Political Advertising and Persuasion Effects

in the 2004 and 2008 Presidential Elections

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ABSTRACT

The 2008 presidential election was historic in many respects. Not only did the race feature an African-American major party candidate and an open White House, but one candidate took public funding and the other candidate did not. This latter disparity was expressed in an imbalance of resources across the two campaigns, especially in the purchase of political advertising. This paper examines the advertising patterns in 2008 by comparing them to the presidential ad buys in 2004. It also examines the relative impact of advertising in county-level vote returns in both years. The results demonstrate some important difference in advertising patterns across years, especially in terms of ad sponsorship and market-level advertising advantages. We also find significant and strong advertising persuasion effects in 2008.

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Presidential general election campaigns in the United States are surely the most studied election campaigns in the world, and yet they are among the most difficult in which to isolate the effects of the mass media in general and political advertising in particular. There are several reasons for this. First, going into a general election campaign, most Americans already know a lot about the candidates. Typically, a presidential nominee is a prominent politician, perhaps a sitting president or vice-president. Additionally, the candidates who achieve their parties' nominations have been the subject of intense media scrutiny during the presidential primary campaign. Thus, there is not much opportunity for advertisements (or other forms of campaigning) to shape people's opinions of the candidates. Second, presidential campaigns typically experience balanced message flows with media reports about the candidates fairly even in amount and tone (Holbrook 1996, p.85; Jamieson et al, p.89) and television advertising campaigns equal in volume (Althaus, Nardulli and Shaw 2001, p.16, see also their Figure 1). Part of this stems from the public financing of general election campaigns, which until recently, all candidates accepted. Third, it is difficult for advertising to stand out in the sea of news media stories about the campaign.

The 2008 presidential general election, however, might present a perfect context in which to find an impact of political advertising. Although Americans learned a lot about Barack Obama during the primary campaign, he was relatively new to the national stage, having made his national debut a mere 4 years earlier during a speech he gave at the 2004 Democratic National Convention. McCain was certainly better known than Obama, thanks in part to his near-successful run for the Republican presidential nomination in 2000, but he was also less known than a sitting president or vice-president, one of which had been on every presidential ballot since 1952. Thus, two relative unknowns faced each other in 2008. Moreover, the 2008 race was unique in that Obama had a strong financial advantage over McCain, the

type of disparity that had not been seen in recent election cycles. As a consequence, 2008 presents a unique opportunity to examine advertising effects in a presidential general election campaign.

We have two goals in this paper. First, we tell the story of political advertising in the 2008 presidential general election. To that effect, there are noticeable and important differences in the air war between 2008 and 2004, such as in sponsorship, reach, and temporal intensity. Second, we look for advertising effects in both election cycles by examining the relationship between market-level ad buys and county-level vote returns. The results demonstrate strong effects of advertising in 2008, implying that Obama's financial advantage translated into large advertising advantages and a greater share of the vote. This finding in particular has implications for the viability of public funding in future elections, and demonstrates that the air war is still a crucial component of contemporary American elections.

Advertising Persuasion

Researchers have taken several approaches to study the impact of televised political advertising on vote choice. One such approach is experimental. Several experimental studies that have analyzed the impact of advertising on people's candidate preference have concluded that advertising does matter (for example, Kahn and Geer 1994; Pinkleton 1997, 1998; Chang 2001; Meirick 2002; Valentino, Hutchings and Williams 2004; Clinton and Owen 2006). This research has searched for persuasion effects in multiple electoral environments and has considered varied effects introduced by the type of ad (positive or negative) and the type of voter (party affiliation, and extent of political knowledge). Experimental research has high internal validity, but one major disadvantage is the inability to speak to the effects of advertising in the real world. What does it mean for the number of votes that a candidate gets on Election Day if an experiment shows that exposure to an ad in the laboratory increases the likelihood of voting for that candidate by a specific amount?

Other scholars have relied on surveys in order to investigate the impact of political advertising on people's vote choices, an approach that can enhance external validity. For instance, Goldstein and Freedman (2000) examined the impact of advertising in several U.S. Senate races using the 1996 cross-

sectional ANES. Combining an extensive database of ads aired in the country's 75 largest media markets and survey-based measures of respondents' television viewing habits, the authors created a relative measure of ad exposure. Their analysis revealed that as exposure to a Senate challenger's advertising increased, the likelihood of voting for that candidate increased as well. The same was true for incumbent advertising. Franz and Ridout (2007) adopted a very similar approach, but with panel data instead of a cross-sectional sample, in their study of how advertising influenced vote choice in several U.S. Senate races in 2004 and in that year's presidential election.

Johnston, Hagen and Jamieson (2004) also conducted an individual-level analysis of advertising's impact on vote choice, using ad tracking data at the market level to measure the information environment. Their setting was the 2000 presidential contest, and their key measure of advertising was the difference in the number of ads aired between Al Gore and George W. Bush in the previous week. Using the National Annenberg Election Survey, which was a rolling cross-section in the general election phase, they found that overall ad volumes had an impact on the probability of voting for Bush but did not have an impact on the probability of voting for Gore. That said, the net effect of advertising varied over time, ranging from pro-Gore by 2 percentage points to pro-Bush by 4 percentage points.

Huber and Arceneaux (2007), studying the same election campaign, as well as the same data, reached a slightly different conclusion, suggesting that the impact of advertising on persuasion is higher than that estimated by previous researchers. They take advantage of the "natural experiment" provided by the fact that, while most ads air in battleground states, some ads spill over and are seen in non-battleground states.

Survey-based studies give a better idea of the impact of advertising in the real world of political campaigns, but it still is difficult to translate the kind of conclusions made by these studies—that, for example, increasing an individual's exposure by one ad increases the likelihood of voting for a certain candidate by a certain amount—into firm conclusions about how a candidate's percentage of the vote will rise or fall given an increase or decrease in how many ads his campaigns airs.

To better answer such questions about the magnitude of the persuasive effects of advertising, other researchers have examined ad effects at the aggregate level through the use of actual vote tallies or poll standings. For instance, Shaw (1999) investigated the impact of advertising in the 1988, 1992 and 1996 presidential campaigns, matching the number of ads aired in a state with the percentage of the vote the candidates earned in that state. In general, his statistical models supported the conclusion that advertising had its intended impact, increasing the vote share of the candidate who had an ad advantage. He found, however, that the impact of advertising varied depending on the presidential election campaign, with ads mattering the most in 1996, the least in 1992, with 1988 in between.[1]

Shaw's approach to the study of ad affects has one important advantage: it allows for the calculation of how many votes the airing of an ad gets a candidate. In the cross-sectional models (of state-level vote returns), an increase of 500 gross rating points (GRPs) of advertising in a state boosted a candidate's share of the vote by 2.2 percentage points. This is the equivalent of airing 100 ads during programs with an average rating of 5 (a moderately popular program but not a hit). His pooled-time series models (of available poll data) predicted similar impacts of advertising: a 500 rating points increase in a state for a candidate would result in a 1.6 percent increase in candidate support.[2] A follow-up study (Shaw 2006) did discover a significant impact of advertising in the 2000 and 2004 presidential races, but the size of the impact was small in these races. In both 2000 and 2004, a 1000 GRP advantage for Bush in 2000 was estimated to produce a 0.1-percent increase in the Republican share of the vote for a given poll during the fall campaign.

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[1] As Shaw notes (1999, p.348), the focus on aggregate data introduces an ecological fallacy problem only if the researcher is looking to make inferences about individual voters. Sometimes scholars are interested in individual-level effects, but campaigns in particular are interested in the aggregated result.

[2] Althaus, Nardulli and Shaw (2001) examine county-level vote returns, the same unit of analysis that we use in this paper. They focus on the 1992, 1996 and 2000 presidential campaigns and find a significant impact of market-level advertising buys on a candidate's share of the vote only in 1996.

All told, there is a wealth of research available on the persuasive effects of advertising in presidential elections, and the general conclusion is that ads can move votes. All of the existing scholarship has certain advantages (i.e. experiments can identify strong causal effects of exposure while surveys can look for real-world impacts in individual-level candidate evaluations) and drawbacks (the standard trade-offs between external and internal validity). Our research design focuses on the county-level effects of ads in 2008, looking not for temporal effects of ads, but the final impact on county-level returns. We recognize that the approach can say little about individual voters, or about over time effects, but the ultimate concern of campaigns and their media consultants is the final aggregated result once the ballots are cast and all of the ads are aired. To that effect, we can offer an answer to the simple but important question: how much did the air war contribute to the final result?

Our Expectations

Whether they use the name or not, many scholars who examine how advertising influences vote choice adopt a dosage-resistance model of persuasion (Krosnick and Brannon 1993). The key first step in this model is exposure to messages or arguments, while the second step is acceptance of or resistance to those messages. The more messages to which a viewer is exposed, the more likely the voter is to be influenced by them, but certain voters have more capacity to reject the messages to which they are exposed, depending on their partisan identifications and levels of political sophistication and knowledge. Those who are strong partisans are more likely to reject messages inconsistent with their prior beliefs, but the ability to recognize a message as inconsistent with one's beliefs also depends on one's level of political knowledge or sophistication. Thus, those with more political knowledge are more likely to reject a political message, and thus are less likely to be influenced by it.

The exposure stage of the dosage-resistance model suggests our first hypothesis, which is that **the greater the candidate's ad advantage in a county, the higher percentage of the vote that candidate should get in the county**. The presumption in most presidential campaigns is that advertising buys are commonly balanced between candidates in the general election phase. This is because historically

candidates have accepted public funding for the general election, and campaigns are fairly efficient about identifying and deploying resources in crucial states (Shaw 2006, Bartels 1985, Brams and Davis 1974, Colantoni et al, 1975). Much has changed in recent cycles, however, including campaign financing practices that have resulted in significant investments from party committees and interest group allies (La Raja 2007, Franz 2008). In other words, as pro-candidate forces are deployed to reinforce and defend candidates limited by the public funding grant, the amount of money invested in the general election phase has sky-rocketed. The presumption of balanced resources was challenged even further in 2008 when Barack Obama opted out of public funding, but John McCain did not.

The dosage-resistance model suggests that individuals who have more political knowledge in general should be less susceptible to the influence of political advertising, but we believe this idea can be extended to varied election contexts as well. Specifically, in years when knowledge of the presidential candidates is high, political advertising is likely to have less impact than in years when knowledge of the presidential candidates is low. Thus, our second hypothesis is that **advertising in 2008 should have a greater impact on the candidate's share of the vote than advertising in 2004** given the difficulty of changing people's impressions of George W. Bush.

To be sure, President Bush's job approval was beginning to decline in 2004, and impressions of him certainly changed over the course of his presidency, but the relevant factor here is whether political advertising on television can have an effect, or whether (changing) impressions were rooted in larger contextual factors, such as the war in Iraq and the state of the national economy. Regardless, the wide open seat in 2008 is the more important baseline comparison, and voters were comparatively uninformed about Obama and McCain in 2008 than about Bush in 2004.[3]

[3] Such a hypothesis is reinforced in recent discussions about forecasting models in presidential elections (Holbrook 2008). Implicitly, the absence of a sitting president complicates the predictive power of certain fundamental factors, such as the state of the national economy. The extra variance introduced with such a circumstance (and scholars count races where a sitting vice-president is on the ballot as an

This logic with regard to how information influences the effectiveness of political advertising can extend geographically as well. In areas in which the information environment is dominated by political advertising—perhaps those counties that receive spillover advertising but are in non-battleground states—advertising should have a greater impact on vote share than in those areas in which advertising competes with other messages, such as candidate mail, door-knocking, and local news coverage of candidate visits. In this latter situation, voters have other sources of information that help them to resist the messages provided by advertising.

Consider, for example, the Philadelphia media market, which covers counties in three states: Pennsylvania (8 counties), New Jersey (8 counties), and Delaware (2 counties). Pennsylvania is a perennial battleground state, but New Jersey and Delaware are typically solid blue states. Voters in the spillover counties in New Jersey and Delaware should not receive much direct mail, canvassing, or phone calls, but should see a healthy dose of presidential advertising on television. Thus, our final hypothesis is that **advertising should have less of an impact in battleground counties than in non-battleground counties** given the wealth of other news media stories about the campaign in battleground states.[4]

Lessons Learned in 2008

Our first goal is to compare the ad war in 2004 and 2008, looking for similarities and differences. We utilize data from the Wisconsin Advertising Project, which has coded and collected frequency data on

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"open" seat) is largely the result of intense campaign efforts from both campaigns that try to convince voters that their candidate is better prepared to be president.

[4] See Huber and Arceneaux (2007) and Krasno and Green (2008) for other analyses that take advantage of market spillovers.

political advertisements in the top markets since 1998.[5] The comparison between 2004 and 2008 is ideal because the Project tracked ads in all 210 markets in both years for the presidential campaign. (In 2000 it only tracked the top 75 markets.)

Table 1 shows the breakdown of total pro-Democratic and pro-Republican ads buys at various points in each campaign. For 2004, we show the totals from March 3 to Election Day because this was the unofficial beginning to the general election campaign, one day after Kerry secured enough delegates for the nomination on Super Tuesday. In 2008, the general election effectively began in mid-June after Senator Hillary Clinton finally conceded to Barack Obama. In almost every comparable time frame, Obama and McCain aired more ads than Kerry and Bush. For example, between September 1 and Election Day, pro-Kerry forces broadcast 260,092 ads; but Barack Obama benefited from 318,045. Similarly, Bush and his allies aired 200,994 ads between September and Election Day, but McCain had 224,154 spots. The table also lists the number of markets with at least some coverage, and here the data show that the presidential race in 2008 covered more markets than the air war in 2004: 189 markets received ads in 2008 after August 31, compared to 146 markets in 2004. In short, the air war intensified in 2008, both in frequency and geographic scope.

[Table 1 here]

This occurred specifically in the context of imbalanced resources between Obama and McCain. The Obama campaign had significantly more sums than the McCain camp. For example, Obama raised about $150 million in September 2008 (from FEC.gov), while McCain was limited to the public funding grant of $84 million for the entire fall campaign. This afforded Obama the opportunity to air substantially more ads than McCain, as Table 1 shows.

[5] Information on the project is available at wiscadproject.wisc.edu. Data from 2000, 2002, and 2004 are available for a small processing fee. We are grateful to the project for providing us access to the presidential data in 2008. These data will become available more widely within the coming year.

On the other hand, Table 1 also demonstrate that John Kerry (and his party and interest group allies) had consistent advantages over the Bush camp in spots aired, particularly for ads over the course of the entire general election. Between September 1 and Election Day, the ratio of Kerry ads to Bush ads was 1.29. In 2008, the ratio between Obama and McCain was 1.41. To that extent, the air war intensified and the advantage of the Democrat over the Republican increased, but the latter built on an already existing Democratic advantage in ads in 2004.

Figures 1 and 2 compare the Democratic and Republican ad buys across all markets and over time. For example, in Figure 1, Kerry ad buys pull the fitted regression line away from the expectation of ad parity, and the slope indicates that for every 100 Kerry ads, Bush airs 70. The Kerry advantage was fairly uniform, however, and the Bush camp aired ads (albeit fewer) in almost all of the places that Kerry was on TV. Indeed, Kerry ad buys explain 90 percent of the variance in Bush ad buys. In 2008, however, the pattern is more dispersed. The R-squared in 2008 falls to 0.78, for example, and there are lots of places where Obama secures huge ad advantages. In some markets, for example, Obama aired over 3,000 ads, while McCain sponsored fewer than 1,000. On the other hand, McCain in 2008 actually had more markets with an ad advantage over Obama than Bush did against Kerry in 2004. So in this respect, the air war was more spread out in 2008.

[Figure 1 here]

The overtime pattern is also important, as demonstrated in Figure 2. In almost every week of the campaign in 2004 Kerry had an ad advantage. This was particularly noticeable in April, May, and June, and in the closing weeks of the campaign. By comparison, in the key months of the early September campaign, there was near parity between the Kerry and Bush forces in ads aired. Overall, Bush and Kerry track quite closely for much of the campaign. In 2008, the story of ad advantages comes only after August when McCain is limited to general election funds and when he briefly suspends his campaign in late September (the 24th). Obama holds significant advantages in every week of the fall campaign, gaining significant separation in the early weeks of October. Only in the final week of the campaign, when McCain made a final all-in push, did the two candidates air similar levels of advertising.

[Figure 2 here]

To this point, we have only considered the total frequency of ads aired by both campaigns and their allies. But one of the most important differences in 2004 and 2008, one that makes Obama's advertising advantage all the more stark, is ad sponsorship. Table 2 breaks down the sponsorship of all general election ads in both years. Consider 2004 first. John Kerry sponsored only 42 percent of all pro-Kerry spots, and coordinated with the Democrats on an additional 7 percent. This means that John Kerry controlled the message of fewer than half of all ads aired on his behalf. The Democratic Party sponsored 25 percent of all ads as independent expenditures and pro-Kerry groups sponsored 26 percent. This was certainly the consequence of Kerry's decision to take federal funding, which limited his spending after the Democratic convention.

George Bush also took public funding and was in similarly limited position during the fall campaign. His campaign sponsored only 52 percent of all ads aired. On the other hand, he was not as dependent on party and group independent spending. Groups did air 1 in every 10 pro-Bush ads, but the party was almost 9 times more likely to coordinate with Bush on ads than spend independently of him. This coordination includes the development of so-called "hybrid ads," which the Republican Party believed was not constrained to existing limits placed on traditional coordinated messages (Corrado 2006). The hybrid spot typically contains a pro-candidate message as well as a more generic reference to congressional races (i.e., "George Bush has better ideas than John Kerry and Kerry's liberal allies in Congress."). As such, Bush and the Republicans were effectively able to coordinate without limit, which allowed for a stronger central control of the GOP message.

By 2008, the circumstances are completely different for the Democrats. By opting out of public funding, Barack Obama was unconstrained in fund-raising and spending. As a consequence his campaign sponsored 94 percent of the over 438,000 ads aired in the general election. This allowed the Democratic Party to skip the air war almost entirely (and instead focus on targeting the ground game), and it largely precluded the need for independent spending by interest groups. (PACs and 527s accounted for only 4 percent of all pro-Obama TV spots.) John McCain, on the other hand, accepted public money, and his

campaign only sponsored 43 percent of all his ads. The Republican Party, bolstered by McCain's transfer of his remaining primary campaign budget and through an aggressive joint fund-raising strategy in the summer months, accounted for 52 percent (20 percent aired independently and 32 percent as coordinated or hybrid spots).

On Republican Party spending, the uptick in independent ads (over 2004) is notable. Coordinated spots allow for some messaging discussion with the McCain camp, and the hybrid spots are not limited. So why does the GOP air any independent expenditures? There is some evidence that the Party in 2008 viewed the effect of hybrid spots to be weaker than the pure candidate message. That is, the generic hybrid reference to "liberals in Congress" was perceived by GOP strategists as diluting the impact (Factcheck.org 2008).

[Table 2 here]

All told, the comparison of 2004 and 2008 suggest a number of key conclusions. The major lesson concerns the intensity of the air war in 2008. There were more ads and in more places than in 2004. Additionally, the Obama advantage in ads was large, but particularly unprecedented when paired with the sponsorship story. That is, while John Kerry did benefit from an advantage in ads aired, this was only because of the support from independent groups and independent expenditures from the Democratic Party. This had the effect of limiting the ability for pro-Kerry forces to speak with one clear voice. This was not similarly true for Barack Obama in 2008, who also had large ad advantages over his opponent, but ones controlled almost entirely by his own campaign.

Identifying Persuasion Effects in 2004 and 2008

To assess the impact of political advertising in 2004 and 2008, we utilize a dataset of the over 3,000 counties in the United States (for the lower 48 states). We add two important forms of campaigning—political advertising buys and candidate visits. The advertising data come from the Wisconsin Advertising Project, as discussed above. The data are aggregated to the media market level and appended to the county file. Nielson is responsible for assigning counties to one of the 210 media

markets, and we rely on their 2004-2005 county-market match.[6] We estimate all of our models using a Democratic advertising advantage measure, which is simply the number of pro-Obama ads minus the number of pro-McCain messages. In survey-based research, scholars often take the natural log of advertising exposure (see Stevens 2008) to account for diminishing marginal returns of viewing ads. We do not take the same approach here, because the data are at an aggregated level. Voters in different counties will begin listening to campaign messages at various points in the campaign, and should therefore reach viewers at different times. Logging the ad measures in an aggregated model will assume that the effect of ads on all viewers in the county will occur uniformly with the first set of ads aired. See Jamieson et al (2004) for a similar discussion (p.82-83).[7]

We collected candidate visit data for the fall campaign (August through Election Day) from the Democracy in Action Project at George Washington University.[8] We counted the total number of

[6] Media markets often cross state boundaries, but almost never cut through counties. Generally, Nielson updates the county-market allocation yearly, but in practice few counties change markets. We compared the county-market match in 1995 with the match in 2005 and identified only 3 percent of all U.S. counties that changed media markets. These changes were in counties with a disproportionately small population.

[7] Some scholars prefer the use of Gross Ratings Points over spots aired (See Ansolabehere et al. 1999, p. 903; Shaw 1999, p. 349; Johnston et al. 2004, p. 70). Our access to the 2008 data did not include a Points measure. But the correlation between total Points and total Spots at the market level in the 2004 presidential data is over 0.950.

[8] The candidate travel data are reported by Eric M. Appleman at http://www.gwu.edu/~action/P2008.html and http://www.gwu.edu/%7Eaction/P2004.html (accessed in February 2009). Appleman uses public schedules provided by the campaigns supplemented by press accounts to record in which city or cities McCain/Obama and Bush/Kerry made public appearances on each day. We matched each city with its media market to calculate the total number of visits by each candidate to each media market. We do not count visits to a media market in which a candidate attended *only* a fundraiser because fundraisers

candidate visits to each of the 210 media markets. We include separate measures for total Democratic visits and for total Republican visits. We re-estimated all of our models with a Democratic visits advantage (similar to the ad measure above), and the substantive results were unaffected. Because the visits measures take on a much lower number of unique values, however, we prefer to report separate Democratic and Republican results.

We ran a series of statistical models predicting the change in support for the Democratic presidential candidate from the previous election; that is, for 2004, the dependent variable is Kerry percent of vote minus Gore percent of vote. For 2008, the dependent variable is Obama percent minus Kerry percent. This is identical to the approach used by Huber and Arceneaux (2007) in their county-level model of the 2000 election.[9] Each of our models also contains a series of socio-demographic measures (percent male, percent black, percent white, percent Asian, percent Hispanic, median income in the county, percent below the age of 25, and percent over 65).[10] As we noted earlier, we are not looking to make inferences about individual voters, so these socio-demographic factors are included as controls. For example, we will make no claims about how young people or African-Americans voted. We also

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generally attract a relatively small number of attendees and are not well reported on by the local news media. We also excluded vacations and visits to the candidate's home media market (when no public appearances are scheduled). This is consistent with the classification of candidate visits in Shaw (2006).

[9] We also estimated the models using the Democratic percent of the vote as the dependent variable. The results are consistent with this alternative measure.

[10] These county profiles come from estimates reported by the Census. In specific, the demographics are from the yearly Current Population Survey (http://www.census.gov/popest/counties/) and median income data are from the Bureau's Small Area Income and Poverty Estimates (http://www.census.gov/did/www/saipe/index.html)

included the percent of the vote for the Democratic and Republican presidential candidate in the county in the previous election.[11]

Two statistical points are important to note. First, we estimate each model with state-level fixed effects. Second, we ran the models—consistent with our final hypothesis—both for all counties and for counties in non-battleground states.[12] The non-battleground models afford us the opportunity to test the effects of market spillovers from battleground markets in places where the ground war is expected to be almost non-existent, as we discussed earlier.

For each year, we ran six separate models. The first three models are for all 3,000 counties in the lower 48 states, with different time horizons for ad buys (the entire general election, the fall campaign, and the October ad buys). Some research suggests that the impact of advertising is strongest at the end of the campaign, when most voters finally turn their attention to the election (Ansolabehere and Iyengar 1997). Or put differently, when assessing the impact of ads at any point in the campaign, some assume that only the most recent ads factor into the considerations of voters. (Jamieson et al 2004, for example,

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[11] For these control variables and for our dependent variables, we purchased county-level election data from Dave Leip's website (uselectionatlas.org). It should be noted that we also tried a more general measure of county-level political preferences by taking an average of the Democratic and Republican presidential vote in the previous 5 elections. The results of that alternative measure have no impact whatsoever on the coefficients for ads buys and candidate visits.

[12] Battleground states were assessed as follows. In 2004: AR, AZ, CO, FL, IA, LA, ME, MI, MN, MO, NH, NM, NV, OH, OR, PA, WA, WI, WV. These were classified by the University Wisconsin's Center for the Study of Politics in its targeted battleground polling. The states track quite closely to Daron Shaw's "public list" of battleground states that year (2006, p.57). If we restrict the list to the 15 states he identifies as "real" real battlegrounds, the reported results actually get stronger for the remaining 33 non-battleground states. In 2008, the list is from a *Washington Post* assessment in June 2008. They include: CO, FL, IA, MI, MN, MO, NV, NH, NJ, NM, NC, OH, OR, PA, VA, WI

examine the level of advertising in the week prior to their respondents' interview.) We test for this explicitly with the alternative time frames on advertising advantage. The second set of three models repeats this for non-battleground states. The full model results are shown in the Appendix, but we list the advertising results for all 12 estimated models in Table 3.

[Table 3 here]

In line with our first hypothesis—that advertising advantages translate into shifted aggregate vote patterns—the results are largely confirming. In 2004, Kerry advantages in the air war, as measured in all counties for the entire general election, is significant at $p<.05$. A 1,000 ad advantage moves the vote by about 0.11 percentage points. The effect is larger for the October ad buys, but insignificant. The 2004 results also tend to confirm our third hypothesis about amplified effects in non-battleground states, where reinforcing messages from the ground game are not present. The October ad buys produce a shift in the vote that is about 7 times larger than the initial model measuring the entire general election air war in all counties. This effect is worth emphasizing. This "natural experiment" demonstrates a significant effect that is non-trivial in size.

By and large, however, the results in 2004 are smaller than in 2008, which confirms our second expectation—that the air war should be more impactful in a race with comparatively less well-known candidates. In every analogous model with 2004, the advertising advantage measures in 2008 show a larger impact on the vote. For example, using October ad buys for non-battleground states, 1,000 ads is expected to swing 0.77 percent of the vote in a county. In 2008, a similar ad buy for Obama swings the vote by just over 1 percent.

We can see this a bit more clearly in the left panel of Figure 3. The graph shows the expected change in the county-level vote for a 2 standard deviation shift in the October advertising advantage. In 2004, for a typical county with mean values on all other measures, Kerry is expected to do worse than Al Gore's performance in 2000, but the ad buys mediate that loss in support. As shown, the expected variance in the measure is rather small, however, suggesting that Kerry was unable to secure a large and consistent enough advantage over Bush (as measured in October ad buys) to overcome the systematic loss

in support relative to 2000. In 2008, Obama improves over Kerry across the board, especially in places with large advertising advantages.

Consider this: what would have happened had Barack Obama had fewer resources to purchase ads? We can consider this directly by using the model estimates and entering values for a lower Obama advantage. Imagine if Obama, with fewer resources, was only able to purchase 80 percent of the total ads he bought in October. The resulting advertising advantage would have cost him Indiana, North Carolina, and Ohio.[13] That is, once you enter the values of the adjusted advantage measure and produce an expected vote for each county, this is then aggregated to the state level and compared to the actual vote. Barack Obama is still expected to win 318 electoral votes under this alternative scenario, but we can more safely attribute some of the size of that victory to his incredible war chest of campaign cash.

[Figure 3 here]

We have said very little about the effects of candidate visits, and these are reported in full model results in the Appendix. We do not change the time horizon on visits, like we do with ads, so the effect changes little across model specifications.[14] Bush and Kerry visits had weak impacts on the vote in 2004, though in the expected direction, but both Obama and McCain visits were correlated with a shift in the vote in 2008 (at about twice the size of Kerry and Bush visits). The effect in non-battleground states dissipates for Obama, but McCain still nets stronger support for counties in non-battleground states. This spillover effect is still important in the non-battleground context. Because counties in spillover markets still watch major network affiliates in the battleground states, they are exposed to local news coverage of

[13] Such an alternative reality is not so simplistic, of course. With fewer resources, Obama might have distributed his ads differently.

[14] We re-estimated the models with just fall visits and just October visits—to match the ad measures—but the results are generally unchanged. One strange result, however, is for Bush visits in October; they appeared to increase the vote for John Kerry. This might be the consequence of Bush spending the last part of the campaign in places where he looked most vulnerable.

the candidate visits in those states, and are still presumably susceptible to the positive press that these visits might engender. This was largely true for McCain in 2008.

The right panel of Figure 3 allows for this McCain effect to show up in the predicted results. We re-estimate the model estimates from the left panel, but for the actual values of ads and candidate visits. Because visits had a weaker effect in 2004, the estimates are essentially linear (driven only by the ad war). But because McCain visits were able to compete with any Obama ad advantage in these non-battleground counties, the increased support secured by Obama's ads can be undermined in markets with a good number of McCain visits.

These results are very compelling evidence for the ability of political advertising to move vote totals. There is one final consideration, however. Some have suggested that a county-level unit of analysis is too small (Krasno and Green 2008). Because we measure advertising buys and candidate visits at the level of the media market, and because candidates and their allies purchase air time at that level, it might be more useful to consider larger aggregations of voters. We adopt the approach used by Krasno and Green (2008) and aggregate the data to the level of the market-state. Thus, we consider all of the counties that fall within a unique state-market combination (counties in the Philadelphia market in Pennsylvania are one zone; counties in the Philadelphia market in New Jersey are a separate zone). Consistent with their argument—which focused only on turnout—we also use state-level fixed effects.

The results for the advertising advantage measure are reported in Table A.3. Advertising effects in 2004 are a bit more frequent and actually grow in size than for the county-level analysis. More still, some measures in 2004 actually compete in size for advertising effects in 2008. Nonetheless, the advertising effects in 2008 are more consistently significant, including the models for late advertising in media zones in non-battleground states.[15]

[15] There might also be some concern about heteroskedasticity. We re-estimated both our county-level and market-zone models to account such potential, modeling the variance as a function of logged population

All told, the results in these set of models suggest that ads work in the ways expected by scholars and media consultants. This is particularly important as the Internet becomes a more common campaign tactic and as campaigns shift to alternative methods of reaching voters in highly targeted ways. We have said little about this so far, but we conclude the paper with a longer discussion of these new developments in campaigns.

Discussion and Conclusions

The 2008 presidential election was historic in context and scope, and the air war was no less a part of that. Not only did a major presidential candidate opt out of pubic funding for the first time in the program's history, allowing Barack Obama to raise huge sums of money that dwarfed the expenditures of his opponent, but sponsorship of advertising was affected as a result. Whereas John Kerry controlled the message content and placement of only about half of all the pro-Kerry messages aired, Barack Obama was able to air more ads and control the message and targeting for almost every one. Such a sponsorship story might hold the key to Obama's persuasion effects in 2008. By controlling the air war directly, Barack Obama may have maximized its persuasive effect (as opposed to the more diffused messaging campaign of John Kerry).

This should spell the death of public financing in future American elections, absent an overhaul that makes the program attractive to candidates. With no public funding, one implication might be more elections with imbalances in resources. Because fund-raising success is often a function of support from voters, only in years with a split electorate should both campaigns raise comparable levels of campaign cash. As a consequence, this might increase the opportunities for campaign and media efforts (in future presidential elections) to have measurable effects on voters.

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size. These re-estimations have no effect on the size and significance of the advertising advantage measures.

More generally, the results also suggest that the air war is still prescient. Despite the rise of online campaigning and the increased importance of face-to-face campaigning, advertising was strongly effective in 2008. Put another way, the dominance of television is still true even at a time when many are pushing still more innovations in campaigns. For example, a new trend in elections relies on aggressive mining of consumer purchasing data to identify relationships between retail preferences and political choices (Hillygus and Monson 2008). Republicans aggressively used the tactic in the 2004 presidential elections (Gertner 2004; Sosnik et al 2006). Put simply, campaign consultants want to know if Republicans disproportionately purchase domestic beer, and if Democrats prefer lattes over black coffee. If so, candidates can target a highly tailored message to certain consumers (in terms of what issues to highlight and what tone to take), knowing that these consumers are likely their base voters (or undecided voters—depending on the target of the message).

Compare this to the relative inefficiency of television advertising. Most ads are aired on local television news broadcasts or talk shows and games shows (Goldstein and Freedman 2002). A certain demographic watches these programs (Rivlin 2008), of course—usually older voters—but the strategy is more of a macro-target. Your ad will be seen by your base voters, undecided voters, voters of the other party, and lots of non-voters. What you say on television, then, can often be wasted on viewers who will never vote for you, or never vote at all.

Nonetheless, the air dominated a large part of the presidential campaign in 2008, and to great effect. The results in non-battleground states, with no major ground game or micro-targeting, gives this a bit more credence. There are, of course, a few caveats. First, the results here do not examine temporal effects of ads in the ways that Shaw has done with polls and Jamieson et al do with rolling cross-sectional surveys. Most of that analysis, however, focuses on changes in the advertising advantages over time. But as Figure 2 demonstrates, Obama's ad advantages were strongest (and most consistent) in the fall campaign. So the county-level final results might not reasonable differ greatly from a more dynamic study of ads in 2008.

Second, the non-battleground context is the best possible natural experiment, but the diffusion of Internet campaigning might threaten the integrity of that in future elections. For example, although a ground game makes little sense in non-battleground states, nothing prevents citizens in these states from seeking out and learning a lot through the Internet. As such, as the Internet is adopted more aggressively by voters in the search for information, and pushed by campaigns as a method of information dissemination, it may not be true in future elections that voters in non-battleground states only experience the campaign in national media or in spillover markets. As it stands right now, however, there is little evidence that the Internet is transforming the way voters see and experience campaigns, in that online politics is still dominated by partisans and the politically knowledgeable (Hindman 2008).

In future American elections, voters will experience campaigns in different ways. TiVo and DVRs, as well narrow-targeting and media diffusion, might weaken campaigns' reliance on ad buys and 30-second messages. Early voting will amplify the actions of campaigns in the summer months, as they try to reach voters earlier and more consistently. Micro-targeting will expand and Internet organizing and fund-raising will grow more sophisticated. Obama was a pioneer in some of this, with his extensive online social networks (i.e., his My.BarackObama application on his campaign website) and innovative online media buys (such as his placement of ads in online video gaming). This will be exciting to see and experience, not to mention study. But, for now, the future is not here—political advertising on television remains king.

References

Althaus, Scott L., Peter F. Nardulli and Daron L. Shaw. 2002. Candidate appearances in presidential elections, 1972-2000. *Political Communication* 19 (1): 49-72.

Ansolabehere, Stephen, and Shanto Iyengar. 1997. *Going Negative: How Political Advertisements Shrink and Polarize the Electorate*. New York: The Free Press.

Ansolabehere, Stephen D., Shanto Iyengar, and Adam Simon. 1999. Replicating Experiments Using Aggregate and Survey Data: The Case of Negative Advertising and Turnout. *The American Political Science Review* 93:901-9.

Bartels, Larry. 1985. "Resource Allocation in a Presidential Campaign," *Journal of Politics*. 47: 928-36.

Brams, Steven and Morton Davis. 1974. "The 3/2's Rule in Presidential Campaigning," *American Political Science Review*. 68(1): 113-34.

Chang, Chingching. 2001. "The Impact of Emotion Elicited by Print Political Advertising on Candidate Evaluation." *Media Psychology* 3(2): 91-118.

Clinton, Joshua and Andrew Owen. 2006. "An Experimental Investigation of Advertising Persuasiveness: Is Impact in the Eye of the Beholder?" Working Paper.

Colantoni Claude, Terrence Levesque, and Peter Ordeshook. 1975. "Campaign Resource Allocation Under the Electoral College," *American Political Science Review*. 69(1): 141-54.

Corrado, Anthony. 2006. "Party Finance in the Wake of BCRA: An Overview," In *The Election after Reform: Money, Politics and the Bipartisan Campaign Reform Act*, ed. Michael J. Malbin. Washington, D.C.: Rowman and Littlefield.

Factcheck.org. 2009. "On Message: Voter Persuasion in the 2008 Election," Roundtable on December 12, 2008.

Franz, Michael. 2008. Choices and Changes: Interest Groups in the Electoral Process. Philadelphia: Temple University Press.

Gertner, Jon. 2004. "The Very, Very Personal is the Political," *The New York Times*. 2/15/2004.

Goldstein, Ken and Paul Freedman. 2000. "New Evidence for New Arguments: Money and Advertising in the 1996 Senate Elections. *Journal of Politics* 62(4): 1087-1108.

Goldstein, Kenneth M. and Paul Freedman. 2002. "Lessons Learned: Campaign Advertising in the 2000 elections. *Political Communication* 19: 5-28.

Hillygus, Sunshine and Quin Monson. 2008. "The Ground Campaign: The Strategy and Influence of Direct Communications in the 2004 Presidential Election," Working Paper.

Hindman, Matthew. 2008. *The Myth of a Digital Democracy*. Princeton, NJ: Princeton University Press.

Holbrook, Thomas. 1996. *Do Campaigns Matter?* London: Sage Publications.

Holbrook, Thomas. 2008. "Incumbency, National Conditions, and the 2008 Presidential Election," *PS: Political Science*.

Huber, Gregory and Kevin Arceneaux. 2007. "Identifying the Persuasive Effects of Presidential Advertising." *American Journal of Political Science*. 51(4): 957-977.

Johnston, Richard, Michael G. Hagen and Kathleen Hall Jamieson. 2004. *The 2000 Presidential Election and the Foundations of Party Politics*. Cambridge: Cambridge University Press.

Kahn, Kim Fridkin and John G. Geer. 1994. "Creating Impressions: An Experimental Investigation of Political Advertising on Television." *Political Behavior* 16(1): 93-116.

Krasno, Jon and Donald Green. 2008. Do Televised Presidential Ads Increase Voter Turnout? Evidence from a Natural Experiment. *Journal of Politics* 70 (1): 245–261.

Krosnick, Jon A. and Laura A. Brannon. 1993. "The Impact of the Gulf war on the Ingredients of Presidential Evaluations: Multidimensional Effects of Political Involvement." *American Political Science Review* 87(4): 963-975.

La Raja, Ray. 2007. *Small Change: Money, Political Parties, and Campaign Finance Reform*. Chicago: University of Chicago Press.

Meirick, Patrick. 2002. "Cognitive Responses to Negative and Comparative Political Advertising." *Journal of Advertising* 31(1): 49-62.

Pinkleton, Bruce E. 1997. "The Effects of Negative Comparative Political Advertising on Candidate Evaluations and Advertising Evaluations: An Exploration." *Journal of Advertising* 26(1): 19-29.

Pinkleton, Bruce E. 1998. "Effects of Print Comparative Political Advertising on Political Decision-making and Participation." *Journal of Communication* 48(4): 24-36.

Ridout, Travis N. and Michael M. Franz. 2007. "Do Political Ads Persuade?" *Political Behavior* 29(4): 465-491.

Ridout, Travis N. and Michael M. Franz. 2008. "Evaluating Measures of Campaign Tone." *Political Communication* 25(2): 158-17

Rivlin, Joel. 2008. "On the Air: Advertising in 2004 as a Window on the 2008 Presidential Election." *The Forum* 5(4).

Shaw, Daron R. 1999. "The Effect Of TV Ads and Candidate Appearances on Statewide Presidential Votes, 1988-96." *American Political Science Review* 93(2): 345-61.

_____. 2006. *The Race to 270: The Electoral College and the Campaign Strategies of 2000 and 2004*. Chicago: University of Chicago Press.

Sosnik, Doug, Matthew Dowd, and Ron Fournier. 2006. *Applebee's America*. New York: Simon and Schuster.

Stevens, Daniel. 2008. "Measuring Exposure to Political Advertising in Surveys." *Political Behavior* 30(1): 47-72.

Valentino, Nicholas A., Hutchings, Vincent L., and Williams, Dimitri. 2004. "The Impact of Political Advertising on Knowledge, Internet Information Seeking, and Candidate Preference." *Journal of Communication* 54(2): 337-354.

Tables and Figures

Table 1—Ad Totals in 2004 and 2008

2004	March 3 to Election Day	June 5 to Election Day	Sept.1 to Election Day	Oct. 1 to Election Day
John Kerry	605,533	448,252	260,092	171,274
George Bush	408,604	293,285	200,994	132,650
# of markets w/ads	198	199	146	121
2008				
Barack Obama		438,912	318,045	215,846
John McCain		341,183	224,154	153,671
# of markets w/ads		189	189	188

Source: Wisconsin Advertising Project.

Figure 1—Market-Level Ad Buys for Fall Campaign

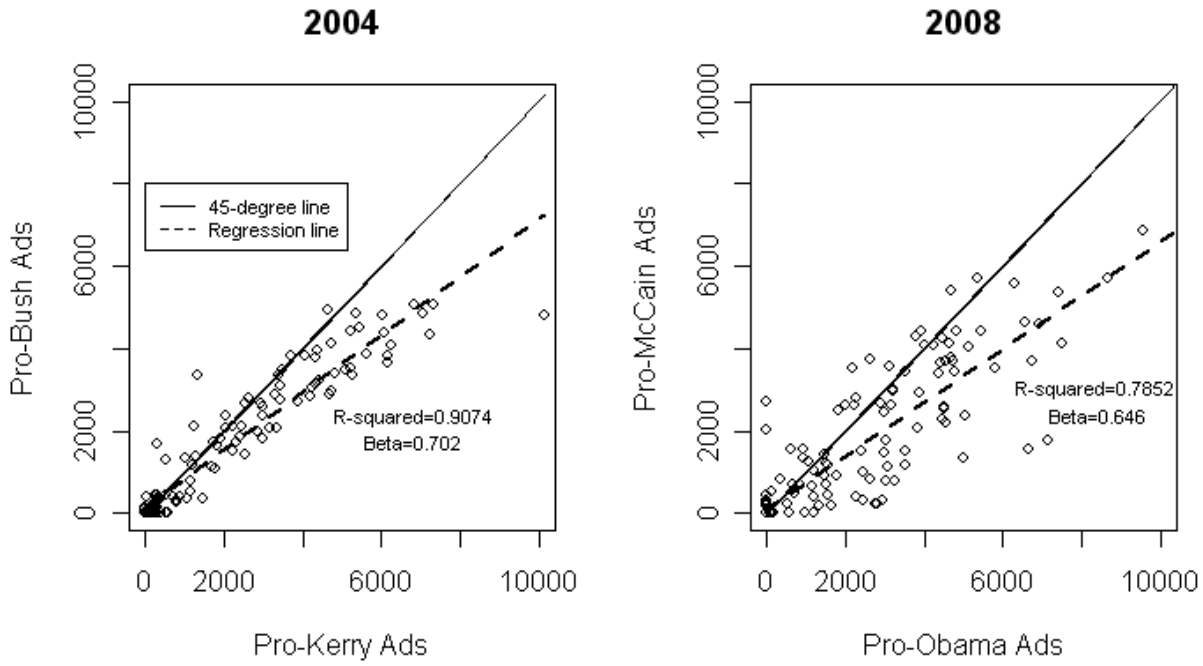


Figure 2—Number of Ads per Week

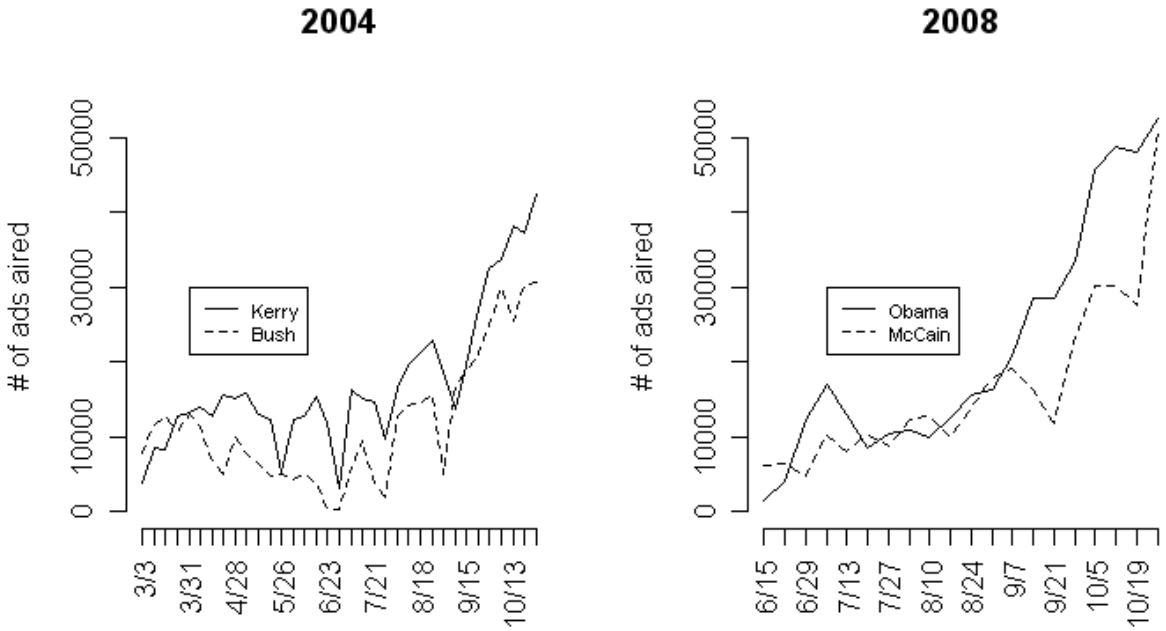


Table 2—Sponsorship of All General Election Ads in 2004 and 2008

2004	Candidate	Party Independent	Party Coordinated	Interest Group	# Ads Aired
John Kerry	0.42	0.25	0.07	0.26	605,533
George Bush	0.52	0.04	0.34	0.10	408,604
2008					
Barack Obama	0.94	0.00	0.01	0.04	438,912
John McCain	0.43	0.20	0.32	0.05	341,183

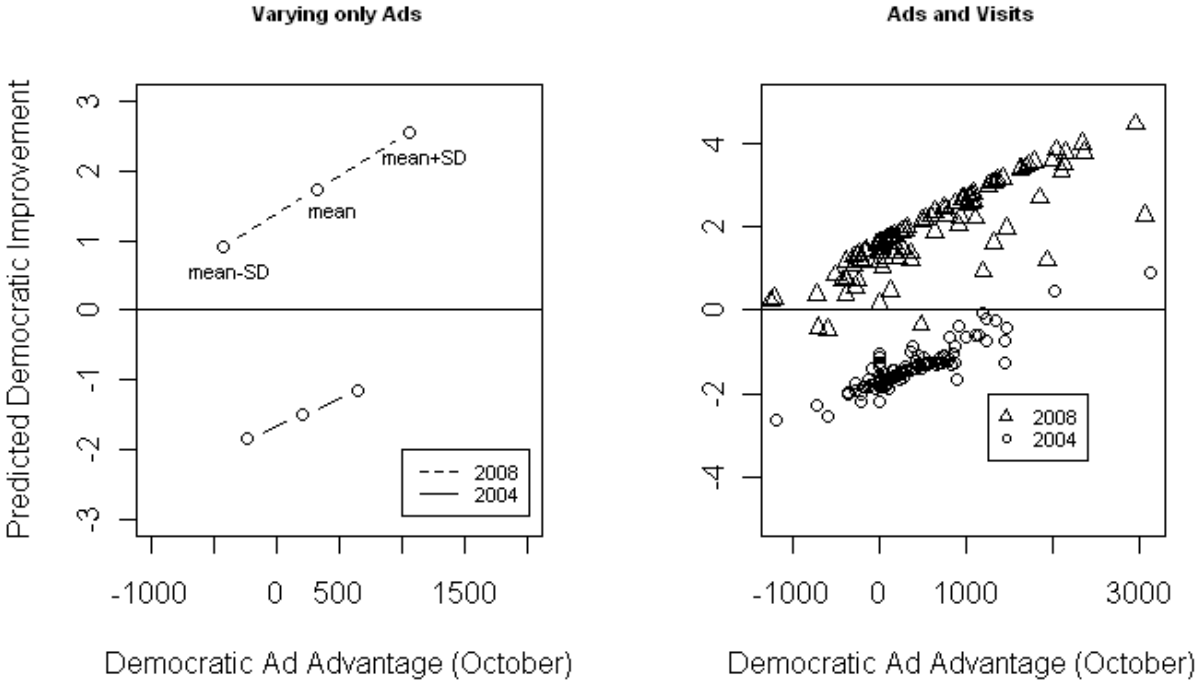
Source: Wisconsin Advertising Project.

Table 3—Effect of Advertising on County-level Vote in 2004 and 2008

Dep. Var = Democratic improvement over previous election	Democratic Ad Advantage (1000s)
2004	
All counties (all general)	0.115+
All counties (Sept/Oct)	0.083
All counties (October)	0.225
Non-battleground (all general)	0.191+
Non-battleground (Sept/Oct)	0.290
Non-battleground (October)	0.770+
2008	
All counties (all general)	0.551*
All counties (Sept/Oct)	0.584*
All counties (October)	0.636*
Non-battleground (all general)	0.600*
Non-battleground (Sept/Oct)	0.780*
Non-battleground (October)	1.081*

Entries are coefficients from separate regression models with state-level fixed effects. See Appendix for full model results.
+ p<0.05; *p<.01 (two-tailed)

Figure 3—Predicted Effects of Advertising in 2004 and 2008



**Note: Graph on right allows impact to vary on actual values of ads and visits. Estimates are from a county-level model of non-battleground states.

Appendix
Full Model Results for Different Specifications

Table A.1---2004 Results

Dep. Var = *Kerry improvement over Gore*	All counties			Non-battleground counties		
	Entire campaign	Fall Campaign	October	Entire campaign	Fall Campaign	October
Kerry Ad Advantage (1000s)	0.115+	0.084	0.225	0.191+	0.290	0.770+
Kerry Visits	0.090	0.111+	0.108+	0.166	0.170	0.163
Bush Visits	-0.107+	-0.071	-0.082	-0.155	-0.104	-0.124
Gore % in 2000	-1.480*	-1.480*	-1.479*	-1.472*	-1.470*	-1.469*
Bush % in 2000	-1.405*	-1.405*	-1.405*	-1.376*	-1.375*	-1.374*
% Black	.025*	0.026*	0.026*	0.026+	0.026+	0.026+
% White	-0.088*	-0.087*	-0.087*	-0.098*	-0.098*	-0.098*
% Hispanic	0.024*	0.023*	0.024*	0.022*	0.021*	0.021*
% Asian	0.169*	0.166*	0.166*	0.151*	0.145*	0.146*
% over 65	0.048+	0.047+	0.047+	0.028	0.025	0.026
% under 25	-0.005	-0.005	-0.005	0.002	0.001	0.0021
% Male	-0.095*	-0.096*	-0.095*	-0.079+	-0.079+	-0.077+
Median Household Income (10000s)	0.201*	0.195*	0.199*	0.193+	0.184+	0.193+
N	3111	3111	3111	2011	2011	2011

Entries are coefficients from regression models with state-level fixed effects. All Percent variables are coded from 0-100.
+ p<0.05; *p<.01 (two-tailed)

Table A.2---2008 Results

Dep. Var = *Obama improvement over Kerry*	All counties			Non-battleground counties		
	Entire campaign	Fall Campaign	October	Entire campaign	Fall Campaign	October
Obama Ad Adv. (1000s)	0.551*	0.584*	0.636*	0.600*	0.780*	1.081*
Obama Visits	0.205*	0.224*	0.244*	0.121	0.049	0.041
McCain Visits	-0.192*	-0.238*	-0.199*	-0.232*	-0.270*	-0.228*
Kerry % in 2004	-1.377*	-1.400*	-1.420*	-1.379*	-1.388*	-1.395*
Bush % in 2004	-1.313*	-1.331*	-1.350*	-1.306*	-1.311*	-1.319*
% Black	0.132*	0.134*	0.133*	0.162*	0.162*	0.162*
% White	-0.020+	-0.023+	-0.023+	-0.021	-0.024+	-0.022
% Hispanic	0.155*	0.157*	0.158*	0.167*	0.170*	0.169*
% Asian	-0.008	-0.005	-0.003	-0.044	-0.039	-0.040
% over 65	0.132*	0.138*	0.139*	0.147*	0.153*	0.152*
% under 25	0.224*	0.224*	0.223*	0.238*	0.238*	0.237*
% Male	-0.080*	-0.081*	-0.081*	-0.052	-0.053	-0.054
Median Household Income (10000s)	1.104*	1.124*	1.121*	1.321*	1.358*	1.346*
N	3111	3111	3111	2020	2020	2020

Entries are coefficients from regression models with state-level fixed effects. All Percent variables are coded from 0-100.
+ p<0.05; *p<.01 (two-tailed)

Table A.3—Advertising Results for "Media Zones"

Dep. Var = Democratic improvement over previous election	Democratic Ad Advantage (1000s)	Number of Zones
2004		
All media zones (all general)	0.209*	344
All media zones (Sept/Oct)	0.553*	344
All media zones (October)	0.860*	344
Non-battleground (all general)	0.287 (p=.059)	211
Non-battleground (Sept/Oct)	0.713 (p=.106)	211
Non-battleground (October)	1.05 (p=.100)	211
2008		
All media zones (all general)	0.446*	344
All media zones (Sept/Oct)	0.428*	344
All media zones (October)	0.479*	344
Non-battleground (all general)	0.546*	223
Non-battleground (Sept/Oct)	0.723*	223
Non-battleground (October)	0.951*	223

Entries are coefficients from separate regression models with state-level fixed effects. "Media Zones" are all counties in a market-state combination (i.e., counties in the Philadelphia market in Pennsylvania are one zone; counties in the Philadelphia market in New Jersey are a separate zone). Full model results are available from authors on request.
+ p<0.05; *p<.01 (two-tailed)