral consequences of the timing of the vote decision is still sparse (e.g., Kosmidis and Xezonakis, 2010; Lavine et al., 2012).

We posit that there is variation in the way voters integrate the long- and short-term forces into a voting decision. Specifically, some voters are influenced entirely by long-term forces, while others are more influenced by short-term forces. A strong partisan may have his mind made up before the campaign begins, and he will likely interpret all the short-term events of the campaign in a way that reinforces his partisan predispositions. Indeed, Miller and Shanks (1996) find that party identification influences the voting decision directly, as well as indirectly, by coloring the voter's candidate evaluation. In contrast, an independent voter may base her vote more on the day-to-day events of the actual campaign. Voters who are more influenced by short-term forces in a campaign may be more uncertain or conflicted about their ultimate decision, which could produce an unequal error variance in statistical models of the vote choice that can be tested with the heteroskedastic probit model. Furthermore, the short-term forces in a campaign may be so large and varied that they are difficult to model with survey data, which should make the vote choices of late deciders less predictable. Most of the research on campaign effects examine whether short-term forces shift voter preferences. These studies conclude that presidential campaign effects are smaller than many expect because the campaigns tend to reinforce voter predispositions (e.g., Sides and Vavreck, 2013; Shaw, 2006). However, we believe there is a segment of the electorate that is open to new information and decides very late in the campaign, and thus is subject to campaign influence. It is important for voting models to account for uncertainty and conflicting attitudes among voters, which may result from the presidential campaign. We do this by estimating a heteroskedastic probit model of vote choice because this yields unbiased estimates, as well as information about the nature of voter uncertainty.

In the next section of the paper, we elaborate on the ideas of long- and short-campaign forces and their effects on the error variance of a model of presidential voting decisions. We then discuss the usefulness of the heteroskedastic probit model to address concerns about unequal variance across observations. In the third section of the paper, we present data on the timing of voter decisions in presidential elections from 1980 to 2008. In the fourth section, we discuss the results of the heteroskedastic probit model of voting decisions. We emphasize the role of timing, knowledge, attitude consistency, strength of partisanship, and residence in a battleground state in the error variance part of the model. We conclude by synthesizing the results, which provide evidence that campaigns increase the error variance for undecided voters most susceptible to the campaign.

## 2. Long- and short-term factors

Long-term forces are smaller in number and easier for researchers to identify and measure. For example, much attention has been devoted to conceptualization and measurement of party identification (e.g., Green et al., 2002; Weinschenk, 2010; Zschirnt, 2011). However, short-term forces, including a discussion with a friend or co-worker (Beck et al., 2002), television ads (Huber and Arceneaux, 2007), or various characteristics of the candidates such as their facial appearance (Ballew and Todorov, 2007) or perceived personality (Kinder, 1986), are nearly infinite in number and are much harder to measure and link to the voting decision (e.g., Miller and Shanks, 1996). This means that voting models should perform well when predicting the choices of voters who decide early and are guided primarily by long-term forces. In contrast, voting models should not perform as well for citizens who are strongly influenced by short-term forces, because it is difficult to account for all possible short-term forces and the events of the fall campaign may heighten attitude conflict in the mind of the voter.

The voting literature identifies three primary factors that influence the predictability of voting decisions: strength of partisanship, information, and ambivalence. Starting with the authors of *The American Voter*, a strong partisan identity is associated with more stable and predictable political attitudes (Campbell et al., 1960; Kessel, 1968). Voters with strong partisan identities will have those attachments reinforced by the symbols and messages of the campaign, and their choices should be more predictable (based on party and ideology) than Independents.

A second theory links the predictability of decisions to political knowledge (Alvarez and Brehm, 1997; Gelman and King, 1993; Zaller, 1992). Those who lack political

information are less likely to base their voting decisions on political fundamentals (such as partisanship, evaluations of the president, party positions, or economic performance). Thus, more knowledgeable voters will behave more predictably than voters with little political knowledge. Furthermore, the prevailing position in the voting behavior literature is that presidential campaigns inform voters about the policy positions of the candidates and other fundamental criteria so that voters are more likely to choose on the basis of "enlightened preferences" on Election Day than early in the campaign (Gelman and King, 1993, 433; see also Sides and Vavreck, 2013). That is, the information gains provided by the campaign tend to reinforce past voting behavior and help make voting decisions and election results more predictable.

A third theory links voter predictability to partisan ambivalence, or conflicting attitudes toward the two parties. Lavine et al. (2012) define partisan ambivalence as conflict between one's party identification and other political attitudes. They find that the voting decisions of ambivalent partisans are harder to predict. For those who are conflicted, or "cross-pressured," because, for example, they like some things about each party or candidate, it is not always clear how they will resolve the conflict when voting (Campbell et al., 1960; Hillygus and Schields, 2008). Furthermore, additional information does not necessarily resolve the attitude conflict (Alvarez and Brehm, 1995). Thus, Kessel reminds us to "be mindful of the possibility that random chance becomes more significant as decisions become more difficult" (1968, 111).

We argue that the timing of the voting decision is another factor that affects the predictability of voting decisions. In part, the time of the vote choice is associated with the three factors discussed above. Late deciders tend to be less partisan, less informed, and more ambivalent than early deciders (Lazarsfeld et al., 1944; Campbell et al., 1960; Kessel, 1968; Lavine, 2001; Lavine et al., 2012; Sokhey and McClurg, 2011). Campaign-level forces may interact with individual-level characteristics to delay or hasten the timing of the vote decision. Most research supports the contention that ambivalence delays candidate selection. For example, Rudolph (2011) finds that the presence of conflicting information inhibits ambivalence decay among voters, perhaps because the persuasive effects of the competing messages cancel (Druckman and Chong, 2010).

Nevertheless, the timing of the voting choice more directly indicates voter indecision than strength of partisanship, information, or ambivalence. Once voters select a candidate, they tend to selectively consume information to rationalize their choice, which makes their choice appear more predictable (Rahn et al., 1994; Krosnick et al., 2003). Citizens who decide which candidate to support prior to the start of the general election campaign base their votes solely on long-term forces, which are measured more reliably in voting models. By comparison, people who decide shortly before Election Day tend to face difficulty in making a choice.

In addition, the timing of the voting decision reflects the impact of the campaign. Voters who decide late are likely to be more influenced by something that took place during the campaign (Fournier et al., 2004). Recent scholarship also indicates that campaigns influence the timing of the vote decision. For instance, Fulton and Ondercin (2012) find that the presence of a woman candidate hastens the vote decision. Nir and Druckman (2008) find that the level of campaign competitiveness delays the voting decision of more easily persuaded voters. Counter-attitudinal advertising, which is likely more prevalent in a competitive campaign, delays the voting decision for uncertain citizens (Matthes, 2012). Specifically, we argue that, after controlling for strength of partisanship, political knowledge, and ambivalence, the timing of the vote decision proxies for the effect of the competitive campaign environment.

There is evidence that the voting choices of early deciders are more predictable than late deciders. The explained variance for Campbell et al. (1960) presidential vote equation is large for people who made their voting decisions before the campaign ever started, but it declines dramatically when the sample is limited to those who decided during the campaign. Similarly, when analyzing the vote for Nixon, Humphrey, and Wallace in 1968 and dividing the electorate by the timing of their vote decision, Kessel (1973) can explain roughly two-thirds of the variance for respondents who decide early and one-third for late deciders. Lewis-Beck et al. (2008) explain less than a quarter of the variance for voters who decide in the last two weeks, compared to roughly three quarters of the variance for early deciders. Thus, short-term forces tend to increase the error variance in the vote decision.

Another relevant feature of presidential elections is that campaign visits and paid advertising on television and radio are largely confined to battleground states where the outcome is in doubt (Chen and Reeves, 2011; Ridout and Franz, 2014). As a result, voters in battleground states are exposed to a heavier dose of campaign information. Battleground states are more likely to produce more local news coverage of the presidential campaign as well. Thus, late deciding voters in battleground states may have a wider range of information to consider when choosing a presidential candidate. As a result, the choices of late deciding voters in battleground states may be especially difficult to predict.

All of this work points to the statistical conclusion that there will be heteroskedastic error variance in common vote models due to the differing influence of short- and long-term forces (as indicated by the reported time of the vote decision). This can arise due to the properties inherent in late deciders. If late deciders are less politically informed than early deciders, then the distribution of a late decider's preferences might be expected to be flatter than the distribution of the preferences of an early decider. Furthermore, early deciders tend to be stronger partisans than late deciders. Ambivalence plays a more complicated, but nonetheless intuitive, role in increasing the variance in the vote decision. If late deciders are more ambivalent than early deciders, then we should expect greater variance in the vote decision due to the aggregation of conflicting information. As Braumoeller (2006) explains, the variance of the distribution that results from combining two conflicting principles additively (which are random variables) is greater than the variance of each prior distribution of the conflicting principles if the principles do not cancel out and

if individuals are not overwhelmed by one principle when aggregating the information.

Nevertheless, even when controlling for political knowledge, strength of partisanship, and ambivalence, late deciders might be more susceptible to campaign information. The picture that Kessel (1973, 1968) paints strongly suggests an error variance that is cone shaped over the course of the campaign. That is, the errors grow over time as the decision process extends through the campaign season. Unequal variance across observations can be addressed with a heteroskedastic probit model and provide further insight into voter behavior.

## 3. The heteroskedastic probit model

Our central concern is how the variance in the distribution of the dependent variable, vote choice, changes with the timing of the vote decision.[1] There are methodological and substantive reasons for using a heteroskedastic probit model to evaluate the relationship between the timing of the vote decision and vote choice. Methodologically, there is a major statistical problem with using standard vote choice models, such as logit and probit, when heteroskedasticity is present. Namely, the maximum likelihood estimates are inconsistent (Greene, 1993). However, the inconsistency can be addressed by directly taking into account the heterogeneity of the process under study (e.g., Alvarez and Brehm, 1995; Durant and Legge, 2005; Blimes, 2006; Clark et al., 2008; Battaglio, 2009). Substantively, we are not primarily concerned with analyzing how the mean of the distribution of the vote choice changes over the course of the campaign, i.e. how the timing of the vote decision affects which candidate one chooses, although this question has been addressed (e.g., Abramson et al., 1995; Stein, 1998; Campbell, 1999; Brox and Giammo, 2009; Kosmidis and Xezonakis, 2010). Rather, we are interested in the effect of the time of decision on the error variance in the vote decision. That is, are the vote choices of late deciders less predictable, and if so, why?

The heteroskedastic probit model can accommodate our expectations about the error variance, i.e., that it increases over the course of the campaign based on the differences between early and late deciders. The heteroskedastic probit model is like a standard probit model except that there is a separate equation to model the error variance or the errors in prediction. The log-likelihood function for the heteroskedastic probit is:

$$\ln \mathscr{L}_n = \sum_{i=1}^{n} \left( y_i \ln \Phi \left[ \frac{X_i \beta}{e^{Z_i \gamma}} \right] + (1 - y_i) \ln \Phi \left[ \frac{X_i \beta}{e^{Z_i \gamma}} \right] \right) \quad (1)$$

The likelihood for the heteroskedastic probit includes the variance model in the denominator, which is estimated simultaneously with the choice equation in the numerator (Williams, 2010). Thus, in addition to a statistical model with variables predicting vote choice, the heteroskedastic probit model includes a set of covariates to account for variation in the error variance across observations.[2] The variance modeled is at the level of the individual unit's probability of an outcome, which fits our empirical goals.

Based on the discussion above, we expect the error variance in a model of voting to be a function of (1) the short campaign, (2) voter uncertainty about the candidates and parties, (3) strength of partisanship, and (4) conflicting attitudes about the major-party alternatives. Foremost, we expect that the error variance increases for late deciders, those voters most responsive to the short campaign. Second, voters with more political knowledge should be more certain about the qualities of the competing candidates and parties and thus the error variance should decrease as political knowledge increases. Similarly, we expect a smaller error variance for respondents who strongly identify with a political party. Strong partisans are likely to have more certain political beliefs and preferences and are less likely to be influenced by short-term campaign forces. The error variance is expected to decrease as the absolute value of the difference between the number of pro-Republican and pro-Democrat responses grows.[3] That is, if the respondent can provide favorable responses about both candidates, there is more likely to be conflicting attitudes about which party's candidate to support. This expectation is based on the idea that attitude conflict leads to greater variation (and less predictability) in vote choices. Finally, we expect that voters in battleground states are less predictable than those in non-battleground states.

The error variance represents the within-group variation that reflects the extent to which voters with similar characteristics (similar party identification, ideology, candidate evaluations, and etc.) tend to choose the same candidates. A large error variance indicates that similar voters do not tend to select the same candidates, while a smaller error variance implies that similar voters tend to choose the same candidate (see discussion in Garner and Palmer, 2011). In particular, we argue that timing has a large effect on the error variance. Although similarly situated late and early deciders tend to select the same candidates, a significant proportion of late deciders vote for different candidates than early deciders with the same characteristics. Controlling for characteristics that affect the predictive accuracy of the choice model, such as political knowledge, ambivalence, and partisan strength, a large positive effect of decision timing implies that late deciders respond differently to the campaign than those deciding earlier: namely, for late deciders, the campaign makes their votes less predictable.

[1] Although explaining variance is underutilized in political science, it has many potential applications (see Braumoeller, 2006).

[2] Since Alvarez and Brehm (1995), scholars have utilized heteroskedastic probit models primarily to estimate the impact of uncertainty, operationalized as knowledge or political interest, on variance in choice. For example, Szmer and Songer (2005) employ a heteroskedastic probit model to find that the ability of presidents to predict the policy preferences of nominees to the Supreme Court depends on their prior knowledge about the nominees. Battaglio (2009) estimates the impact of political interest on opinion toward privatizing the provision of public goods.

[3] Specifically, we use the measure of ambivalence developed by Lavine and colleagues (Lavine, 2001; Basinger and Lavine, 2005; Lavine et al., 2012). We describe this measure in the appendix.

**Table 1**
Timing of the presidential vote decision, 1948–2008.

| Election year | Decided by end of conventions | Decided after conventions | Decided in last two weeks of campaign | Closeness of election | N |
|---|---|---|---|---|---|
| 1948 | 72.0 | 15.4 | 12.6 | 95.3 | 382 |
| 1952 | 67.7 | 20.9 | 11.4 | 89.1 | 1202 |
| 1956 | 78.5 | 11.7 | 9.8 | 84.5 | 1230 |
| 1960 | 62.8 | 25.1 | 12.1 | 98.3 | 877 |
| 1964 | 69.2 | 19.7 | 11.1 | 77.3 | 1248 |
| 1968 | 60.4 | 18.6 | 21.0 | 99.2 | 1016 |
| 1972 | 62.5 | 21.8 | 13.7 | 76.4 | 1487 |
| 1976 | 54.1 | 21.8 | 23.8 | 97.9 | 1332 |
| 1980 | 58.6 | 15.2 | 25.8 | 89.4 | 988 |
| 1984 | 69.5 | 16.9 | 13.3 | 81.7 | 1395 |
| 1988 | 60.4 | 22.2 | 17.3 | 92.1 | 1200 |
| 1992 | 53.8 | 21.9 | 24.3 | 93.1 | 1657 |
| 1996 | 65.5 | 16.1 | 18.1 | 90.5 | 1131 |
| 2000 | 55.7 | 21.9 | 22.4 | 98.9 | 1159 |
| 2004 | 69.8 | 14.8 | 15.4 | 97.5 | 821 |
| 2008 | 67.3 | 12.1 | 20.6 | 87.1 | 1292 |

Note: Percentage of early, middle, and late deciders presented. Closeness of election $= 100(1 - |R - D|/R + D)$, where $R$ ($D$) is the Republican (Democratic) share of the popular vote.

## 4. The timing of voter decisions in presidential elections

Table 1 presents information about when citizens made their voting decisions in presidential election campaigns from 1984 to 2008.[4] We stopped in 2008 because the ANES have not released the vote timing coded for 2012, only the verbatim responses, and we have not tried to code them ourselves. The timing of the vote decision is broken into three categories: before the end of the conventions (early), from the end of the conventions to two weeks before the election (middle), and less than two weeks before the election (late). We see a general trend of more people deciding late in the campaign in more recent elections. The proportion of late deciders and a time trend are correlated at $\rho = .58$ ($p < .05$), a trend which was noted by Flanigan and Zingale (1994). Such a trend increases the importance of the campaign.

In addition to looking for patterns over time, in Table 1 above we see that there are election characteristics that affect timing. For example, if the election is a landslide more voters appear to decide early. Closeness of the election and the proportion of late deciders are correlated at $\rho = .44$. In the landslide election of 1984, most voters had decided before the end of the conventions, while in more competitive elections, such as 1992 and 2000, only slightly more than half of the voters had decided before the end of the conventions. There are slightly more early deciders in races with an incumbent, a candidate with whom voters are already familiar, but this difference is not statistically significant.

We can also analyze the data to uncover differences between early, middle, and late deciders. Compared to middle deciders, late deciders were significantly less partisan and ideological, but slightly more liberal, and more conflicted in their attitudes towards the Democratic and Republican candidate. Late deciders differed from early deciders in these same ways, but in addition, they were also less supportive of each candidate, more likely to be White and less politically informed. Because of the shifting nature of some presidential campaigns, there occasionally is a relationship between the timing of the voting decision and the candidate chosen (Abramson et al., 1995; Stein, 1998; Campbell, 1999; Brox and Giammo, 2009; Kosmidis and Xezonakis, 2010). However, our main concern is with the effect of time of decision on the error variance. We now turn to testing our expectations about the effect of the timing of voting decisions on the error variance with the heteroskedastic probit model.

## 5. Results

In this section, we estimate a heteroskedastic probit model of presidential vote choice in each presidential election from 1980 to 2008. Our dependent variable is a dichotomous indicator of the candidate chosen, with the Republican coded as 1 and the Democrat coded as 0. Our voting model includes a standard set of predictors, including party identification, ideology, demographic characteristics, as well as evaluations of the economy, the current president, and the two candidates. These variables are described in more detail in the appendix. Some of the predictor variables were not included in the full sample for the 1980, 2000 and 2008 elections. The candidate traits questions were not asked before 1980, so our analysis begins with 1980; however, the economy question was not asked before 1984, so the model of vote choice in 1980 excludes the economy evaluation variable in the choice model. The ideology question was only asked to half of the respondents in 2000, and including this variable limits our sample size greatly, so we exclude ideology. The ANES has not released the variables necessary for constructing the ambivalence measure for 2008, and many of the traits questions were not asked in 2008, and of those that were asked, only half of the respondents received the questions. Thus, we drop this variable for 2008.[5]

[4] We examine the variation among voters by using American National Election Study (ANES) data, in particular the standard ANES question that asks citizens how long before the election they made their presidential voting decisions. The exact question wording, shown here for 1988, is: "How long before the election did you decide that you were going to vote the way you did?" The question follows the series of questions: "Did R [espondent] Vote for President in 1988 election?" then "Who did R vote for in 1988 election?" and "Was R's preference Strong or Not Strong?" Responses coded as "Other" as well as answers in 1972 coded as "when Eagleton was dropped from the Democratic ticket," "when Kissinger announced that peace was at hand," and "when Alabama Governor George Wallace was shot" are not included in the table. In any given year these responses comprised no more than 2.1% of all responses.

[5] Because there is some evidence that time of the vote decision is associated with vote choice, we included time of decision in the outcome model for each year as a robustness check. In each year, time of decision was not statistically significant at conventional levels, and its inclusion did not substantively change our results. Although a likelihood ratio test is not directly applicable in Stata when using survey weights, likelihood ratio tests do not indicate that including timing in the choice model yields a statistically significant improvement in model fit (at $p < .05$).

A second component of the model includes a set of variables to account for the size of the error variance. These explanatory variables include the time of the vote decision, a standard political knowledge scale, strength of partisanship, ambivalence about the presidential candidates, and residence in a battleground state. Specifically, timing is used to test the expectation of increasing error variance over the course of the campaign. We include a dummy variable for voters living in battleground states to examine whether heavier exposure to candidate visits and campaign ads in those states affects the error variance in voting models.[6] The variables in the variance model are coded so that they assume meaningful zero values, since the coefficient estimates in the choice model are interpreted for cases in which the variance model equals 1, which is true if the values for the variance model predictors are zero (Williams, 2010).[7] We also expect that greater political knowledge, partisan strength, and residence in a non-battleground state are associated with smaller error variances in the vote choice model. Finally, the more ambivalent a voter is about the candidates, the larger the error variance. By using the timing of the vote decision and other factors to help model the error variance, we produce unbiased estimates and improve our ability to explain voting behavior and the impact of campaigns.

### 5.1. Election year estimates

Table 2 presents the results for heteroskedastic probit models of vote choice in unpooled analyses of each presidential election from 1980 to 2008.[8] First, the goodness-of-fit test examines the null hypothesis that the coefficients of the model are equal to zero. We see that for all years the heteroskedastic probit model performs significantly better than the null model. In each year, a Wald test indicates that the error variance is indeed non-constant. In addition, the statistical significance of some of the predictors in the variance models also indicates that the models specifications in Table 4 appear to be an improvement on the probit or logit model. So, we prefer the heteroskedastic probit model, specifically its treatment of the variance.

The vote choice model for each election is presented in the upper part of Table 2. We see an effect of political attitudes and the party record. In all elections, coefficients for party identification, candidate traits, and presidential feeling thermometer are statistically significant and appropriately signed, with the exception of Republican candidate traits in 1984 ($p < .10$) and 2004. Party identification with the Republican Party has a positive and statistically significant effect on voting for the Republican candidate in all elections. Respondents who were more (less) favorable toward the Republican (Democratic) president as indicated by the presidential feeling thermometer were also more likely to vote for the Republican candidate. As expected, the more favorable traits that the respondent identified for the Republican candidate, the more likely they were to vote for him; however, this association is not statistically significant in 1984 or 2004, both elections in which a Republican president sought office. One possible explanation for the lack of a statistically significant effect for Republican traits in 1984 and 2004 is that when an incumbent president seeks reelection, it is the challenger's traits that matter more to the vote decision than the incumbent's traits. While the coefficient estimate for incumbent candidate traits is smaller than challenger traits in each election in the sample, it is outside the scope of this analysis to answer this question. It could be, for instance, that evaluation of the president captures sufficient variation in incumbent candidate traits. Similarly, the more favorable traits identified for the Democratic candidate, the less likely the respondent would vote for the Republican candidate. For most of the models, the effects of economic approval, gender, union membership, and ideology are in the expected direction, but often are not statistically significantly different from zero. Race is negative and statistically significant in several of the models, indicating that even after controlling for party, ideology and evaluations of the president and candidates, non-White respondents were significantly less likely than White respondents to vote for the Republican candidate. As mentioned earlier, the coefficient estimates in the choice model are immediately interpretable for cases in which the values of the variance predictors are all zero, in which case the variance model equals one. So, they represent the effect of, say party identification, on the vote choice of an early decider living in a non-battleground state with moderate levels of partisan strength, political sophistication, and ambivalence. However, as values of the variance predictors increase, this attenuates the predicted probability of voting Republican (or Democrat). In these models, the parameters in the choice model are not allowed to vary between early, middle, and late deciders. We address this possibility in a later section.

The second part of the heteroskedastic probit model estimates the error variance in the binary vote choice part of the model. Considering the timing variable first, we see strong evidence that the error variance increases for late deciders. Indeed, the time of voting decision is the only predictor with a statistically significant association with the error variance in each of the models. The decisions of voters affected by the short campaign are harder to explain (there is a larger error variance), even after controlling for knowledge, strength of partisanship, political ambivalence, and residence in a battleground state. This suggests that features of the short campaign which are large in number and difficult to identify and measure make voting decisions harder to predict for late deciders. The short campaign factors include, for example, the campaign styles and characteristics of the candidates, a radio talk show about

[6] The battleground state measure is taken from Gerber et al. (2009), which is based on how pivotal a state was to the election outcome. An alternative measure is given in Shaw (2006), which is based on how campaigns spend resources in each state; however, his data do not cover the entire time period of our sample. Since the measure in Gerber et al. (2009) covers the time period in our analysis, we use their measure.

[7] This leads to slightly different recodings for the variance predictors in the election year models and the pooled models.

[8] The models were estimated using the *hetprob* command in Stata version 12. Data are weighted by the post-stratification weights (VCF0009a).

**Table 2**
Heteroskedastic probit regressions of presidential vote choice, 1980–2008.

| Variable | 1980 | 1984 | 1988 | 1992 | 1996 | 2000 | 2004 | 2008 |
|---|---|---|---|---|---|---|---|---|
| **Choice model** | | | | | | | | |
| Pres. thermometer | .05*** (.01) | .08*** (.02) | .05** (.02) | .06*** (.02) | .17** (.06) | .02* (.01) | .03** (.01) | .02*** (.01) |
| Economy | – | .22 (.15) | .29 (.20) | .64 (.36) | 1.23* (.59) | .31 (.22) | .72* (.29) | .22 (.14) |
| Party ID (Rep.) | .49*** (.10) | .44*** (.12) | .83** (.28) | .80*** (.17) | 1.31** (.41) | .63*** (.11) | .45** (.17) | .47*** (.08) |
| Dem. traits | −1.18** (.45) | −1.48*** (.39) | −3.93*** (1.18) | −3.69*** (.94) | −3.44* (1.40) | −2.57*** (.63) | −3.09** (1.17) | – |
| Rep. traits | 2.34*** (.60) | .82 (.44) | 4.54** (1.43) | 2.00** (.72) | 4.95** (1.90) | 3.16*** (.64) | 1.15 (.76) | – |
| Cons. ideology | .22 (.13) | .25 (.15) | .38 (.27) | 1.07*** (.28) | .17 (.25) | – | .39* (.17) | .32** (.08) |
| Non-white | −1.10 (.64) | −.68 (.35) | −2.19** (.80) | −.49 (.59) | −1.92 (1.32) | −1.11* (.46) | −2.38** (.70) | −1.00*** (.23) |
| Woman | −.10 (.37) | .00 (.26) | −.20 (.36) | .28 (.43) | .29 (.81) | −.43 (.33) | .63 (.72) | .07 (.18) |
| Union | −.68 (.45) | −.28 (.32) | .05 (.49) | −.49 (.52) | −2.84 (1.72) | .36 (.37) | −1.15 (.73) | .43 (.26) |
| Constant | −6.92 | −5.57 | −9.96 | −7.82 | −18.73 | −5.06 | −1.08 | −4.38 |
| Wald $\chi^2$ | 48.74 | 43.57 | 36.07 | 31.20 | 18.15 | 48.03 | 30.25 | 132.65 |
| Prob. > $\chi^2$ | .0000 | .0000 | .0000 | .001 | .05 | .0000 | .001 | .0000 |
| N | 588 | 982 | 860 | 1020 | 825 | 1005 | 639 | 922 |
| **Variance model** | | | | | | | | |
| Time | .43*** (.12) | .63*** (.17) | .92*** (.22) | .48*** (.12) | 1.02*** (.19) | .57*** (.12) | .65*** (.16) | .27** (.10) |
| Par. strength | .10 (.13) | −.14 (.20) | .21 (.17) | −.08 (.16) | .07 (.27) | −.42* (.21) | −.21 (.19) | .11 (.08) |
| Pol. knowledge | −.15 (.08) | −.26* (.12) | −.57*** (.17) | −.25** (.09) | .14 (.10) | −.03 (.10) | .09 (.13) | −.07 (.07) |
| Ambivalence | .05 (.08) | .06 (.09) | .02 (.09) | .28*** (.08) | .28** (.11) | .11 (.10) | −.02 (.11) | – |
| Battleground | .41 (.24) | −.15 (.19) | .09 (.20) | .63** (.22) | .03 (.26) | −.36 (.19) | .23 (.25) | .27 (.15) |
| Wald $\chi^2$ | 15.58 | 14.74 | 17.42 | 24.00 | 34.96 | 25.27 | 20.58 | 16.64 |
| Prob. > $\chi^2$ | .01 | .05 | .01 | .001 | .0000 | .0001 | .001 | .01 |

Note: Coefficient estimates presented. Robust standard errors in parentheses. $p^* < .05$, $p^{**} < .01$, $p^{***} < .001$, two-tailed z-test.

the campaign issues, or a conversation with a neighbor.[9] On the other hand, the findings are less consistent with respect to the relationship between battleground states and error variance.

The variance model also shows that the more knowledgeable the voter, the more predictable his or her vote decision is. This finding agrees with Battaglio's (2009) cross-national analysis of opinions about privatization. Although Battaglio (2009) lacks an indicator for the direct impact of knowledge or information on voter opinion, he finds that the opinions of more politically interested citizens are more predictable. Lavine et al. (2012) find a similar result. However, this result contrasts with Durant and Legge (2005), who find that more information about genetic modification science does not significantly affect a citizen's support for genetically modified foods. We find weak support for the hypothesis that ambivalence increases error variance. Ambivalence is only a significant predictor at conventional levels in the 1992 and 1996 models. While this is only partially consistent with Alvarez and Brehm (1995), who argue that ambivalence, not political knowledge, predicts error variance in opinions toward abortion policy, Alvarez and Brehm admit that different mechanisms produce error variance in different arenas. In Alvarez and Brehm (1997), the authors argue that political knowledge predicts error variance in opinions toward racial policies, which is more consistent with the findings in Table 2. Finally, the error variance in our model appears to be unrelated to the voter's strength of partisanship. This is not due to correlation with the other measures in the variance model. Removing the other predictors in the variance model one by one does not result in a significant coefficient on partisan strength.

To better compare the effects of the variables on the unpredictability of presidential vote choice, we have calculated how the error variance changes in response to discrete change in each of the error variance predictors. Employing the method of discrete change (King, 1989; Long, 1997), which has been used in several analyses with heteroskedastic probits (e.g., Szmer and Songer, 2005; Alvarez and Brehm, 1997), we hold the continuous variables (partisan strength, political knowledge, ambivalence) constant at their mean values and discrete variables (time of decision, battleground residence) constant at their modal values. The modal value for time of decision is 0, for early deciders, and the mode for battleground residence is zero, for non-battleground states. Then, with other variables held constant, for continuous predictors of interest, we calculate the difference in the error variance at the mean plus a half standard deviation and the mean minus a half standard deviation, and for discrete predictors of interest, we take subtract the error variance at the baseline category from the error variance for the next highest category. The results are given in Table 3. Each continuous variable in the variance model is standardized. Thus, the baseline value for each variable is zero.

Although the variables are not entirely comparable, Table 3 shows that time of decision has a consistent substantive effect on the error variance. In contrast, ambivalence does not appear to have a substantively large effect, despite its sporadic statistical significance presented in Table 2. The substantive effects of political sophistication

[9] The effect of information in the short campaign on the vote choice may work through social networks (Beck et al., 2002). Sokhey and McClurg (2011) also find that social networks encourage correct voting – for candidates whom they would choose if they had all relevant information (Lau and Redlawsk, 1997)–when members receive clear signals about candidates. Ryan (2011) finds the extent to which communication promotes correct voting depends upon the respondent's level of knowledge and partisanship. Thus, the predictability of one's vote choice may depend on the information one receives from those one trusts, such as friends, family, and coworkers (Huckfeldt et al., 2002).

**Table 3**
Effects of variables on error variance.

| | 1980 | 1984 | 1988 | 1992 | 1996 | 2000 | 2004 | 2008 |
|---|---|---|---|---|---|---|---|---|
| Time | .54 | .88 | 1.51 | .62 | 1.77 | .77 | .92 | .31 |
| Par. strength | .07 | −.11 | .16 | −.06 | .05 | −.32 | −.17 | .10 |
| Pol. knowledge | −.15 | −.26 | −.58 | −.25 | .14 | −.03 | −.09 | −.07 |
| Ambivalence | .04 | .08 | .02 | .33 | .36 | .12 | −.02 | – |
| Battleground | .51 | −.14 | .09 | .88 | .03 | −.30 | .26 | .31 |

Note: Discrete change in square root of error variance. Change is from modal category to next highest category for discrete variables and mean − SD/2 to mean + SD/2 for continuous variables, holding other variables constant at their modal (mean) values for discrete (continuous) variables.

and battleground residence are large in some years, but these effects are not as consistently large as time of decision. To examine in more detail the effect of time of decision on the unpredictability in vote choice, we leverage data pooled across elections in the next section.

### 5.2. General analysis

Table 4 gives the estimates from probit models (Models 1 and 2) and heteroskedastic probit models (Models 3 through 6) with the data pooled across the elections from 1980 to 2004 and robust standard errors. We dropped 2008 because of the variable constraints and we could afford to do so, given the large sample size. Models 2, 4, and 6 are estimated with dummy variables for each election year, with 1980 as the baseline year, and Models 1, 3, and 5 are estimated without year indicators. Models 1 and 2 are included for comparison with Models 3 through 6. Models 3 and 4 are identitical to Models 1 and 2, except for the inclusion of the timing variable in the variance model. Models 5 and 6 include theoretically justified covariates in the variance model to account for characteristics that could influence error variance in the probability of voting Republican. Given the importance of model specification in heterogeneous choice models (Keele and Park, 2006), Williams (2009, 2010) recommends using stepwise selection to detect relationships in the error variance as well as diagnose misspecification in the choice model.[10] To our knowledge, we have accounted for the common explanations for error variance in our theoretically justified predictors, which are the time of decision, moderation in attitudes (partisan strength), ambivalence, political sophistication, and residence in a battleground state. Using stepwise selection, we consistently found that time of decision, political knowledge, and ambivalence have a statistically significant effect on the error variance. Although the stepwise procedure does not find that partisan strength and battleground residence are strong predictors of the error variance (where we only include variables with statistical significance $p < .01$), it does find ideology is statistically significant, as well as race (in some specifications) and several year indicators. Examining whether the significance of the ideology variable indicated choice model misspecification or an authentic variance model predictor, we estimated several alternative specifications with combinations of the ideology variable in the choice model, such as one with ideology and ideology squared. In each of these specifications, ideology remained significant. Although it would be interesting to explore further the effect of ideology on the error variance, we leave this to future research and merely note that including ideology in the variance model does not substantively change the results presented in Table 4.

Many of the results in Table 4 largely follow the results presented earlier in Table 2. The variables that are statistically significant in any model in Table 2 are significant in each model in Table 4. In addition, more choice predictors, including ideology and union membership, are consistently statistically significant. Gender is the only consistently nonsignificant variable in the choice model. Although the estimates are not presented, on average, respondents in each election after 1980 were more likely to vote for the Democrat than the 1980 respondents. In these regressions, the variance models yield results similar to those presented earlier. In particular, the timing variable is consistently significant in each of the models. Furthermore, the impact of vote timing on error variance does not diminish when the other controls are included in the variance model. Thus, the timing measure is not a composite of weak partisanship, low knowledge, and ambivalence. The time of voting decision likely measures something else, like the impact of the campaign. Partisan strength and battleground residence fail to obtain statistical significance in the variance model. Although it is not presented, an analysis analogous to that in Table 3 shows once again that timing has a substantively large effect on the error variance. The error variance for middle deciders is more than 160% larger than that of early deciders, controlling for possible confounding variables.

While the results in Table 4 clearly indicate that late deciders are less predictable than earlier deciders, it is unclear whether this is due to the weaker effects of the parameters in the choice model on the votes of late deciders or the increased influence of random events on the choices of late deciders, a concern noted by Achen (2002),

[10] We carried out stepwise selection in Stata, with assistance from the oglm package (Williams, 2010). This procedure requires using stepwise selection to eliminate choice model predictors from the variance model. Given that we are analyzing survey data, it is appropriate to use sampling weights, which are available through the ANES, so we use Wald tests rather than likelihood ratio tests because we cannot conduct likelihood ratio tests with sampling weights in Stata. A key drawback to the Wald test is that the variables in the choice model are interpreted under the assumption that the variance model equals zero, so that its exponential is unity. Thus, we recode variance predictors, including those predictors originally intended solely for the choice model, so that they assume a meaningful value at zero.

**Table 4**
Pooled regressions of presidential vote choice, 1980–2004.

| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| **Choice model** | | | | | | |
| Pres. thermometer | .02*** (.00) | .02*** (.00) | .03*** (.00) | .03*** (.00) | .03*** (.00) | .04*** (.00) |
| Party ID | .28*** (.02) | .29*** (.02) | .40*** (.03) | .42*** (.03) | .48*** (.05) | .50*** (.05) |
| Dem. traits | −1.19*** (.08) | −1.10*** (.09) | −1.84*** (.19) | −1.67*** (.18) | −2.32*** (.30) | −2.05*** (.26) |
| Rep. traits | 1.15*** (.09) | 1.05*** (.09) | 1.73*** (.20) | 1.53*** (.19) | 2.23*** (.32) | 1.94*** (.29) |
| Cons. ideology | .19*** (.03) | .18*** (.03) | .25*** (.04) | .25*** (.04) | .31*** (.06) | .30*** (.06) |
| Non-white | −.58*** (.09) | −.54*** (.09) | −.79*** (.15) | −.76*** (.14) | −1.00*** (.19) | −.92*** (.18) |
| Woman | −.02 (.06) | .02 (.06) | .01 (.09) | .04 (.10) | −.02 (.11) | .02 (.11) |
| Union | −.21** (.07) | −.25*** (.08) | −.30** (.11) | −.31** (.11) | −.37** (.14) | −.38** (.14) |
| Constant | −2.56 | −2.15 | −3.44 | −2.90 | −4.27 | −3.61 |
| Year fixed effects | No | Yes | No | Yes | No | Yes |
| Wald $\chi^2$ | 1168.70 | 1182.05 | 257.72 | 333.47 | 110.20 | 139.26 |
| Prob. > $\chi^2$ | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| **Variance model** | | | | | | |
| Time | – | – | .44*** (.05) | .43*** (.05) | .51*** (.05) | .49*** (.05) |
| Par. strength | – | – | – | – | .04 (.10) | .04 (.09) |
| Pol. knowledge | – | – | – | – | −.72*** (.16) | −.66*** (.15) |
| Ambivalence | – | – | – | – | .11** (.04) | .10** (.03) |
| Battleground | – | – | – | – | .12 (.09) | .10 (.09) |
| Wald $\chi^2$ | – | – | 69.96 | 77.85 | 122.42 | 116.54 |
| Prob. > $\chi^2$ | – | – | .0000 | .0000 | .0000 | .0000 |

Note: Probit coefficient estimates presented in Models 1 and 2. Heteroskedastic probit coefficient estimates presented in Models 3 through 6. Robust standard errors in parentheses. $p^* < .05$, $p^{**} < .01$, $p^{***} < .001$, two-tailed z-test. N = 5451.

among others.[11] That is, do the choice variables actually matter less for late deciders, or are late deciders just inherently less predictable? We take up this question in the following section.

### 5.3. Comparing early, middle, and late deciders

Blimes (2006) addresses this difficult question by describing differences in coefficients and standard errors across groups. However, building on Allison (1999), Williams (2009, 2010) develops a method for parsing out the effects of heterogeneity on the choice model parameters and error variance.[12] Essentially, the procedure involves first estimating a heterogeneous choice model that includes in the choice model interaction terms of the variance predictor of interest with all but one of the original choice model variables (it is necessary to assume that one coefficient is constant across subgroups in the model), and second, comparing the fit of this choice model with that of the original choice model without the interaction terms.[13]

**Table 5**
Within-sample group comparisons: Choice model.

| Variable | Baseline | Interaction |
|---|---|---|
| Pres. thermometer | .04*** (.00) | .05 (.03) |
| Party ID | .48*** (.05) | .64* (.28) |
| Dem. traits | −1.97*** (.28) | −3.75* (1.81) |
| Rep. traits | 1.88*** (.31) | 2.76 (1.42) |
| Cons. ideology | .32*** (.06) | .22 (.21) |
| Non-white | −.76*** (.20) | −2.33* (1.10) |
| Woman | .02 (.14) | −.11 (.41) |
| Union | −.33* (.16) | −1.03 (.65) |
| 1984 | −.76** (.26) | −2.26 (1.22) |
| 1988 | −1.57*** (.30) | −2.60 (1.40) |
| 1992 | −.94*** (.27) | −4.67* (1.93) |
| 1996 | −.86** (.25) | −2.71* (1.34) |
| 2000 | .09 (.35) | −3.06* (1.39) |
| 2004 | −.97* (.38) | −3.84* (1.77) |
| Constant | −3.94*** (.75) | – |
| Wald $\chi^2(14)$ | | 8.75 |
| Prob. > $\chi^2$ | | .85 |

Note: Baseline presents coefficient estimates for choice model variables. Interaction presents coefficient estimates of choice model variables interacted with timing variable. Robust standard errors in parentheses. Wald test of set of interaction coefficients. $p^* < .05$, $p^{**} < .01$, $p^{***} < .001$, two-tailed z-test. N = 5451.

Given that we have survey weights, we implement a modified version of the procedure in Williams (2010): we estimate the model with the same interactions in the choice model and then use a Wald test to assess whether all interaction terms equal zero.[14]

Tables 5 and 6 below provide the results of the estimation. The coefficient estimates are presented in two columns; however, to be clear, the results are from the estimation of a single model. The first column presents

[11] The model for the latent dependent variable is $y_i^* = \alpha_0 + \alpha_1 x_{i1} + \ldots + \alpha_k x_{ik} + \sigma\varepsilon_i$, where $\sigma$ is the metric for the distribution of the error $\varepsilon_i$. To estimate parameters $\beta_k$ using observed data, we must make assumptions about the distribution of $\varepsilon$ and its metric $\sigma$. Amemiya (1985, 269) notes that $\beta_k = \alpha_k/\sigma$. Thus, allowing $\sigma$ to vary across observations, or groups, makes unclear whether a difference in $\hat{\beta}_k$ across groups is due to changes in $\alpha_k$, $\sigma$, or both (Hoetker, 2004; Williams, 2010; Allison, 1999).

[12] The authors thank Harold Clarke for alerting us to this methodology.

[13] While there has been much analysis of inclusion, testing, and interpretation of interaction terms in nonlinear models (e.g., Ai and Norton, 2003; Norton et al., 2004; Greene, 2010), we do not focus on the effect of a single interacted variable; rather, we use a fully interacted model to compare model specifications, consistent with the procedure in Williams (2010). Furthermore, we are attempting to distinguish between the effect of timing on the variance and the choice parameters, both in the latent dependent variable, which is different from the point made in Berry et al. (2010).

[14] Using survey weights rules out in Stata the possibility of using a likelihood ratio test to compare model fit.

**Table 6**
Within-sample group comparisons: Variance model.

| Variable | Variance estimates |
|---|---|
| Time | $1.21^{***}$ (.19) |
| Partisan strength | .01 (.09) |
| Pol. knowledge | $-.65^{***}$ (.14) |
| Ambivalence | $.10^{**}$ (.03) |
| Battleground | .06 (.08) |
| Wald $\chi^2(5)$ | 61.63 |
| Prob. > $\chi^2$ | .0000 |

Note: Variance model coefficients from same model estimated for Table 5 above. Robust standard errors in parentheses. $p^{*} < .05$, $p^{**} < .01$, $p^{***} < .001$, two-tailed z-test. N = 5451.

the coefficient estimates and robust standard errors for the choice model variables. The second column presents the coefficient estimate for each choice model variable interacted with the timing variable. The variance model also included all variables included in Models 5 and 6 in Table 4, though the variance model results are presented in the subsequent table, Table 6. With a binary heterogeneous choice model, it is necessary to assume that at least one parameter is equal across groups. In this specification, we only assume that, controlling for other choice model predictors, there were no differences in the vote tendencies due to timing of decision in 1980 (see footnote 5).

Table 5 provides evidence that timing does not increase voter uncertainty by weakening the effects of traditional vote choice predictors. For most choice model variables, there is no statistical difference between the baseline and interaction terms. Furthermore, the entire set of interaction terms is not statistically significant at conventional levels. A Wald test of the coefficient estimates of the interaction terms is not close to statistically significant. While it is interesting that the choices of late deciders appear to be no less affected by traditional vote predictors than those of early deciders, we emphasize the results from the variance model, which investigates whether the increasing error variance is also due to the increasing importance of random events for those deciding closer to the election. Table 6 presents the variance model coefficient estimates from the same model presented in Table 5 above.

Table 6 shows that time of voting decision is highly statistically significant. This stands in contrast to the results presented in Table 5, which showed that the votes of late deciders are no less influenced by traditional vote predictors than those of earlier deciders. Taken together, these results indicate that late deciders' choices are less predictable because these voters are more affected by random events. This provides evidence that campaigns affect voters' decisions by making the choices of undecided voters more difficult.

Gelman and King (1993) argue that voters grow more certain as the election draws near, as campaigns remind voters about the fundamentals. However, the results above indicate that randomness plays a greater role as the election draws near, consistent with Kessel (1973). How can this be? It appears that the proportion of those for whom randomness plays a large role declines as the election approaches. Nevertheless, however, for the subset of undecided, cross-pressured voters, the campaign actually makes the vote choice more difficult. The results presented in Table 7 support this argument. The results of the first three models in Table 7 are from estimating the vote choice of early, middle, and late deciders separately using a heteroskedastic probit. For the final two models, we split the subsample of late deciders based on battleground state residence. The table also presents three measures of model fit (see Herron, 1999). Percentage correctly predicted (PCP) gives the percentage of outcomes correctly predicted by the model, where the respondent is predicted to vote for the Republican if the predicted probability is at least 0.5 and for the Democrat otherwise. Percentage reduction in error (PRE) is a measure the improvement of the model's predictions over the baseline prediction that every respondent makes the modal choice. Expected percentage correctly predicted (ePCP) accounts for variation in the predicted probability (Herron, 1999).

Each measure of model fit in Table 7 demonstrates that the vote choice becomes increasingly harder to predict over the course of the campaign. The expected percentage correctly predicted is somewhat smaller for those deciding in the middle of the campaign relative to early deciders and is much smaller for those deciding in the last two weeks before the election compared to both early and middle deciders. Furthermore, the choices of late deciders in battleground states are more difficult to predict than those of late deciders in non-battleground states. It is also worth noting the differences in the role of the variance predictors in the vote choices of early, middle, and late deciders. Among late deciders, the vote choices of those who are ambivalent and those living in battleground states are less predictable. However, for those deciding earlier, neither ambivalence nor battleground residence is significantly associated with error variance. Interestingly, for middle deciders, the variance model is not significant, and for early deciders, the variance model indicates that the choices of less sophisticated voters are less predictable. The late decider model is consistent with research suggesting that campaigns target cross-pressured voters and that it is these voters for whom the campaign plays a large role (Hillygus and Schields, 2008). Although the sample sizes are smaller for the final two models, these models support the argument that campaigns lead to greater uncertainty among conflicted undecided voters. Among late deciders living in battleground states, those who are more ambivalent are less predictable, while less knowledgeable late deciders are no more predictable than sophisticated late deciders; however, for late deciders living in non-battleground states, only those who are less knowledgeable are significantly less predictable (although the variance model for late deciders in non-battleground states is not significant). This suggests that the dynamics of campaigns are more complicated than suggested by the Gelman and King (1993) model. Also, the results imply that campaigns have an additional effect heretofore missed by analyses focusing only on vote choice: for a subset of voters, campaigns appear to generate greater unpredictability as the election draws near and the campaign environment grows more intense.

**Table 7**
Group comparisons (split sample).

| Variable | Early | Middle | Late | Late non-battle | Late battle |
|---|---|---|---|---|---|
| **Choice model** | | | | | |
| Pres. thermometer | .04*** (.01) | .02*** (.00) | .02*** (.00) | .02*** (.00) | .01* (.00) |
| Party ID | .52*** (.06) | .27*** (.05) | .25*** (.04) | .20*** (.05) | .30*** (.08) |
| Dem. traits | −2.28*** (.34) | −1.83*** (.30) | −.64*** (.18) | −.75*** (.21) | −.30 (.20) |
| Rep. traits | 2.09*** (.33) | 1.66*** (.33) | .66*** (.17) | .79*** (.24) | .56** (.19) |
| Cons. ideology | .34*** (.07) | .19* (.08) | .17** (.06) | .20** (.07) | .11 (.08) |
| Non-white | −.83*** (.21) | −.91*** (.28) | −.52** (.20) | −.40 (.25) | −.40 (.29) |
| Woman | −.02 (.15) | .02 (.16) | .09 (.14) | .18 (.16) | −.19 (.19) |
| Union | −.35 (.18) | −.40* (.18) | −.22 (.18) | −.29 (.20) | .11 (.08) |
| Constant | −3.91 | −1.56 | −1.91 | −2.15 | −1.99 |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes |
| Wald $\chi^2$ | 108.58 | 101.20 | 96.52 | 74.73 | 61.01 |
| Prob. > $\chi^2$ | .0000 | .0000 | .0000 | .0000 | .0000 |
| N | 3604 | 932 | 915 | 546 | 369 |
| **Variance model** | | | | | |
| Par. strength | −.01 (.12) | −.09 (.14) | −.05 (.13) | −.25 (.21) | .21 (.22) |
| Pol. knowledge | −1.08*** (.16) | −.31 (.23) | −.41 (.28) | −.90* (.39) | −.45 (.77) |
| Ambivalence | .07 (.05) | .10 (.06) | .17* (.07) | .01 (.08) | .58* (.29) |
| Battleground | .06 (.12) | −.11 (.16) | .39* (.19) | – | – |
| Wald $\chi^2$ | 49.73 | 5.38 | 12.04 | 5.28 | 8.87 |
| Prob. > $\chi^2$ | .0000 | .25 | .02 | .15 | .05 |
| **Model fit** | | | | | |
| PCP | 97.45% | 91.74% | 72.57% | 76.92% | 70.46% |
| PRE | 94.41% | 82.46% | 43.72% | 51.91% | 40.75% |
| ePCP | 95.93% | 87.08% | 64.39% | 67.56% | 62.45% |

Note: Choice and Variance model coefficient estimates presented. Robust standard errors in parentheses. $p^* < .05$, $p^{**} < .01$, $p^{***} < .001$, two-tailed z-test. N = 5451. PCP is percentage of outcomes correctly predicted. PRE is percentage reduction in error. ePCP is expected percentage of outcomes correctly predicted (see Herron, 1999).

## 6. Conclusion

Based on our knowledge about the long- and short-campaign and the variation in the way that voters integrate the factors that affect voting decisions during the stages of a presidential election, we expect that the error variance will increase for voters deciding later in the course of the election cycle. A heteroskedastic probit model confirmed these expectations about the error variance in several presidential elections. We also find that the increased error variance for late deciders is driven by the greater importance of random events rather than a weaker effect of typical vote choice predictors. Additionally, we find that the decisions of late deciding voters are more difficult to predict in battleground states. Finally, we find that the votes of ambivalent late deciders in battleground states are even less predictable than those of less conflicted late deciding battleground state residents, a pattern absent in non-battleground states. This suggests that, for some voters, the campaign does not reinforce partisan predispositions but rather makes voting less predictable. This is consistent with previous research demonstrating that campaigns target cross-pressured voters (Hillygus and Schields, 2008) and that competitive campaign information can increase voter uncertainty (Matthes, 2012), possibly delaying the vote decision (Nir and Druckman, 2008).

Voters vary in the weights attached to long- and short-term factors. Long-term factors, such as political attitudes, demographic attributes, and the party record, reflect the information and considerations that are available to the voter before the presidential campaign even begins. Short-term factors focus on the day-to-day campaign events. Our evidence of the effect of the timing variable provides support for these ideas as well as for the argument that the campaign has an effect, although not the sort of effect typically contemplated by scholars. We argue that the campaign has a subtle effect on the variation (or uncertainty) associated with voting decisions. If the campaign did not have an effect, we would not see the increase in variance according to the timing of the decision in our model. The timing of the vote decision is also related to the level of attitude consistency. Those who wait longer to decide tend to be more ambivalent between competing candidates because some considerations favor one party while other considerations favor another. Finally, political information reduced the error variance in our model, but not among undecided battleground state residents.

There are two competing explanations for our results. One is that decision timing is a somewhat noisy proxy for campaign exposure. The other is that decision timing reflects the impact of information, ambivalence, and strength of partisanship, which are measured with error in our study. If the decision timing variable reflects the impact of the campaign, then decision timing should have a bigger impact on the error variance of the voting model in years with close elections, when the campaign is especially intense. When comparing different election years, we do find a positive correlation between the competition measure (portrayed in Table 1) and the impact of the decision timing variable on the error variance, but the relationship is weak ($\rho = .13$). An additional piece of evidence is that

residing in a battleground state increases unpredictability for late deciders but not for other groups, suggesting that campaign information is associated with the timing of the vote decision.

However, if knowledge, ambivalence, and strength of partisanship moderate the impact of decision timing on the error variance, then we should see the coefficient on the timing variable get smaller when those covariates are added to the variance equation in Table 4. That does not happen. If anything, the impact of decision timing on the error variance increases when the covariates are included. Further study is needed to pin down the process that produces the relationship between decision timing and uncertainty in vote choice.

Clearly, not all voters are the same in the way they integrate a variety of factors into a voting decision. It is important for voting behavior research to incorporate differences in the extent to which voters are influenced by campaign events, as well as differences in voter knowledge and attitude conflict. As a result, some voters have more uncertainty associated with their decisions and a wider range of potential choices than other voters, and these expectations can be included in a model of vote choice.

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## Appendix

### *Dependent variable*

*Presidential vote choice*: A dichotomous variable indicating whether the respondent voted for the Republican (= 1) or Democrat (= 0).

### *Independent variables*

*President Thermometer*: Feeling thermometer rating of the president, ranging from 0 to 97. The scale is reversed in years when a Democrat is in the White House.

*Economy*: Approval of the president's handling of the economy: 1 = disapprove strongly, 2 = disapprove not strongly, 3 = approve not strongly, and 4 = approve strongly. The scale is reversed in years when a Democrat is in the White House.

*Party Identification*: A seven category variable coded such that higher values of the variables are more Republican. So 0 = strong Democrat, 1 = weak Democrat, 2 = Independent that leans Democrat, 3 = Independent, 4 = Independent that leans Republican, 5 = weak Republican, and 6 = strong Republican.

*Republican and Democratic candidate traits*: Answers to questions about positive traits, such as "How well does trustworthy describe [Candidate] ?" were recoded into dichotomous variables (the trait fits or it does not) and then summed for each candidate. There is a standard battery of such items on the NES. The traits in the questions are: intelligent, compassionate, moral, inspiring, provides strong leadership, decent, really cares about people like you, knowledgeable, and honest. Both trait scales are reliable (Cronbach's $\alpha$ = .88 for Democratic candidate traits and $\alpha$ = .90 for Republican candidate traits).

*Non-White*: A dichotomous variable with non-white = 1.

*Woman*: A dichotomous variable with female = 1.

*Union member*: A dichotomous variable where someone in the family belongs to a labor union = 1.

*Conservative Ideology*: Self-reported ideology, ranges from 1 to 7 with higher values being more conservative. 1 = Extremely Liberal, 2 = Liberal, 3 = Slightly Liberal, 4 = Moderate or Middle of Road, 5 = Slightly Conservative, 6 = Conservative, 7 = Extremely Conservative.

*Time*: Time of voting decision for president, coded into three categories: (0) before the end of the conventions, (1) from the end of the conventions up to two weeks before the election, and (2) during the last two weeks before the election.

*Political Knowledge*: Knowledge is measured as the proportion of correct answers to five questions: (1) the party holding a majority in the Senate; (2) the party holding a majority in the House before the election; (3) the party holding a majority in the House after the election; (4) recalling the names of House candidates in the respondent's district; and (5) which party is more conservative. Cronbach's $\alpha$ for the knowledge scale is .72. This scale is then standardized, with 49.26% of all observations falling at or below .007. This variable was recoded for each sample for which a model was estimated.

*Partisan Strength*: Partisan strength is based on three items: (1) the 4-point strength of party identification (VCF0305); (2) the absolute difference in party thermometer ratings (VCF0218 and VCF0224); and (3) and the absolute difference in party affect, based on the party likes and dislikes questions (VCF0322). We standardized and then averaged the three items together. Cronbach's $\alpha$ is .67 for the scale. Then, we subtracted the mean, so that the average respondent was scored at 0. This variable was recoded for each sample for which a model was estimated.

*Ambivalence*: Ambivalence toward the major party presidential candidates is measured using the number of likes and dislikes mentioned and a formula used by Lavine and colleagues (Lavine, 2001; Basinger and Lavine, 2005; Lavine et al., 2012). Higher scores indicate greater ambivalence. We subtracted the mean from this measure.[15] This variable was recoded for each sample for which a model was estimated.

*Battleground State*: A dummy variable indicating the most pivotal states in the presidential election, based on coding by Gerber et al. (2009).

[15] Alternatively, subtracting the median does not change the results.

When any continuous choice model variable is used in the variance model in the stepwise procedure, it is standardized in the variance model.

## References


Abramson, P.R., Aldrich, J.H., Rohde, D.W., 1995. Change and Continuity in the 1992 Elections. Congressional Quarterly, Washington.

Achen, C.H., 2002. Toward a new political methodology: microfoundations and ART. Annu. Rev. Polit. Sci. 5, 423–450.

Ai, C., Norton, E.C., 2003. Interaction terms in logit and probit podels. Econ. Lett. 80 (1), 123–129.

Allison, P., 1999. Comparing logit and probit coefficients across groups. Sociol. Methods Res. 28 (2), 186–208.

Alvarez, R.M., 1997. Information and Elections. University of Michigan Press, Ann Arbor.

Alvarez, R.M., Brehm, J., 1995. American ambivalence towards abortion policy: development of a heteroskedastic probit. Am. J. Polit. Sci. 39 (4), 1055–1082.

Alvarez, R.M., Brehm, J., 1997. Are Americans ambivalent towards racial policies? Am. J. Polit. Sci. 41 (2), 345–374.

Amemiya, T., 1985. Advanced Econometrics. Harvard University Press, Cambridge.

Ballew, C.C., Todorov, A., 2007. Predicting political elections from rapid and unreflective face judgments. Proc. Natl. Acad. Sci. U. S. A. 104 (46), 17948–17953.

Bartels, L.M., 2006. Priming and persuasion in presidential campaigns. In: Brady, H.E., Johnston, R. (Eds.), Capturing Campaign Effects. University of Michigan Press, Ann Arbor.

Basinger, S.J., Lavine, H.G., 2005. Ambivalence, information, and electoral choice. Am. Polit. Sci. Rev. 99 (2), 169–184.

Battaglio, R.P., 2009. Privatization and citizen preferences: a cross-national analysis of demand for private versus public provision of services in three industries. Adm. Soc. 41 (1), 38–66.

Beck, P.A., Dalton, J.R., Greene, S., Huckfeldt, R., 2002. The social calculus of voting: interpersonal, media, and organizational influences on presidential choices. Am. Polit. Sci. Rev. 96 (1), 248–266.

Berelson, B., Lazarsfeld, P.F., McPhee, W.N., 1954. Voting: a Study of Opinion Formation in a Presidential Campaign. Chicago University Press, Chicago.

Berry, W.D., DeMerritt, J.H.R., Esarey, J., 2010. Testing for interaction in binary logit and probit models: is a product term essential? Am. J. Polit. Sci. 54 (1), 248–266.

Blimes, R.J., 2006. The indirect effect of ethnic heterogeneity on the likelihood of civil war onset. J. Confl. Resolut. 50 (4), 536–547.

Box-Steffensmeier, J.M., Franklin, C.H., 1995. The long campaign: Senate elections in 1992. In: Weisberg, H. (Ed.), Democracy's Feast: Elections in America. Chatham House, Chatham.

Braumoeller, B.F., 2006. Explaining variance; or, stuck in a moment we can't get out of. Polit. Anal. 14 (3), 268–290.

Brox, B., Giammo, J., 2009. Late deciders in U.S. presidential elections. Am. Rev. Polit. 30, 333–354.

Campbell, A., Converse, P.E., Miller, W.E., Stokes, D.E., 1960. The American Voter. Wiley, New York reprinted 1980 by University of Chicago Press.

Campbell, J.E., 1999. The Competitive Effect of Presidential Campaigns. Presented at the Annual Meeting of the Midwest Political Science Association, Chicago.

Campbell, J.E., 2001. Presidential election campaigns and partisanship. In: Cohen, J.E., Fleischer, R., Kantor, P. (Eds.), American Political Parties: Decline or Resurgence. Congressional Quarterly, Washington.

Chen, L., Reeves, A., 2011. Turning out the base or appealing to the periphery? An analysis of county-level candidate appearances in the 2008 presidential campaign. Am. Polit. Res. 39 (3), 534–556.

Clark, D.H., Nordstrom, T., Reed, W., 2008. Substitution is in the variance: resources and foreign policy choice. Am. J. Polit. Sci. 52 (4), 763–773.

Druckman, J.N., Chong, D., 2010. Dynamic public opinion: communication effects over time. Am. Polit. Sci. Rev. 104 (4), 663–680.

Durant, R.F., Legge, J.S., 2005. Public opinion, risk perceptions, and genetically modified food regulatory policy: reassessing the calculus of dissent among European citizens. Eur. Un. Polit. 6 (2), 181–200.

Erikson, R.S., MacKuen, M.B., Stimson, J.A., 2008. The Macro Polity. Cambridge University Press, Cambridge.

Flanigan, W.H., Zingale, N.H., 1994. Political Behavior of the American Electorate, eighth ed. Congressional Quarterly, Washington.

Fournier, P., Nadeau, R., Blais, A., Gidengil, E., Nevitte, N., 2004. Time-of-voting decision and susceptibility to campaign effects. Elect. Stud. 23 (4), 661–681.

Fulton, S.A., Ondercin, H.L., 2012. Does sex encourage commitment? The impact of candidate choices on the time-to-decision. Polit. Behav. 35 (4), 665–686.

Garner, A., Palmer, H., 2011. Polarization and issue consistency over time. Polit. Behav. 33 (2), 225–246.

Gelman, A., King, G., 1993. Why are American presidential election campaign polls so variable when votes are so predictable? Br. J. Polit. Sci. 23 (4), 409–451.

Gerber, A.S., Huber, G.A., Dowling, C.M., Doherty, D., Schwartzberg, N., 2009. Using Battleground States as a Natural Experiment to Test Theories of Voting. Presented at the Annual Meeting of the American Political Science Association, Toronto.

Green, D.P., Palmquist, B., Schickler, E., 2002. Partisan Hearts and Minds: Political Parties and the Social Identities of Voters. Yale University Press, New Haven.

Greene, W.H., 1993. Econometric Analysis. MacMillan, New York.

Greene, W.H., 2010. Testing hypotheses about interaction terms in nonlinear models. Econ. Lett. 107 (2), 291–296.

Healy, A., Malhotra, N., 2009. Myopic voters and natural disaster policy. Am. J. Polit. Sci. 103 (3), 387–406.

Herron, M.C., 1999. Postestimation uncertainty in limited dependent variable models. Polit. Anal. 8 (1), 83–98.

Hillygus, D.S., Schields, T., 2008. The Persuadable Voter: Wedge Issues in Presidential Campaigns. Princeton University Press, Princeton.

Hoetker, G., 2004. Confounded Coefficients: Extending Recent Advances in the Accurate Comparison of Logit and Probit Coefficients Across Groups. Working paper.

Huber, G.A., Arceneaux, K., 2007. Identifying the persuasive effects of presidential advertising. Am. J. Polit. Sci. 51 (4), 957–977.

Huckfeldt, R., Johnson, P.E., Sprague, J., 2002. Political environments, political dynamics, and the survival of disagreement. J. Polit. 64 (1), 1–21.

Iyengar, S., Kinder, D.R., 1987. News That Matters. Chicago University Press, Chicago.

Johnston, R.N., Haben, G., Jamieson, K.H., 2004. The 2000 Presidential Election and the Foundations of Party Politics. Cambridge University Press, Cambridge.

Keele, L., Park, D.K., 2006. Difficult Choices: an Evaluation of Heterogeneous Choice Models. Working paper.

Kenski, K.M., 2007. Gender and time of voting decision. J. Polit. Mark. 6 (1), 1–22.

Kessel, J.H., 1968. The Goldwater Coalition: Republican Strategies in 1964. Bobbs-Merrill, Indianapolis.

Kessel, J.H., 1973. Pennsylvania. In: Kovenock, D.M., Prothro, J.W. (Eds.), Explaining the Vote: Presidential Choices in the Nation and the States. University of North Carolina Press, Chapel Hill.

Kinder, D.R., 1986. Presidential character revisited. In: Lau, R.R., Sears, D.O. (Eds.), Political Cognition. Erlbaum, Hillsdale.

Kinder, D.R., Adams, G.S., Gronke, P.W., 1984. Economics and politics in the 1984 American presidential election. Am. J. Polit. Sci. 33 (2), 491–515.

King, G., 1989. Unifying Political Methodology: The Likelihood Theory of Statistical Inference. University of Michigan Press, Ann Arbor.

Kosmidis, S., Xezonakis, G., 2010. The undecided voters and the economy: campaign heterogeneity in the 2005 British election. Elect. Stud. 29 (4), 604–616.

Krosnick, J.A., Pfent, A., Courser, M., 2003. Rationalization and Derivation Processes in the 2000 Presidential Election: New Evidence About the Determinants of Citizens' Vote Choices. Presented at the Annual Meeting of the American Association for Public Opinion Research, Tennessee.

Lau, R.R., Redlawsk, D.P., 1997. Voting correctly. Am. Polit. Sci. Rev. 91 (3), 585–598.

Lavine, H.G., 2001. The electoral consequences of ambivalence toward presidential candidates. Am. J. Polit. Sci. 45 (4), 915–929.

Lavine, H.G., Johnston, C.D., Steenbergen, M.S., 2012. The Ambivalent Partisan: How Critical Loyalty Promotes Democracy. Oxford University Press, New York.

Lazarsfeld, P.F., Berelson, B., Gaudet, H., 1944. The People's Choice: How the Voter Makes up His Mind in a Presidential Election. Columbia University Press, New York.

Lewis-Beck, M.S., Jacoby, W., Norpoth, H., Weisberg, H.F., 2008. The American Voter Revisited. University of Michigan Press, Ann Arbor.

Long, J.S., 1997. Regression Models for Categorical and Limited Dependent Variables. Sage, Thousand Oaks.

Matthes, J., 2012. Exposure to counterattitudinal news coverage and the timing of voting decisions. Commun. Res. 39 (2), 147–169.

Miller, W.E., Shanks, J.M., 1996. The New American Voter. Harvard University Press, Cambridge.

Nir, L., Druckman, J.N., 2008. Campaign mixed-message flows and timing of vote decision. Int. J. Public Opin. Res. 20 (3), 326–346.
Norton, E.C., Wang, H., Ai, C., 2004. Computing interaction effects and standard errors in logit and probit models. Stata J. 4 (2), 154–167.
Rahn, W.M., Krosnick, J., Breuning, M., 1994. Rational and derivation processes in survey studies of political candidate evaluation. Am. J. Polit. Sci. 38 (3), 582–600.
Ridout, T.N., Franz, M.M., 2014. The Persuasive Power of Campaign Advertising. Temple University Press, Philadelphia.
Rudolph, T.J., 2011. The dynamics of ambivalence. Am. J. Polit. Sci. 55 (3), 561–573.
Ryan, J.B., 2011. Social networks as a shortcut to correct voting. Am. J. Polit. Sci. 55 (4), 753–766.
Shaw, D.R., 2006. The Race to 270: The Electoral College and the Campaign Strategies of 2000 and 2004. Chicago University Press, Chicago.
Sides, J., Vavreck, L., 2013. The Gamble: Choice and Chance in the 2012 Presidential Election. Princeton University Press, Princeton.
Smith, D.A., Tolbert, C.J., 2004. Educated by Initiative. University of Michigan Press, Ann Arbor.
Sokhey, A.E., McClurg, S.D., 2011. Social networks and correct voting. J. Polit. 74 (3), 751–764.
Stein, R., 1998. Early voting. Public Opin. Q. 62 (1), 57–69.
Szmer, J., Songer, D.R., 2005. The effects of information on the accuracy of presidential assessments of Supreme Court nominee preferences. Polit. Res. Q. 58 (1), 151–160.
Tufte, E.R., 1975. Determinants of the outcomes of midterm congressional elections. Am. Polit. Sci. Rev. 69 (3), 812–826.
Weinschenk, A.C., 2010. Revisiting the political theory of party identification. Polit. Behav. 32 (4), 473–494.
Williams, R., 2009. Using heterogeneous choice models to compare logit and probit coefficients across groups. Sociol. Methods Res. 37 (4), 531–559.
Williams, R., 2010. Fitting heterogeneous choice models with oglm. Stata J. 10 (4), 540–567.
Zaller, J.R., 1992. The Nature and Origins of Mass Opinion. Cambridge University Press, Cambridge.
Zschirnt, S., 2011. The origins and meaning of liberal/conservative self-identifications revisited. Polit. Behav. 33 (4), 685–701.