

Political Learning During the 2000 U.S. Presidential Election: The Impact of the Information Environment on the Gender Gap in Political Knowledge

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Abstract

In this paper we examine how the information environment influences individuals' levels of correct, incorrect, and don't know responses and the gender gap in knowledge over the course of an American presidential campaign. Using data from the 2000 National Annenberg Election Survey (NAES), we demonstrate that as the campaign progresses the electorate provides more correct answers and fewer incorrect answers. Moreover, the political campaign significantly reduces (and possibly eliminates) the direct effect of sex on political knowledge. While the political campaign decreases the number of incorrect answers provided by both men and women, the rich informational environment associated with the political campaign increases the number of correct answers provided by women. Our findings highlight the importance of the information environment in determining relative levels of political knowledge for men and women.

The study of political knowledge largely focuses on the level of knowledge in the electorate and whether the electorate has enough political knowledge to sustain a functioning democracy (Bennett 1989; Bennett and Bennett 1989; Delli Carpini and Keeter 1996, Lupia and McCubbins 1998; Popkin 1991; Bartels 1996, 2008; Garand and Lichtl 2000). However the level of knowledge is not uniform across the entire population. One of the most perplexing knowledge gaps found in the electorate is between men and women. Despite attempts to account for the differences in political knowledge observed between women and men, the gender gap in political knowledge continues to puzzle scholars (Lizotee and Sidman 2009; Delli Carpini and Keeter 1996, 2000; Kenski and Jamieson 2001; Verba, Burns, and Schlozman 1997; Mondak, 1999). Furthermore, the gender gap in knowledge persists cross-nationally (Claibourne and Sapiro, 2001; Gidengil, Goodyear-Grant, Nevitte, Blais, and Nadeau, 2003; Frazer and Macdonald. 2003).

A growing body of literature has examined the role that political campaigns play in creating an information environment to educate voters about the candidates and policies and influence the voting process (Holbrook 2002, 1999, 1996; Alverz 1997). However, when examining knowledge gaps these studies largely focus on knowledge gaps that are a function of socio-economic status (Holbrook 2002; Nadeau et al. 2008; Ticheor et. al. 1970; Kawk 1999). These studies tend to include sex as a control variable but do not address the potential differential impact that campaigns could have on the gender gap in political knowledge.

In this paper we examine the impact of political campaign on levels of political knowledge in the electorate and the gender gap in political knowledge over the course of the 2000 American presidential campaign. Specifically, we use data from the 2000 National Annenberg Election Studies (NAES) to track changes over time in *correct*, *don't know*, and *incorrect* responses to a battery of political knowledge questions about candidate characteristics. We find that the political

campaign helps individuals provide more correct answers and fewer incorrect answers. However, the impact of the political campaign is not the same for men and women. The political campaign helps eliminate sex differences in the number of correct and don't know responses. This is largely a function of campaigns increasing women's level of correct responses and increasing men's level of don't know responses. Political campaigns reduce the number of incorrect responses provided by both men and women.

Understanding the impact of the information environment created by political campaigns has important implications for the representative nature of democracy in the United States and cross-nationally. Political knowledge influences both the likelihood of participating in politics and the quality of that participation (Ondercin and Jones-White 2010; Burns et. al. 2001; Delli Carpini and Keeter 1996; Verba et. al. 1995; Junn 1991; Bartels 1996). Thus the information environment created by campaigns has the potential to increase the representative nature of political systems.

THE INFORMATION ENVIRONMENT AND THE ACQUISITION OF KNOWLEDGE

Individuals' levels of political knowledge are largely determined by ability, opportunity and motivation (Delli Carpini and Keeter 1996; Delli Carpini, Ketter and Kennamer 1994; Mondak 1999; Davis and Silver 2003; Luskin 1990). Individuals must have the cognitive skills or ability to obtain, process, and understand political information. Given the basic prerequisite of ability, individuals' levels of political knowledge increase when they are provided with the opportunity to gain political information and when they are interested in obtaining political information. While many of these explanations focus on the individual, increasingly scholars have examined how the information environment shapes the acquisition of political knowledge (Barabas and Jerit 2009; Jerit and Barabas 2006; Jerit, Barabas, and Bolsen 2006; Delli Carpini, Keeter, and Kennamer 1994; Zukin and Snyder 1984; Nicholson 2003). Both the amount and the quality of information

present in the environment has been shown to influence levels of political knowledge (Barabas and Jerit 2009; Jerit and Barabas 2006). Changes in the information environment have been shown to alter the factors that individuals bring to bear on political judgments (Krosnick and Brannon 1985). Moreover the political context can make some topics more relevant for some social groups in the electorate than others (Hutchings 2001). Hence, the information environment may have varying effects on different groups in the electorate.

The political campaign represents a specific information environment that has captured the attention of many scholars (Hoolbrooke 2006, 1996; Dolton, Beck, and Huckfeldt 1998; Druckman 2005; and Freedom, Franz, and Goldstein 2004). Over the course of a political campaign, the information environment becomes increasingly saturated. Politicians—in terms of both their personalities and politics—become a prominent feature of newspapers, nightly news broadcasts, cable news programs, and even the late night talk shows and *People Magazine*. Political advertisements increasingly can be found on every television and radio station. The amount and accessibility of information about politics available to citizens is substantially higher during campaigns than during periods in which campaigns are dormant. As Election Day approaches, the opportunities for individuals to acquire political knowledge increase significantly.

We focus on the information environment of a political campaign and its effect on the acquisition of political knowledge because it is during the election cycle that the majority of Americans engage in politics. This is partly because it is only during an election that citizens have the opportunity to vote. Additionally, during the course of the campaign individuals are presented with more opportunities and asked more often to engage in other political acts, such as volunteering for a campaign or donating money. The effect of the information environment on

political knowledge over the course of a campaign is a particularly important subject of study because it is within this context that most Americans actually engage and participate in politics.

Political campaigns have been shown to affect the knowledge of the electorate in multiple ways. First, one of the primary functions of a campaign is to educate the voters on both the candidates and the issues (Alvarez 1997; Holbrook 1996; Popkin 1990). Second, the conventions, debates, and political advertisements associated with campaigns promote political learning by increasing the richness of the information environment (Holbrook 1996; Freedman, Franz, and Goldstein 2004). Additionally, campaigns increase political learning through their effect on cognition (Holbrook 2006) and emotional appeals (Markus and Makuen 1993).

Learning is often conceptualized as an active process, where individuals need to be engaged and interested in the subject matter for them to acquire new knowledge. This standard is often too high for most Americans, many of whom are not engaged or interested in politics most of the time (Verba, Schlozman, and Brady 1995). We believe that with the saturated information environment of political campaigns citizens are more likely to acquire knowledge through passive learning (Zukin and Synder 1984; Krugman and Hartly 1970), which does not require the same level of motivation and interest. Through the simple and repetitive exposure to politics created by political campaigns, citizens are likely to pick up some new information. Of course, individuals engaged in active learning will also increase their political knowledge in an information-rich environment. However, because active learners are already likely to have higher levels of political knowledge, exposure to political information during the campaigns will have a smaller impact on their overall levels of political knowledge.

The extant research on learning over the course of the campaign largely focuses on the acquisition of correct information. While we examine the influence of campaigns on the number

of correct responses, we also look at the influence campaigns have on incorrect and don't know responses. We examine the dynamics of the don't know and incorrect responses to gain a better understanding of the influence campaigns have on political knowledge.

Existing scholarship leads us to a number of empirical expectations. First, based on the research on learning over the campaign, we expect that as the information environment becomes more saturated levels of political knowledge in the electorate should increase. The number of correct responses provided by individuals therefore will increase as a function of campaign week. Second, we expect the number of incorrect answers to decline over the course of the campaign. The more information present in the environment the greater the opportunity for individuals to become informed. However, the impact on incorrect answers may be limited by two factors. Previous research has suggested that the minds of the misinformed are harder to change than the uninformed (Kuklinski, Quirk, Jerit, Schweider, and Rich, 2000). Second, the quality of information present in the information environment will also affect the potential reduction of incorrect responses (Jerit and Barabas 2006). We assume that on average the information is accurate in the information environment. Finally, we expect that as the information environment becomes more saturated the rate of don't know response should decrease. Mondak and colleagues (Mondak 1999, 2001; Mondak and Davis 2001) have suggested that don't know responses mask partial knowledge. If this is the case the increased opportunity for learning created by the saturated information environment during campaigns should reduce the number of don't know responses.

INFORMATION ENVIRONMENT AND THE GENDER GAP IN KNOWLEDGE

While we expect that the campaign will increase the levels of political knowledge in the aggregate electorate, we speculate that the effect of the campaign will differ across various groups in the electorate. Specifically we posit that the campaign has a differential effect on men and women.

The existing literature finds that campaigns do not generally help reduce knowledge gaps within the electorate. Rather, individuals who are already knowledgeable about politics possess the motivation, interest, and cognitive ability to acquire new knowledge more easily. As a result, when exposed to more information individuals with high levels of knowledge often become even more knowledgeable while the less knowledgeable fail to increase their political knowledge at a rate that permits them to keep up with their more knowledgeable counterparts (Nadeau et. al. 2008; Prior 2005; Holbrook 2002, 1995; Gaziano 1997; Zaller and Price 1993; Genova and Greenburg 1979; Tichenor, Donohue, and Olien 1970).

However, the gender gap in political knowledge may not be equivalent to other gaps in political knowledge. The gender gap in political knowledge cannot be explained away completely by motivation, opportunity or ability (Delli Carpini and Keeter 1996, 2000; Kenski and Jamieson 2001; Verba, Burns, and Schlozman 1997; Mondak, 1999; Mondak and Anderson 2004; Dow 2009). Furthermore, for some scholars the gender gap in political knowledge is partially a function of the greater propensity of women to offer don't know responses rather than hazard an informed guess (Mandak 1999, 2001; Gidengil et. al. 2003). However, even after accounting for women's greater likelihood of answering don't know the gender gap in knowledge persists (Frazer and Macdonald 2003; Jamieson 2000).

Given the greater opportunity to learn about politics afforded by the information environment, we expect the political knowledge gap between men and women to diminish as the presidential campaign progresses. There are multiple mechanism underlying our expectation that the gender gap in knowledge should shrink over the course of the campaign. First, some of the information to which men are exposed to over the course of the campaign will be new information, but some of it will be old information. The same goes for women; some of the information will be old and some

will be new. But the mix of new and old information for men and women is likely to be different. Specifically, because men already know more about politics at the beginning of the campaign, there is less new information for them to learn relative to women. Thus while the saturation of the information environment provides greater opportunities for both men and women, there is simply more that women can learn.

The second reason we expect the gender gap in political knowledge to decrease over the course of the campaign relates both to passive learning and alternative sources of information. As noted, the saturated information environment during a campaign is ripe for individuals to pick up knowledge about politics, even after controlling for interest and motivation. As campaigns progress the information environment becomes so saturated that practically everywhere one turns there is information about the candidates and the election. This includes many soft news sources that would not normally be considered sources of political information, such as *People Magazine*, *Vogue* and other women's magazines, gossip news shows like *Entertainment Tonight*, and daytime talk shows. Research shows that soft news can increase political learning among groups traditionally inattentive to politics (Hollander 2005; Baum 2003, 2002). Therefore, women should gain knowledge relative to men.

The third reason why we would expect to see the gender gap in correct answers decrease over the course of the campaign is related to sex differences in don't know responses. As discussed above, the use of the don't know category may be masking partial knowledge (Mondak 1999, 2001; Mondak and Davis 2001). Exposure to greater amounts of information during the campaign could reduce the rate at which the don't know response is employed. Sex differences in the rate of don't know response is often attributed to personality and confidence differences between men and women (Lizotte and Sidman 2009; Gidengil et. al. 2003). The saturation of the information

environment during the political campaign should increase both the accessibility of information and women's confidence in politics, making wagering a guess less risky and decreasing the likelihood of women choosing the don't know option. This increase in the willingness of women to hazard a guess leads us to expect the number of correct answers to increase among women, reducing the gender gap in correct answers. Furthermore, we would also expect the number of don't know responses to decrease among women, decreasing the gender gap in don't know responses. Alternatively, some view women's use of the don't know response as a form of political disengagement (Frazer and Macdonald 2003). Under these conditions we would expect the campaign to have a limited effect on the levels of don't know response, creating essentially no influence on the gender gap that exists with don't know response.

Finally, we expect the gap in incorrect responses to decrease. We expect that both men and women convert incorrect answers into correct answers over the course of the campaign. If women increase their correct answers at a greater rate, their rate of conversion from incorrect to correct will be faster than men's rate of conversion, thus reducing the gender gap in incorrect answers.

DATA

Using data from the 2000 National Annenberg Election Studies (NAES), we track changes in political knowledge and sex differences in knowledge over the course of the 2000 U.S. presidential campaign. The rolling cross-section format of the NAES permits us to assess the influence of the information environment as the campaign unfolds. The NEAS conducted a large national cross-section starting in mid-December of 1999 and continuing through the election. Between 50 and 300 interviews were conducted each day, providing us with a mean of approximately 1,342 observations every week.¹

Measuring Political Knowledge and the Information Environment

The measurement of political knowledge has been the subject of considerable debate and has centered around two questions (Delli Carpini and Keeter 1993; Mondak and Creel Davis 2001; Mondak 1999). First, what types of knowledge questions should provide the best measure of political knowledge? Political knowledge is a multidimensional concept and can refer to many different types of information: the rules of the game, the people and players (i.e., political figures), domestic and foreign affairs, and geography and history (Delli Carpini and Keeter, 1996, 1993). In this study we focus on the people and players, using questions from the NAES to tap respondent's knowledge about the personal characteristics of the two major party presidential candidates in the 2000 election. These items ask respondents to recall to the best of their knowledge whether George Bush or Al Gore: (1) is the son of a former senator (Gore); (2) is a born-again Christian (Bush); (3) favors biggest tax cut (Bush); (4) favors biggest increase for social security (Gore); and (5) supported a concealed handgun law (Bush). Complete question wording and response categories are provided in Appendix A.²

Given the extensive use of informational shortcuts by voters, the type of information measured by these questions is highly useful to voters in making "correct" voting decisions. Additionally, previous research has demonstrated that the electorate tends to be information generalists, if knowledgeable about one aspect of politics they are usually knowledgeable about other areas of politics (Delli Carpini and Keeter 1993, 1996). Our measure of knowledge is therefore a reasonable indicator of overall level of political knowledge.³

The second major debate about the measurement of political knowledge is how to treat don't know responses (Sturgis 2008; Mondak and Creel Davis 2001; Mondak 1999). Since we are interested in the influence of the information environment on the level of political knowledge in the electorate, it is important not only to examine the level of correct answers but also the role the

information environment has on incorrect and don't know responses. As a result we create three knowledge indexes based on the five questions listed above. The first index represents the total number of correct responses across these five items. The second index is the total number of incorrect or wrong responses and the third represents the total number of don't know responses. Each index has a possible range from 0 to 5.

It is possible that our measurement of political knowledge could introduce a "ceiling effect" into our statistical analysis. Like others, we measure political knowledge as an index. This could place an artificial limit on the effect of the presidential campaign on an individual's political knowledge. The ceiling effect would occur if an individual learned information over the course of the campaign but already possessed the highest level of political knowledge possible given our index. Because of their higher average levels of political knowledge, men might be more likely to experience a ceiling effect than would women. If our measure caused men to frequently suffer from the ceiling effect but allowed women to largely avoid it our analysis might systematically underestimate the effect of the campaign on men's correct answers, relative to women's correct answers. This scenario, however, is highly unlikely: less than 9% of men in our sample provide correct answers to all of the questions in our knowledge index. Therefore, the overall low levels of political knowledge and our use of a multi-question index limit the influence a possible ceiling effect has on shaping our results.

Our key independent variable is campaign week, which is a simple count of the number of weeks since the "start" of the campaign. Given the advent of the continuous campaign, identifying a start date for the campaign is difficult. Due to data limitations, we define the start date as when the NAES started to ask the political knowledge questions used in our analysis. While the ANES initially went into the field on December 14, 1999 and continued to survey the public until January

19, 2001, they did not ask the political knowledge questions over this entire time period. Specifically, our analysis is restricted to start on April 3, 2000 and end during the week of the general election.

We examine the potential of a non-linear relationship between campaign week and political knowledge by specifying multiple different functional forms of campaign week, including campaign week squared and the log of campaign week. The results do not indicate a non-linear relationship nor offer an improvement of model fit over the basic linear specification of campaign week. Information about the other independent variables can be found in Appendix A. Two control variables are absent from our analysis that existing research suggests are important moments of learning over the course of the campaign: conventions and debates (Holbrook 1996). We do not doubt that the conventions and debates add to the information environment of the political campaign, but so do a multitude of other factors. Additionally, when we would expect to observe the effect of the conventions and the debates is hard to pinpoint. Because we are interested in the influence the overall information environment has on political knowledge we do not include controls for these specific events.⁴

LEARNING OVER THE COURSE OF THE CAMPAIGN

We begin by assessing the average level of political knowledge over the course of the political campaign. If learning occurs over the course of the political campaign we would expect a significant difference between the mean level of political knowledge at the start of the campaign and the mean level of political knowledge at the end of the campaign. Additionally, we would expect that the overall number of incorrect and don't know responses would also decline over the course of the campaign.

In Figure 1 we provide preliminary support for our expectations. As the campaign progresses the average number of correct responses increases and the average number of incorrect response decline. There also appears to be a slight decline in don't know responses. At the start of the campaign respondents answered on average 2.18 questions correctly. By the end of the campaign the number of correct responses increased to 2.65, meaning that an average individual answers correctly just over two and a half political knowledge questions. A difference of means test between the average number of correct responses in week 1 and the average correct in week 32, the end of the campaign, indicate a discernible increase in political knowledge at the .001 level of significance over the course of the campaign. The number of incorrect responses declines from 1.7 at the start of the campaign to 1.5 incorrect responses by the end of the campaign, representing a significant decline at the .01 level of significance. While not as obvious from Figure 1, the number of don't know responses is significantly lower at the end of the campaign (0.85) than at the beginning of the campaign (1.1), a difference that is significant at the .01 level of significance. These patterns suggest individuals are acquiring new political knowledge over the course of the campaign and are able to correct misinformation about the candidates. This results in more correct answers to political knowledge questions as the information environment becomes more saturated.

[Figure 1]

However, myriad factors could lead to the observed increase in political knowledge. To control for some of these factors we estimate the marginal effect of campaign week in a multivariate model capable of statistically accounting for variables traditionally associated with political knowledge. Our dependent variables are the three knowledge indices (correct responses, incorrect responses, and don't know responses) discussed above. We assess the relationship between the information environment and political knowledge using ordinary least squares

regression.⁵ The variance in the sample sizes during different weeks of the campaign is likely to result in larger and smaller error variances over the campaign. To correct for the possibility of heteroskedastic errors we estimate the model clustering on campaign week.

We include a series of control variables that have been known to influence an individual's political knowledge: sex (to be discussed in more detail below), age, income, education, black, Hispanic, strength of party identification, interest in politics, engagement in political discussion, marriage, workforce marginalization, and the presence of children in the household. We also include controls for reported attention to the network and cable news, local news, and newspapers. More detailed information about the measurement of these variables can be found in Appendix A.⁶

The multivariate model reported in Table 1 provides strong support for our expectation that the campaign increases levels of political knowledge. Campaign week has a positive and significant effect on providing correct answers, as well as a negative and significant effect on providing incorrect answers. In the multivariate model there appears to be no relationship between campaign week and providing don't know responses. In the don't know model, the sign on the coefficient for campaign week is positive, which is counter to our expectations. The effect is highly insignificant and substantively extremely small.

The nature of our data constrains our ability to identify the exact process underlying the increase in correct answers. Specifically, there could be two different processes at work here. First, the political campaign could help individuals convert incorrect responses directly to correct responses. Second, individuals could be converting incorrect responses to don't knows and don't know responses to correct responses. Under this scenario, the insignificant effect of campaign week in the don't know model suggests that the rate of conversion into and out of the don't know category is approximately equal.

[Table 1]

The control variables included in the model behave largely as expected. The respondent's sex has a strong negative effect on correct answers, indicating that women tend to remain less knowledgeable about politics than men. Sex has a positive effect on incorrect and don't know responses, meaning that women provide more incorrect and don't know responses than men. Women's lower levels of political knowledge appears to be a function of women providing both more incorrect and don't know responses to survey questions. It is important to note that the independent effect of sex still remains significant even after controlling for a wide variety of factors traditionally associated with an individual's level of political knowledge. We explore the relationship between sex, political knowledge, and the information environment in much greater detail in the next section.

Factors associated with greater resources, motivations, or opportunities are positively associated with providing correct responses. Higher numbers of correct responses are associated with higher values on age, income, education, strength of party identification, interest in politics, engagement in political discussions, attention to cable and network news, reading a newspaper and attendance of religious services. All of these relationships are statistically significant. Factors that reduce resources, motivation or opportunity, such as black or Hispanic identity, marriage, marginalization from the workforce, and the presence of children in the house, lower an individual's level of political knowledge. All of these relationships are also statistically significant, except workforce marginalization and marriage. Additionally, attention to the local news significantly lowers an individual's political knowledge.

As expected, many of the factors associated with providing correct answers have the opposite relationship with providing incorrect or don't know responses. Income, education, strong party

identification, interest, political discussion, attention to network and cable news, attention to newspapers, and attending religious services all serve to decrease the number of incorrect responses or don't know responses. All of these relationships are statistically significant, with the exceptions of strong party identification and attention to newspapers for incorrect responses and attending religious services for don't know responses. Having children significantly increases the number of incorrect responses, but is not significantly related to don't know responses.

There are some differences in the determinants of incorrect and don't know responses. Black respondents are significantly less likely to provide don't know responses, but are significantly more likely to provide incorrect response. Hispanics are significantly more likely to provide incorrect responses, but the coefficient for Hispanics is just shy of statistical significant for don't know responses. Attention to local news actually increases the number of incorrect responses, but has no influence on the number of don't know responses. Marginalization from the workforce increases the number of don't know responses, but decreases the number of incorrect responses.

In sum, the information environment, measured as the campaign week, shapes political knowledge. As the campaign progresses and the information environment becomes more saturated, individuals acquire new information, increasing their level of political knowledge. These findings raise two important questions about the influence of a campaign on individuals who start off with lower levels of knowledge. Can these individuals effectively learn over the course of the campaign? Or are they hindered by their lower levels of political knowledge?

SEX DIFFERENCES OVER THE COURSE OF THE CAMPAIGN

As demonstrated above, individuals exhibit higher levels of knowledge by the end of the 2000 presidential campaign than they do at the beginning of the campaign. However, we do not know if this knowledge acquisition occurs equally for various sub-groups in the population. Here we focus

on the impact of the political campaigns on men's and women's level of political knowledge. The learning that occurs during the campaign should allow women to gain political knowledge despite their lower levels of interest in politics. Thus, we expect that the information environment created during the campaign will decrease sex differences in political knowledge for men and women. Once again, to measure political knowledge we use three indices that range from 0 to 5, indicating the number of correct answers, the number of incorrect answers, and the number of don't know responses.

In Figure 2 we examine the mean gender gaps in correct, incorrect, and don't know responses over the course of the campaign. The gender gaps are calculated by subtracting the average women's score from the average men's score for each week of the campaign. There is a positive gap between men and women for correct answers, meaning men provided more correct answers than women over the entire course of the campaign. By the end of the campaign the gender gap in correct answers appears to shrink slightly. The negative gaps for don't know responses and incorrect responses indicate that women provide more of these responses on average compared to men over the entire course of the campaign. A trend in the incorrect response series over the course of the campaign is harder to identify, as it grows and shrinks throughout the campaign. However there is a clear trend in the don't know response index, with the gender gap shrinking considerably over the course of the campaign.

[Figure 2]

To examine further the relationship between political knowledge, sex, and the information environment we estimate a multivariate model that allows us to control for a variety of factors that are known to influence political knowledge. Three main points should be highlighted regarding model specification. First, we once again use OLS with clusters around campaign week to

account for heteroskedastic errors. Second, to test directly our expectations regarding the gap between men's and women's knowledge scores, we model the effect of sex, campaign week, and the interaction of the two on political knowledge. Third, the relationship between the various control variables and political knowledge could also differ for men and women. The differential impact of our control variables is not well established in the existing literature. Including interactions between each control variable and sex introduces a considerable amount of multicollinearity and greatly complicates the model. However, not including the interactions would mean our estimate of the marginal effect of sex could be inflated. To limit issues with multicollinearity, retain as much parsimony to the model as possible and isolate the effect of sex, we rely on statistical tests to determine which variables to interact with sex.⁷ We conduct Wald tests to determine if the coefficients for men are significantly different from the coefficients for women. When the coefficients for specific independent variables are significantly different above the 0.10 level, we include interaction terms in our model to account for these differential effects. Additionally, we conducted the analysis with interactions for all the control variables and our results are robust to the inclusion of these extra interactions.

In Table 2 we report the results of our multivariate model of the gender gap in political knowledge over the course of the 2000 presidential campaign. Due to the presence of the interaction term between campaign week and sex, we cannot directly interpret the marginal effect for these variables or their significance from the information reported in Table 2.⁸ This is because the coefficients and standard errors reported in the table represent the marginal effect for only the case when both sex and campaign week are equal to zero, in our case men before the campaign even starts. To understand the relationship depicted in the interaction we calculate the marginal effect of sex on political knowledge across all values of the campaign week. We present the

marginal effects of sex on political knowledge for correct, don't know, and incorrect responses over the course of the campaign in Figures 3, 4 and 5, respectively. The marginal effect of sex on political knowledge is significant when the confidence interval does not contain the zero line.

[Table 2]

We first examine the marginal effect of sex on correct answers over the course of the campaign (Figure 3). At the start of the campaign we observe a statistically significant and negative marginal effect of sex on political knowledge. Consistent with our expectations, as the campaign progresses the marginal effect of sex on political knowledge shrinks. In the final weeks of the campaign the upper bound of the confidence interval crosses over the zero-line, indicating that the marginal effect of sex on political knowledge is no longer significantly different from zero. While the increase in correct answers over the course of the campaign might appear to be substantively small, it is enough to eliminate the significant, direct effect of sex on political knowledge in the saturated information environment found at the end of the presidential campaign.

[Figure 3]

In addition to women's lower levels of knowledge, there has been considerable focus in the extant literature on sex differences in don't know response. In Figure 4 we report the marginal effect of sex on don't know responses over the course of the campaign. Significant differences between men and women exist at the start of the campaign. However, by week 15 the lower bound of the confidence interval crosses over the zero line, indicating that the relationship is no longer significant. Once again the campaign has the effect of erasing significant differences between men's and women's expression of don't know responses, a result consistent with our expectations.

In Figure 5 we report the marginal effect of sex on incorrect answers as the campaign progresses. Unlike the correct responses and don't know responses, the marginal effect of sex on incorrect responses is statistically insignificant throughout the campaign.

[Figures 4 and 5]

The reduction in significance of the marginal effects of sex across the campaign for correct and don't know responses could be a function of different combinations of learning occurring for men and women. For example, men and women could both be acquiring new knowledge, but women are acquiring this knowledge at a faster rate than men. It could also be that the campaign could have a limited effect on men's political knowledge. In this scenario the decline in the influence of sex is a result of women acquiring more information. To help further understand the impact of the information environment on men's and women's political knowledge we examine the marginal effects of campaign week for men and women separately.

As stated above the coefficients reported in Table 2 for the interactions between campaign week and sex cannot be directly interpreted. To understand the influence of campaign week on political knowledge conditional on sex, we calculate the marginal effect of campaign week for men and women based on the results of the three models reported in Table 2. These marginal effects are reported in Table 3. The campaign week has a positive effect on the number of correct responses for both men and women; however, this relationship is only statistically significant for women. As the information environment becomes richer during the political campaign, the number of correct responses offered by women increases. Interestingly, the information environment appears to have only a minimal influence on men's level of correct responses.

[Table 3]

When we examine the marginal effects of the campaign week for don't know and incorrect responses, a much more complicated relationship among sex, campaign week, and knowledge emerges. The marginal effect of campaign week on men's don't know responses is significant, but the marginal effect for women's don't know responses is insignificant. The campaign appears actually to *increase* the number of don't know responses offered by men. This is surprising and counter to our expectations. We expected that the information present in the campaign might create an environment that would alter women's confidence in politics and, consequently, their risk taking behavior resulting in a reduction of the gender gap. While we should be careful not to infer too much from this finding, it appears the women's greater use of the don't know response suggest an entrenched psychological orientation away from politics in women that political campaigns do not alter.

The insignificant result for women indicates that the decrease in sex differences in don't know responses over the course of the campaign is primarily the effect of men's behavior, not women's. We speculate that the information environment may produce these results by reducing men's likelihood to guess. When greater amounts of information present, men may recognize what they know or more importantly what they don't know. Thus the environment would increase their aversion towards getting an incorrect answer.

The insignificant sex differences for incorrect responses are a result of the campaign significantly reducing both men's and women's level of incorrect responses. As the information environment becomes more saturated over the course of the campaign, both men and women learn accurate information about the candidates. However, given the different results for men and women for correct and don't know responses, there are likely sex differences related to how the incorrect responses are converted to don't know or correct answers.

Once again the various control variables perform as we would expect. Variables associated with greater resources, opportunity and motivation increasing the number of correct responses to political knowledge questions and decreasing the number of incorrect and don't know responses. Variables associated with lower resources, opportunity, and motivation result in lower levels of political knowledge. We do find some interesting effects on some of the interactive control variables. We limit our discussion of these results to just a few comments here for the sake of brevity. A more complete discussion and tables of the marginal effects can be found in Appendix B. For the majority of cases across most of the interaction terms the marginal effect of sex remains significant, regardless of the values the various control variables take on. The significant marginal effects for sex indicate that sex is still an important predictor of political knowledge. These results highlight the uniqueness and importance of our finding about the role of the campaign in minimizing the direct effect of sex. Furthermore, we see important differences in the influence of the various controls on the political knowledge of men and women. The differential impact of these predictors underscores the complex relationship between sex and political knowledge.

CAN THE INFORMATION ENVIRONMENT ELIMINATE THE GENDER GAP IN POLITICAL KNOWLEDGE?

The results presented in Table 2 and Figures 3-5 indicate that, as the information environment becomes more saturated, women acquire enough political knowledge to eliminate the significant marginal effect of sex on political knowledge over the course of the campaign. Does this mean that the gender gap in knowledge is eliminated by the end of the campaign? Simply put, no. Our analysis suggests that the gender gap in political knowledge is a complex process that is a function of differences in mean levels of factors that foster political knowledge and a differential impact of these factors on men and women.

While substantively small, we find statistically significant differences between men and women when it comes to income, education, interest in politics, engagement in political discussion and attendance at religious services. We also find differences in attention to different media sources. Specifically men are more likely to pay attention to cable and network news and read the newspaper, both behaviors that relate to higher levels of political knowledge. Women, however, are more likely to pay attention to local news broadcasts, a behavior related to lower levels of political knowledge. Some of the gender gap that remains at the end of the political campaign is then a result of men and women having different levels of resources and different motivations.

Eliminating sex differences between men and women in terms of education, income, interest in politics, engagement in political discussions, attendance at religious services, and attention to various media outlets still does not eliminate the gender gap in knowledge. Several of the independent variables have a differential effect for men and women (see Appendix B). We observe that marriage has a positive influence on men's political knowledge, but a negative influence on women's political knowledge. This suggests that eliminating the gender gap in knowledge is much more complicated and would most likely require restructuring the gendered relationship of marriage. Additionally, we find some evidence to suggest that political interest has less of an influence on women's political knowledge than it has on men's political knowledge. Thus even if we eliminate differences between men and women in terms of political interest, women would remain less knowledgeable than men.

Finally, we observe that the gender gap in political knowledge is not simply about correct vs. incorrect responses. We find that political campaigns help women provide more correct answers and helps both men and women provide fewer incorrect answers. However, while campaigns cause men to provide more don't know responses, they do not affect the numbers of don't know

responses among women. As noted, women's greater propensity to provide don't know responses may be a function of something other than an actual lack of knowledge. As long as this disengagement with politics remains the gender gap in political knowledge is likely to persist.

CONCLUSION

The political campaign serves an important role in fostering increased levels of political knowledge for both men and women. We do not wish to weigh in on the normative debate about the appropriate or necessary levels of political knowledge for effective democracy. Rather, we believe that more knowledge is generally a positive thing and that the information environment created by the political campaign creates a context in which democratic choices can be more effectively carried out.

One of the central purposes of a political campaign is to inform the electorate about the various political candidates. Our analysis has demonstrated that political knowledge is dynamic, but it also raises several important questions for future research on how campaigns create an information environment and the relationship of that information environment to political knowledge. We explore the type of knowledge most likely to increase over the campaign: knowledge about the candidates running for the presidency. Do political campaigns help increase other types of knowledge about politics? The media coverage during a campaign often focuses broadly on the operation of government and different political issues, which suggests that we may see similar gains in other forms of political knowledge. However, the impact of the political campaign on other types of political knowledge needs further investigation.

Additional research also needs to unpack the information environment to understand what factors help increase or decrease levels of political knowledge. While there are vast similarities across presidential elections, the intensity of the electoral environment and attention paid to

elections do vary over time and space. As a result, the impact of the information environment over the course of the campaign may also vary across elections or based on differences in the intensity of state presidential campaigns. Additionally, the presence of Hillary Clinton in the 2008 Democratic presidential primary and Sarah Palin in the 2008 general election also represent a unique information environments which may have had a differential effect on sex differences in political knowledge. In fact, Burns, Schlozman, and Verba. (2001) demonstrate that the presence of women elected officials eliminates sex differences in knowledge. Future research is needed to address the ways the information environment changes with the presence of an incumbent, variation in the salient issues of the campaign and women candidates.⁹ Moreover, future research needs to examine how different political systems and variation in the information environment cross-nationally influences the gender gap in knowledge found in countries other than the United States.

By modeling correct, don't know and incorrect responses we have gained a more complete understanding of political knowledge over the course of the campaign than possible by only examining correct answers. Our analysis highlights the finding that the factors influencing correct answers are not the mirror image of the factors that influence incorrect answers. Additionally, don't know responses and incorrect responses, while similar, are not inter-changeable. These findings should direct future research to consider all three responses categories when examining the determinants and impact of political knowledge. Furthermore, our conclusions about the underlying process are limited by the nature of our data. Future research using multiple methods of inquiry is warranted to untangle differences in information processing and its effects on knowledge for men and women.

Scholars have invested a substantial amount of effort in explaining patterns of political knowledge in the American mass public. One of the most interesting findings from the scholarly literature on political knowledge is that men and women differ in what they say they know about politics. We find that sex differences in political knowledge are a product of a complex process, but at least part of the gender gap is attributable to how men and women differ in their responses to the intensity and richness of the information environment.

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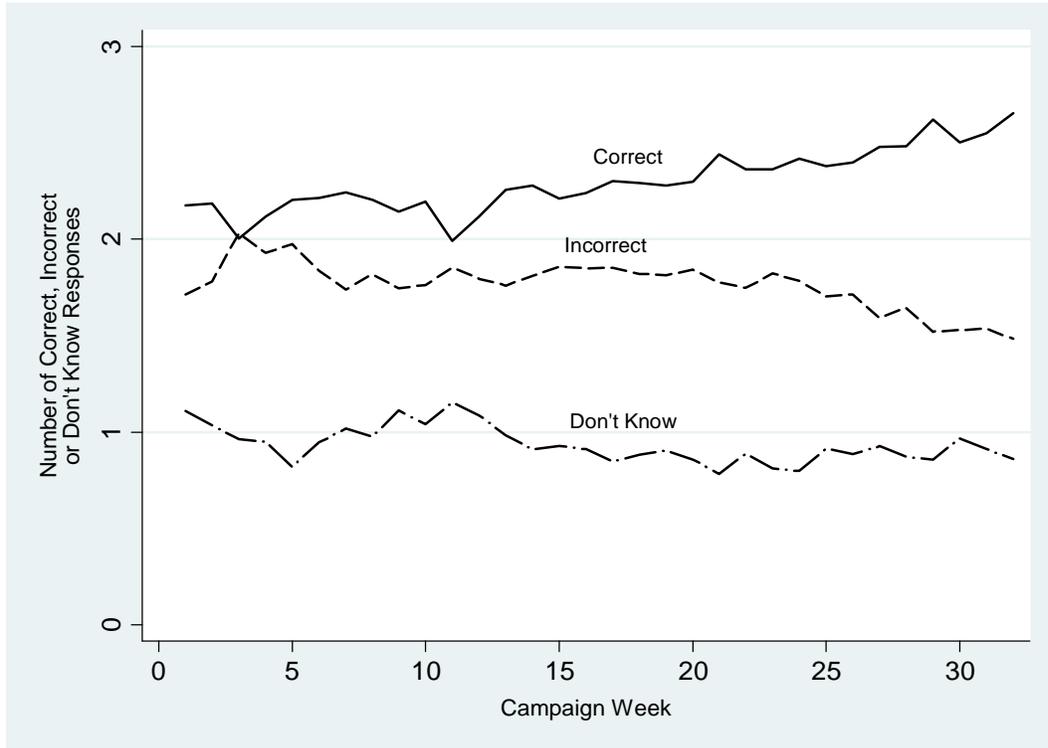
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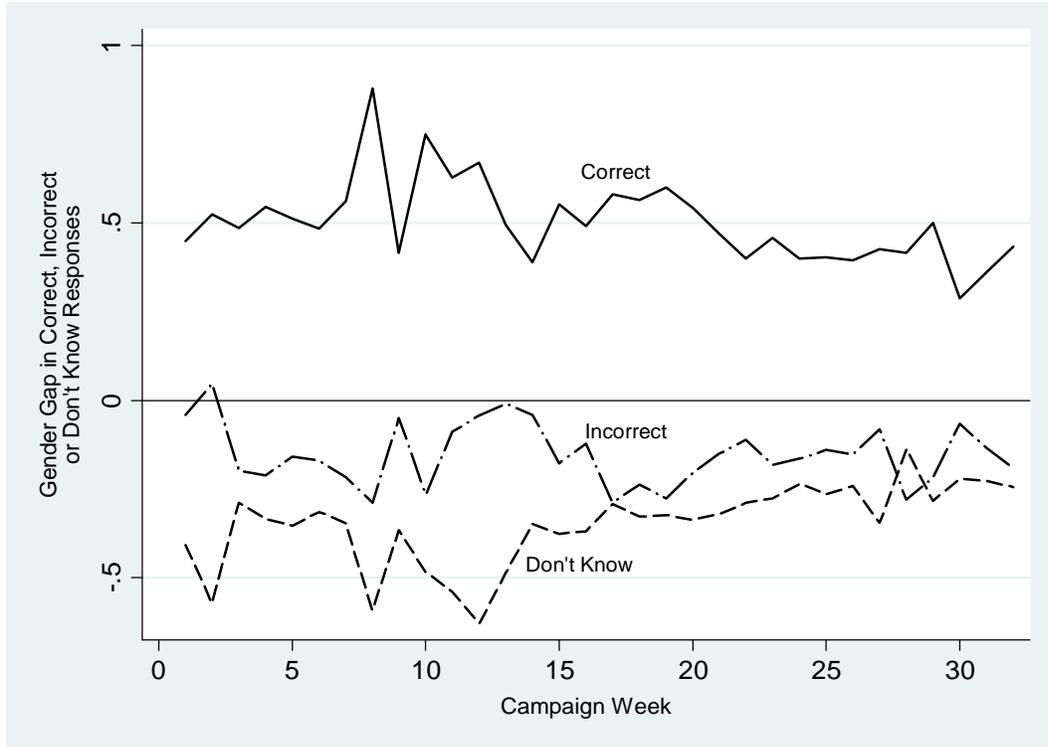
Figure 1. Mean number of correct, “don’t know,” and incorrect responses to knowledge questions over the course of the 2000 presidential campaign, for all respondents.



Note: Each trend represents the number of correct, don't know, and incorrect answers, respectively, by all respondents to five political knowledge questions asked over the course of the 2000 presidential campaign.

Source: calculations by the authors using data from the 2000 National Annenberg Election Survey.

Figure 2. Gender gap in mean number of correct, “don’t know,” and incorrect responses to knowledge questions over the course of the 2000 presidential campaign.



Note: Each trend represents the difference in the number of correct, don't know, and incorrect answers, respectively, for men and women respondents to five political knowledge questions asked over the course of the 2000 presidential campaign.

Source: calculations by the authors using data from the 2000 National Annenberg Election Survey.

Figure 3. The marginal Effect of Sex on Correct Responses as Campaign Week Changes.

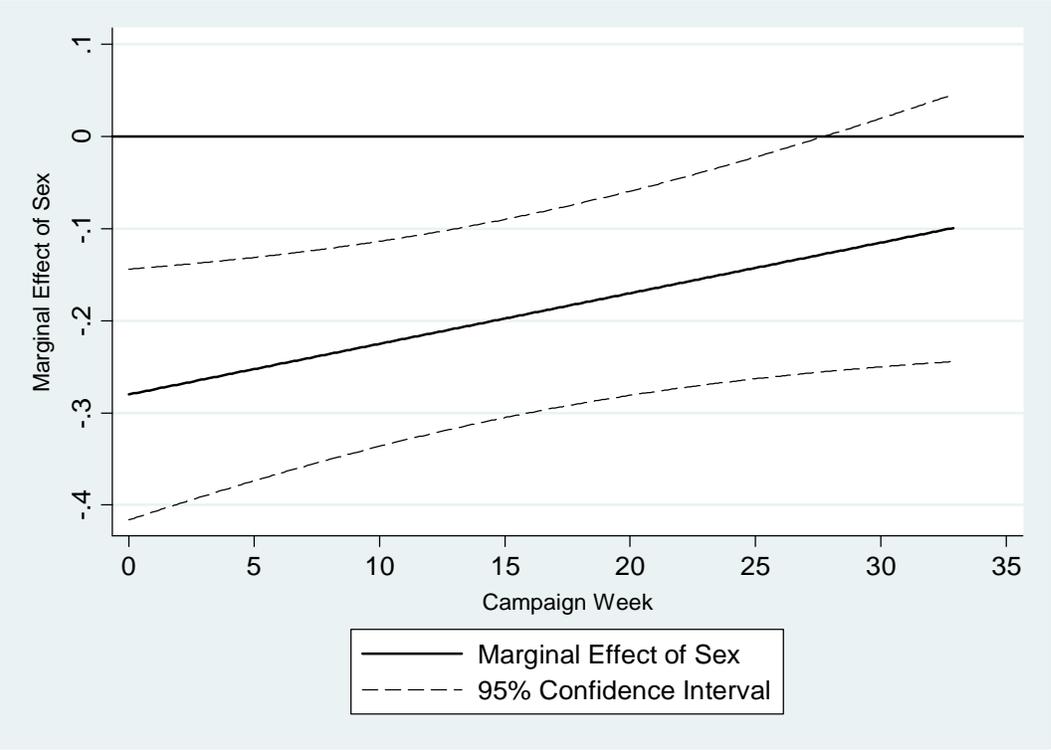


Figure 4. Marginal Effect of Sex on Don't Know Responses as Campaign Week Changes.

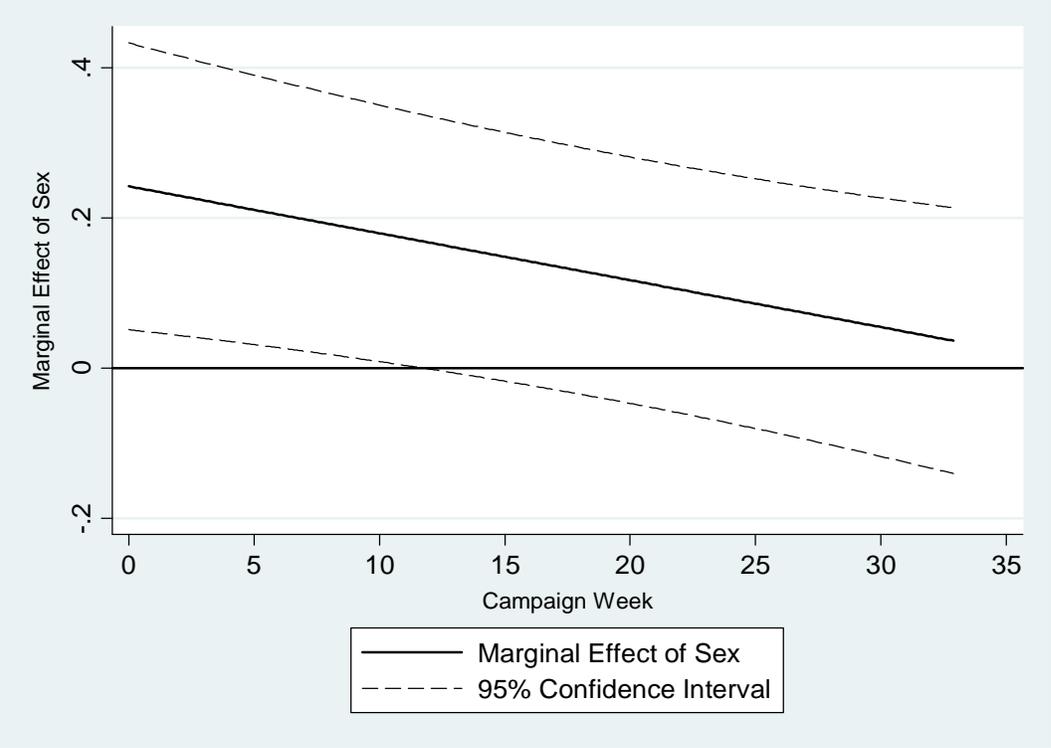


Figure 5. Marginal Effect of Sex on Incorrect Responses As Campaign Week Changes

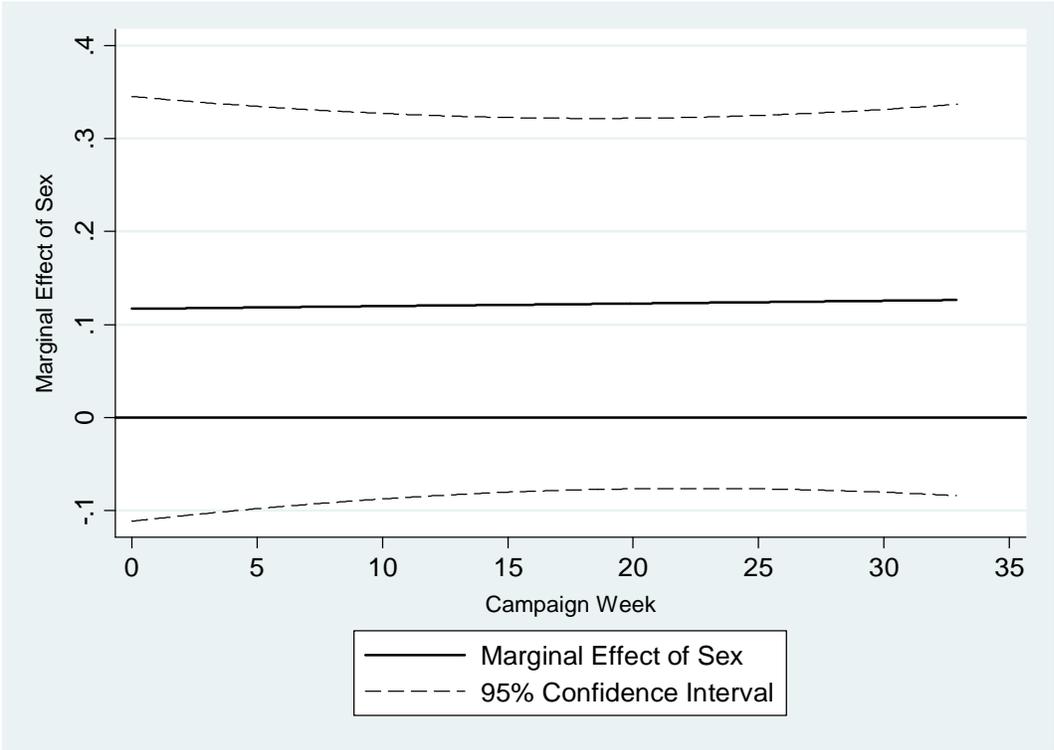


Table 1. Regression Results for Correct, Don't Know and Incorrect Responses

	Correct (Robust S.E.)	Don't Know (Robust S.E.)	Incorrect (Robust S.E.)
Campaign Week	0.01** (0.002)	0.001 (0.001)	-0.01** (0.002)
Sex	-0.30*** (0.03)	.18*** (0.01)	0.12*** (0.02)
Age	.001** (0.001)	.01*** (0.001)	-0.01*** (0.001)
Income	0.07*** (0.004)	-0.02** (.004)	-0.06*** (0.01)
Education	0.10*** (0.01)	-0.02*** (0.01)	-0.08*** (0.005)
Black	-0.27*** (0.03)	-0.07** (0.02)	0.34*** (0.03)
Hispanic	-0.17*** (0.04)	-0.04 (0.02)	0.21*** (0.04)
Strong Party Identification	0.14*** (0.02)	-0.09*** (0.01)	-0.05 (0.02)
Interest	0.28*** (0.01)	-0.16*** (0.01)	-0.11*** (0.01)
Discussion	0.08*** (0.01)	-0.04*** (0.004)	-0.04*** (0.01)
Attention to Cable and Network News	0.13*** (0.01)	-0.08*** (0.02)	-0.05*** (0.01)
Attention to Local News	-0.09*** (0.02)	-.01 (0.01)	0.10*** (0.01)
Attention to Newspapers	0.06*** (0.01)	-0.05*** (0.01)	-0.01 (0.01)
Married	-0.01 (0.02)	-0.01 (0.02)	0.01 (0.03)
Marginalized from Workforce	-0.004 (0.03)	0.09*** (0.02)	-0.09** (0.03)
Attend Religious Services	0.04*** (0.01)	-0.003 (0.01)	-0.04*** (0.01)
Children	-0.09*** (0.02)	0.01 (0.01)	0.07** (0.02)
Constant	0.49*** 0.06	1.09*** (0.05)	3.4*** (0.07)
N	17249	17249	17249
R-Square	.25	.10	.13

*** 0.001; ** 0.01; *0.05

Standard errors produced by clustering on campaign week.

Table 2. Regression Results for Correct, Don't Know and Incorrect Responses With Sex and Campaign Week Interactions

	Correct (Robust S.E.)	Don't Know (Robust S.E.)	Incorrect (Robust S.E.)
Campaign Week	0.003 (0.002)	0.005* (0.002)	-0.01** (0.002)
Sex	-0.28*** (0.07)	0.24* (0.08)	0.12 (0.12)
Sex * Campaign Week	0.005 (0.003)	-0.01** (0.002)	.0002 (0.003)
Age	0.001 (0.001)	0.01*** (0.001)	-0.01*** (0.001)
Age * Sex	-- --	0.003* (0.001)	-0.002 (0.001)
Income	0.08*** (0.005)	-0.01** (0.005)	-0.06*** (0.01)
Education	0.10*** (0.01)	-0.02*** (0.005)	-0.08*** (.0005)
Black	-0.28*** (0.03)	-0.10** (0.04)	0.40*** (0.06)
Black * Sex	-- --	0.07 (0.06)	-0.12 (0.07)
Hispanic	-0.25*** (0.06)	-0.04 (0.02)	0.21*** (0.04)
Hispanic * Sex	0.16* (0.07)	-- --	-- --
Strong Party Identification	0.10*** (0.03)	-0.05** (0.02)	-0.05 (0.03)
Strong Party Identification * Sex	0.07 (0.04)	-0.08** (0.03)	0.003 (0.04)
Interest	0.31*** (0.02)	-0.14*** (0.01)	-0.16*** (0.02)
Interest * Sex	-0.06** (0.02)	-0.04*** (0.02)	0.09*** (0.02)
Discussion	0.08*** (0.01)	-0.04*** (0.004)	-0.04*** (0.01)
Discussion * Sex	0.01 (0.01)	-- --	-- --
Attention to Cable and Network News	0.13*** (0.01)	-0.08*** (0.02)	-0.05*** (0.01)

Table 2 Continued. Regression Results for Correct, Don't Know and Incorrect Responses With Sex and Campaign Week Interactions

	Correct (Robust S.E.)	Don't Know (Robust S.E.)	Incorrect (Robust S.E.)
Attention to Local News	-0.10*** (0.02)	-0.01 (0.01)	0.10*** (0.01)
Attention to Newspapers	0.06*** (0.01)	-0.05*** (0.01)	-0.01 (0.01)
Married	0.06 (0.03)	-0.001 (0.02)	0.01 (0.02)
Married * Sex	-0.13** (0.05)	-- --	-- --
Marginalized from Workforce	0.01 (0.03)	0.21** (0.06)	-0.03 (0.08)
Marginalized from Workforce * Sex	-- --	-0.13 (0.07)	-0.08 (0.09)
Attend Religious Services	0.04*** 0.01	-0.01 (0.01)	-0.03* (0.01)
Attend Religious Services * Sex	-- --	0.02 (0.01)	-0.03 (0.01)
Children	-0.10*** (0.02)	0.01 (0.01)	0.08*** (0.02)
Constant	0.50*** (0.08)	1.04*** (0.06)	3.43*** (0.08)
N	17249	17249	17249
R-Square	0.25	0.10	0.13

*** 0.001; ** 0.01; *0.05
 -- interaction not included in the model based on insignificant results of Wald tests
 Standard errors produced by clustering on campaign week.

Table 3. Marginal Effects of Campaign Week by Sex

	Men	Women
Correct	0.003	0.009*
Don't Know	0.005*	-0.002
Incorrect	-0.007*	-0.007*

* significant at the .05 level

Appendix A. Description of variables

Political knowledge: We measure political knowledge using five items asking if George Bush or Al Gore (1) is the son of a former senator (Gore); (2) is a born-again Christian (Bush); (3) favors biggest tax cut (Bush); (4) favors biggest increase for social security (Gore); and (5) supported a concealed handgun law (Bush). We created three different indexes from these items reflecting the number of correct answers, the number of incorrect answers, and the number of don't know response.

Sex: 1 = women; 0 = men.

Campaign week: Week in the presidential campaign. The ANES begins surveying the public about the 2000 presidential election on December 14, 1999 (week 1) and stops January 19, 2001 (week 58). Starting in week 17 (4/3/2000 – 4/9/2000) our all the questions used in the construction of the dependent variable becomes available. We restrict our analysis to stop in week 48 (11/6/2000-11/12/2000), the week in which the election occurs.

Age: Respondent age, in years.

Income: Scale of household income, ranging from 1 (less than \$10,000) to 9 (\$150,000 or more).

Education: Scale of educational attainment, ranging from 1 (grade 8 or lower) to 9 (graduate or professional degree).

Black: 1 = black respondent; 0 = otherwise.

Hispanic: 1 = Hispanic respondent; 0 = otherwise.

Strong partisan identification: 1 = strong partisan, 0= otherwise.

Political interest: Scale of political interest, ranging from 0 (hardly ever) to 3 (most of the time).

Discuss politics: Number of days in past week respondent discussed politics with family or friends.

Attention to cable news: Scale of attention to cable news, ranging from 0 (none) to 3 (a great deal).

Attention to local news: Scale of attention to local news, ranging from 0 (none) to 3 (a great deal).

Attention to newspaper: Scale of attention to newspaper news, ranging from 0 (none) to 3 (a great deal).

Married: 1 = respondent is married; 0 = otherwise.

Workforce marginalized: 1 = respondent is permanently disabled, a homemaker, an unemployed student, or other employment status; 0 = otherwise.

Church attendance: Scale of frequency of church attendance, coded 1 (never) to 5 (more than once per week)

Children: 1 = respondent has children; 0 = otherwise.

Appendix B

As previously explained the influence and significance of the interaction terms cannot be directly assessed from the coefficients reported in Table 2. To aid in interpretation we calculated the marginal effects of sex and the control variables on political knowledge. These marginal effects are reported in a series of tables: Table B1 for the correct response model, Table B2 for the don't know response model, and Table B3 for the incorrect response model. The top of the table reports the marginal effect of sex on political knowledge as the various control variables change. The bottom on the table reports the marginal effects of the various control variables for men and women separately.

We first interpret the interactions included in the model of correct responses. We find that sex remains an important predictor of political knowledge. The marginal effects of sex on political knowledge for all the different control variables are significant, except for Hispanics. This highlights the uniqueness and importance of our finding about the role of the campaign in minimizing the direct effect of sex. Turning our attention to the bottom half of Table B1, which reports the marginal effects of the various control variables on correct responses for men and women, we see important differences in the influence of the various controls on the political knowledge of men and women. Identifying as Hispanic has less of a negative influence for women than it does for men. Having a strong party identification has a larger positive influence on women's political knowledge than men's political knowledge. Interest in politics has a smaller

positive influence on women's level of correct responses compared to men. Finally, marriage has the opposite effect on correct responses for men and women: marriage increases men's level of correct responses and decreases women's correct responses.

Similar to correct responses, the marginal effects of sex is significant for most of the control variables when we examine the influence of the various interactions with control variables in the model of don't know responses (B2) and incorrect responses (B3). The marginal effect of sex on political knowledge is significant, except at higher levels of interest in politics and among individuals who are marginalized from the workforce or not working. Additionally, some of the interactions for the various control variables have a differential influence on men's and women's don't know and incorrect responses. Age has a slightly larger influence on increasing the number of don't know responses for women compared to men. Being a black man has a negative influence on the levels of don't know and incorrect responses, while being a black woman does not have a significant influence on either don't know or incorrect responses. Strong party identification and interest in politics has a larger negative influence on both don't know and incorrect responses for women than it does for men. Marginalization from the workforce increases the number of don't know and incorrect responses for men, but has no influence on women's don't know or incorrect responses.

Table B1. Marginal Effect for Control Variable Interactions in Correct Model

Marginal Effects of Sex Given:			
Non-Hispanic	Hispanic		
-0.28*	-0.12		
(0.07)	(0.09)		
Not Strong Party Identifier	Strong Party Identifier		
-0.28*	-0.21*		
(0.07)	(0.08)		
Interest (0)	Interest (1)	Interest (2)	Interest (3)
-0.28*	-0.34*	-0.39*	-0.45*
(0.07)	(0.06)	(0.06)	(0.06)
Discussion (0)	Discussion (1)	Discussion (2)	Discussion (3)
-0.28*	-0.27*	-0.26*	-0.25*
(0.07)	(0.07)	(0.07)	(0.08)
Not married	Married		
-0.28*	-0.41*		
(0.07)	(0.05)		
Marginal Effect of Control Variable for Men and Women			
	Men	Women	
Hispanic	-0.25*	-0.10*	
	(0.06)	(0.04)	
Strong Party Identification	0.10*	0.17*	
	(0.03)	(0.02)	
Interest in Politics	0.31*	.25*	
	(0.02)	(0.02)	
Discussion of Politics	0.08*	0.09*	
	(0.01)	(0.01)	
Marriage	0.06*	-0.06*	
	(0.03)	(0.03)	
* Significant at the .05 level			
Standard errors in parentheses			

Table B2. Marginal Effect for Control Variable Interactions in Don't Know Model

Marginal Effects of Sex Given:				
Age (20)	Age (40)	Age (60)	Age (80)	
0.30*	0.35*	0.40*	0.46*	
(0.09)	(0.08)	(0.08)	(.08)	
Not Black	Black			
0.24*	0.31*			
(0.10)	(0.09)			
Not Strong Party Identifier	Strong Party Identifier			
0.24*	0.17			
(.10)	(0.10)			
Interest (0)	Interest (1)	Interest (2)	Interest (3)	
0.24*	0.20*	0.16	0.12	
(0.10)	(0.09)	(.09)	(0.09)	
Working	Not Working			
0.24*	0.11			
(0.10)	(0.12)			
Religious (1)	Religions (2)	Religious (3)	Religious (4)	Religious (5)
0.26*	0.28*	0.30*	0.31*	0.33*
(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Marginal Effect of Control Variable for Men and Women				
	Men	Women		
Age	0.007*	0.01*		
	(0.001)	(0.001)		
Black	-0.10*	-0.03		
	(0.04)	(0.03)		
Strong Party Identifier	-0.05*	-.13*		
	(0.02)	(0.02)		
Interest	-0.14*	-.18*		
	(0.01)	(0.01)		
Marginalized Workforce	0.21*	0.07		
	(0.06)	(0.03)		
Attend Religious Services	-0.01	0.006		
	(0.01)	(0.01)		

* Significant at the .05 level
Standard errors in parentheses

Table B3. Marginal Effect for Control Variable Interactions in Incorrect Model

Marginal Effects of Sex Given:				
Age (20)	Age (40)	Age (60)	Age (80)	
0.29*	0.35*	0.40*	0.46*	
(0.09)	(0.08)	(0.08)	(0.08)	
Not Black	Black			
0.24*	0.31*			
(0.10)	(0.09)			
Not Strong Party Identifier	Strong Party Identifier			
0.24*	0.17*			
(0.10)	(0.10)			
Interest (0)	Interest (1)	Interest (2)	Interest (3)	
0.24*	0.20*	0.16	0.1219265	
(0.10)	(0.09)	(0.09)	(0.09)	
Working	Not Working			
0.24*	0.11			
(.10)	(0.12)			
Religious (1)	Religions (2)	Religious (3)	Religious (4)	Religious (5)
0.26*	0.28*	0.30*	0.31*	0.33*
(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Marginal Effect of Control Variable for Men and Women				
	Men	Women		
Age	0.01*	0.01*		
	(0.001)	(0.001)		
Black	-0.10*	-0.03		
	(0.04)	(0.03)		
Strong Party Identifier	-0.05*	-0.13*		
	(0.02)	(0.02)		
Interest	-0.14*	-0.18*		
	(0.01)	(0.01)		
Marginalized Workforce	0.21*	0.07*		
	(0.06)	(0.03)		
Attend Religious Services	-0.01	0.01		
	(0.01)	(0.01)		
* Significant at the .05 level				
Standard errors in parentheses				

¹ Data from the rolling-cross section of the NAES consists of individuals observed over the course of the entire campaign. While this data set can be broken down by time units within the campaign, the campaign week in our case, it is not equivalent to panel data as the same individuals are not surveyed throughout the campaign. Therefore, panel modeling techniques are methodologically inappropriate for the structure of our data. The NAES does contain a panel component; however, these panels lack key questions used in our analysis.

² Discussion about the measurement of political knowledge has also examined how question wording and response categories can influence the level of political knowledge and the gender gap in political knowledge (Mondak and Anderson 2004; Delli Carpini and Ketter 1993, 1996, 2000). While we expect that our levels of knowledge may be higher because the questions used a closed ended format than if the questions used an open ended format. Additionally, because of the closed ended question format we may observe a slightly larger gender gap. However, all of this has little substantive impact on our findings across the campaign because the format of the question is held constant.

³ Ideally we would like to include a wide variety of knowledge questions that tap the multiple dimensions of political knowledge. And while, the NAES survey includes a large number of political knowledge questions, very few are included in all of the surveys conducted over the course of the 2000 presidential campaign. Hence we are limited to the small number of questions asked with uniform question wording and in multiple surveys over the course of the campaign.

⁴ We conduct auxiliary analyses that included dummy variables for the weeks of the Democratic Party's convention, the Republican Party's Convention, and the debates. Generally the substantive findings remain consistent; however, the magnitude of the campaign week measure is reduced because the dummies are picking up any effect of political knowledge associated with

those specific events. The dummy variables tell us the average effect on political knowledge compared to all other weeks in the model. The dummies for the conventions suggest lower levels of knowledge, but this is likely a function of the conventions occurring towards the beginning of the campaigns. The dummies for debates indicate that these weeks contained higher than average levels of political knowledge.

⁵ Our dependent variables is ordinal in nature, which would suggest that we should use a method of estimation particularly suited to this type of data, such as ordered logit. Models using ordered probit found substantively similar results. Given that the cut points in the ordered model were approximately equally spaced, the differences between the cut points were insignificant, and that the dependent variable contains 6 categories, we do not consider OLS to be an inappropriate estimation technique for our case.

⁶ Our knowledge index consists of three questions about the Republican candidate and two questions about the Democratic candidate. Given that partisans will be more interested and familiar with the candidate that shares their party identification, partisanship may be related to political knowledge. We estimate models that include dummy variables indicating if the individual is a Democrat or a Republican. While the partisanship does influence the level of political knowledge, it is unrelated to the acquisition of knowledge over the course of the campaign and thus excluded from the models presented here.

⁷ Dow (1999) finds that only education has a differential effect for men's and women's level of political knowledge. Our Wald tests indicate that between men's and women's coefficient on education to be highly insignificant.

⁸ See Brambor, Clark, and Golder (2005) for an excellent discussion about the proper model specification using interaction terms and how to correctly interpret the effects of variables included

in the interaction terms. Brambor, Clark, and Golder (2005) warn that the coefficients reported in the traditional regression tables provide the correct marginal effect only when the respective constituent terms (sex and campaign week in our case) are equal to zero. Additionally, they explain the standard errors reported for these three variables in Table 3 are not accurate regarding the significance of the relationship between each constituent variable and the dependent variable.

⁹ Unfortunately, our hands are tied due to data availability. Similar political knowledge questions were not asked consistently enough in the 2004 National Annenberg Election Studies to conduct comparable analysis.