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Measuring Media Exposure and the Effects of Negative Campaign Ads

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Recent controversy over negative television campaign commercials has focused on their effects on voters. Proponents of the demobilization hypothesis claim that negative ads undermine political efficacy and depress voter turnout. Others have suggested a stimulation hypothesis, arguing that such advertising may have an invigorating effect on the electorate. Empirical tests of competing claims demand improved measures of real voters' exposure to real ads in the context of real campaigns. We develop a new approach to estimating exposure outside the lab that combines respondent viewing behavior and the strategic decisions of campaigns. Using this combined measure, we find no evidence that exposure to negative advertising depresses turnout. Instead exposure to negative ads appears to increase the likelihood of voting. We find this effect when we estimate exposure with our new measure, as well as when we use a very different perceptual measure of ad tone.

1. INTRODUCTION

For decades, scholars have debated the impact of campaigns and campaign advertising on voters and election outcomes.¹ Recently, the debate in both the scholarly literature and the popular press has been re-ignited by the question of whether or not negative television campaign ads depress voter turnout. Advocates of the demobilization hypothesis claim that negative ads undermine political efficacy and make it less likely that citizens will find their way to the polls. In the strongest expression of the demobilization hypothesis, Ansolabehere and Iyengar (1995) undertook a variety of controlled experiments on a set of California races, as well as a study of turnout in the 1992 Senate elections, to examine what voters learn from television commercials and how negative campaign commercials influence voter participation. Although they found that negative advertisements do provide information to citizens, their most powerful findings were that negative commercials—

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¹See, for example, Ansolabehere and Iyengar 1995; Bartels 1993; Finkel 1993; Holbrook 1996; McGuire 1986; Patterson and McClure 1976; Zaller 1992, 1996.

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“attack advertising” as they put it—demobilize the electorate, leading to decreased levels of political efficacy and a lower probability of voting, with particularly strong effects among self-identified independents.²

These claims have come under critical review, drawing both theoretical and empirical challenges (Bartels 1996a, Finkel and Geer 1998). Finkel and Geer, for example, have argued on behalf of a stimulation hypothesis, suggesting several theoretical reasons to expect exposure to negative spots to increase turnout. First, negative advertising provides a significant amount of relevant information; second, negative information may be given greater weight than positive messages; third, negative commercials may produce stronger affective responses, leading to heightened enthusiasm for candidates, greater engagement with the election, and possibly increased motivation to learn more about the candidates (Finkel and Geer 1998, 577). In addition, negative ads may help raise the perceived stakes in a campaign. Criticism of an opponent—particularly strong criticism—sends a message that something of substance is at stake in the election, that its outcome matters, and that this is a choice voters should care about.

To test empirically the demobilization hypothesis, Finkel and Geer combined an extremely detailed content analysis of presidential advertisements from the political commercial archives at the University of Oklahoma with aggregate turnout data and with pooled 1960–1992 National Election Studies (NES) data. They found that the tone of the advertising campaign in a particular election year had no effect on aggregate rates of turnout, nor on individual-level measures of turnout. Negative advertising did not have a particular demobilizing effect on political independents, the group seen as most likely to be affected; and those most likely to have been exposed to negative advertising were no less likely to vote than others. In fact, with other factors held constant, such individuals, along with those respondents most interested in the campaign, were actually more likely to report having cast a ballot (Finkel and Geer 1988, 588).

Although we find Finkel and Geer’s theoretical arguments compelling and are sympathetic to their conclusions, their measures of exposure to negative advertisements suffer from several important limitations. Even if archives have a complete collection of ads produced in a particular election

²See also Ansolabehere et al. (1994). The question of negative ads has received a good deal of attention, and many studies have failed to find any demobilizing effects (e.g., Garramone et al. 1990). In a recent review, Lau and Sigelman (1998) report on twelve studies (containing twenty-one “findings”) that address the effects of negative ads on citizen attitudes and behaviors. Of the five studies that reported any negative outcomes, two showed mixed or non-findings when it came to turnout. Of the work reviewed by Lau and Sigelman, only Ansolabehere and Iyengar (1995) and Ansolabehere et al. (1994) report unequivocally demobilizing effects of negative ads on voter turnout.

(an assumption challenged by Jamieson, Waldman, and Sherr 1998, 7), archival collections do not weight spots by how many times they were broadcast. A spot in the archives that was aired one-hundred times receives the same weight as a spot aired one-thousand times. Indeed, some spots held by archives may never have been broadcast at all. Furthermore, without state- and market-level data on the distribution of ads, one must proceed as though all voters in a given year were exposed to the same volume and mix of advertisements. As Finkel and Geer acknowledge, this is simply not the case.

Finkel and Geer end their piece with a call for further tests of the demobilization hypothesis, using "better individual-level measures of exposure to campaign advertisements" (1998, 591). Accordingly, our first goal in this article is to develop and test a new measure of exposure to political advertising. By combining information about the viewing habits of individuals and the actual distribution of campaign advertisements in the 1997 Virginia gubernatorial election, we devise an improved method for estimating advertising exposure. We then apply this method to the Virginia election and find that negative political ads not only had no demobilizing effect, but actually increased voter turnout.

2. A SIMPLE MODEL OF ADVERTISING EXPOSURE

Exposure to a particular television ad is best thought of as a function of two factors: the frequency with which an advertisement is aired in a particular media market and the quantity of television viewing by a particular respondent.³ As television viewing and the volume of advertising increase, the probability of exposure rises. In contrast, there is zero probability of exposure to an ad if either of the constituent measures is zero. For example, even the most avid television watchers will fail to see a campaign ad that is not aired in their media market. Similarly, living in a media market that is saturated with campaign advertisements will mean little to a respondent who never watches television. Clearly, one needs estimates of both right-hand-side terms in order to estimate accurately levels of advertising exposure.

To construct a more accurate measure of exposure, we conducted a multi-pronged research project during the 1997 Virginia gubernatorial election. The race, which pitted Republican Attorney General Jim Gilmore against Democratic Lieutenant Governor Don Beyer, was dominated by competing plans to modify Virginia's annual tax on cars and trucks, by alternative proposals to improve education in the commonwealth, and to a lesser

³Actually, we believe there is a third critical factor: the tendency of the respondent to pay attention to campaign commercials (as opposed to, for example, leaving the room or "channel surfing"). For the time being, we ignore this factor and assume uniform patterns of attention among respondents.

extent, by arguments over crime and abortion. Happily for us, many of the most strenuous disagreements found their way into campaign ads. On November 4, Gilmore defeated Beyer by a comfortable 13 percentage-point margin (56 percent to 43 percent), bringing with him into office, for the first time this century, both a Republican Lieutenant Governor and a Republican Attorney General.

Our analysis draws on data from several sources: first, a panel survey of Virginia registered voters; second, a content analysis of television commercials aired during the campaign; and third, detailed satellite tracking data showing when, where, and how many times each campaign ad aired in each of Virginia's top four media markets. By bringing these data together, we are able to construct new, more precise measures of exposure that would not be possible by using any one data source exclusively.

2.1 What Was Aired and When

In the past, the only way to get information on the volume, tone, and targeting of television advertising was to try to obtain information from frequently uncooperative and unreliable campaigns, or to go through the arduous process of calling individual stations in selected markets and examining their advertising logs. In either case, serious questions about the accuracy of the data would remain. Fortunately, an independent satellite tracking system—the “Polaris Ad Detector”—now automatically monitors political advertising activity throughout the year. The Polaris system tracks the satellite transmissions of the national networks (ABC, CBS, NBC, and Fox) as well as twenty-five national cable networks (CNN, ESPN, TNT, etc.). In addition, Campaign Media Analysis Group (CMAG), the owner of the Polaris technology, has set computer traps to monitor advertising in each of the country's top seventy-five media markets. The system's software recognizes the electronic seams between programming and advertising and identifies the “digital fingerprints” of specific advertisements. When the system does not recognize the fingerprint of a particular commercial spot, the storyboard (the full audio and every four seconds of video) is captured and downloaded to the firm's headquarters. Analysts then code the ads, assigning them to particular categories, and tag them with a digital code. Thereafter, the system automatically recognizes and logs that particular commercial wherever and whenever it airs.⁴

⁴We have a high degree of confidence in the CMAG system based on its performance in 1996. The validity of CMAG from the 1996 presidential election was assessed in a number of different ways. First, we obtained documents from both the Clinton and Dole campaigns on the aggregate levels of spending in each market. These spending totals were consistent with the aggregate information by market from the CMAG data. Second, since both campaigns bought the CMAG data, we interviewed staff from both campaigns to see if the CMAG reports they received on their own targeting were consistent with their own records of their ad buys. The staffers reported only a hand-

The quantity and quality of these data are remarkable. The CMAG database contains information on the content, timing, and geographic targeting of every commercial aired in the covered markets. In Virginia, we were provided information on 10,737 spots that aired in the state's four largest media markets (home to more than 90 percent of the Commonwealth's population) during the 1997 gubernatorial race. More specifically, we were given data on the number of times and at what part of the day a particular commercial was aired in a particular market. Using the storyboards for all of the spots and videotapes of most of them, we coded each of the commercials for tone and merged this information with the CMAG data.

We coded the spots with the aid of 149 Arizona State University and University of Virginia undergraduates, who endured a barrage of thirty-one advertisements presented on videotapes provided by the gubernatorial campaigns. Students were asked to evaluate the tone of each spot on a five-point scale ranging from 1 ("most positive" appeals by a sponsoring candidate) to 5 ("most negative" claims about an opponent). Students were instructed to code as "3" ads containing a fairly even mix of positive appeals by the sponsor and criticisms of his opponent. We took the average score for each spot, rounded to the nearest integer, and then differentiated among "positive" (codes 1 and 2), "negative" (codes 4 and 5), and "contrast" (code 3) ads. (A second team of coders evaluated fourteen additional spots which aired, but were not included on the tapes provided by the campaigns. See Appendix A for a more complete description of the coding process.)

Gilmore enjoyed an eight percentage-point statewide advantage in spots aired over his Democratic opponent, broadcasting 54 percent of all the ads aired during the campaign (translating into a lead of almost 1,000 spots). Although Gilmore led in every market, the two candidates were more evenly matched in the state's two biggest and most expensive media markets, Washington, D.C. (where Beyer was most competitive) and Richmond.⁵

ful of discrepancies out of the tens of thousands of ads aired. It should be noted that in these cases, the campaign staffers usually trusted the CMAG findings, believing that the stations aired the wrong commercial or aired a commercial at an incorrect time. (The Polaris technology was originally developed to enable advertising agencies to confirm that their commercials were being aired.) Finally, we compared CMAG data in the Columbus, Ohio market with the findings of Prior (1997), who gathered the broadcast logs of the stations in that market and again found an almost perfect fit.

⁵At the aggregate level there is an alternative measure of advertising intensity. The Gross Ratings Point (GRP) is an estimate of the total number of viewers who were likely to have seen particular spots. It is the metric most commonly used by political strategists to describe the extent of advertising activity, and it is a useful measure for comparing the magnitude of advertising buys from market to market or race to race. Nevertheless, the GRP is not a direct measure of exposure at the individual level. Moreover, at the aggregate level, because we take into account individual viewing patterns throughout the day, our combined measure of exposure will only yield misleading information if, in a given daypart, one of the candidates has purchased significantly fewer spots on more highly rated shows. Our examination of where spots were placed indicates that this was not the case.

Table 1. Tone of Ads Made and Spots Aired by Candidate

Tone and Totals	Spots Aired	Ads Made
Gilmore		
Positive	32%	50%
Contrast	27%	14%
<u>Negative</u>	<u>41%</u>	<u>36%</u>
Total	5,829	22
Beyer		
Positive	13%	31%
Contrast	27%	13%
<u>Negative</u>	<u>60%</u>	<u>56%</u>
Total	4,908	16

Looking at the timing of the commercials shows that more than two out of every three spots aired in the race were broadcast during the last month of the campaign. Over the summer and into September, Beyer had a slight, two percentage-point advantage in spots aired. In the last five weeks of the campaign, however, Gilmore enjoyed a fourteen-point lead over his Democratic rival in the number of spots aired.

Table 1 presents the distribution of spots aired by tone for the two candidates. Sharp differences can be seen in the tone of the ads aired by the two candidates, with Beyer broadcasting many more negative and far fewer positive spots than Gilmore. Almost a third of Gilmore's ads were positive, with 27 percent contrast and 41 percent negative. By comparison, a majority (60 percent) of Beyer's broadcast spots were negative in tone, with 27 percent contrast and only 13 percent positive. Altogether, just under half of all ads aired in the Virginia gubernatorial race were negative, with one quarter positive and another quarter contrast.

Table 1 also provides strong evidence that scholars should be wary about judging campaign advertising by looking only at commercials made. Quite simply, the portrait of campaign advertising that emerges from an examination of commercials produced by the campaign differs markedly from the distribution of spots actually viewed by Virginia voters. For example, if one were to look only at commercials produced (column three), one would conclude that 31 percent of Beyer's advertisements were positive and 13 percent were contrast. In reality, the proportions are reversed; 27 percent of the ads that Beyer aired were contrast spots and only 13 percent were positive.

Of course, knowing the aggregate number of spots aired by each campaign is of limited utility in estimating individual-level exposure, regardless

Table 2. Advertising by Time of Day

Day Part	Time	% of Beyer Spots Aired	% of Gilmore Spots Aired	% of Ads That Were Negative
Early Morning	6-10 am	11	12	47
Daytime	10 am-4 pm	26	19	51
Early Fringe	4 pm-7:30 pm	18	14	52
Early News	News in E. Fringe	6	6	48
Prime Access	7:30 pm-8 pm	12	11	44
Prime Time	8 pm-11 pm	7	10	49
Late News	10 or 11 pm news	6	7	48
Late Fringe	11 pm-1 am	8	13	51
Weekend Day	6 am-7 pm	6	8	49

of how one has coded the data. We also need to know when spots were aired. In Table 2, we present data on the time of day ("daypart" in industry parlance) when the respective candidates aired their commercials. Overall, the patterns are fairly similar. Both candidates concentrated their advertising during daytime and early evening hours, broadcasting relatively fewer spots on the weekends, early in the morning, and during prime time. Indeed, on an hourly basis, the most popular time for both candidates was "prime access," the half-hour leading up to prime time broadcasts. Where Beyer enjoyed an advantage in the daytime and early fringe dayparts, Gilmore targeted more commercials in prime time and late fringe. The variance in buying patterns yields the greatest difference in spots aired during late fringe where, statewide, Gilmore enjoyed a two-to-one advantage (747 to 379). We find that there was very little variance in the proportion of negative spots aired. In each daypart, about five in ten spots were negative.

The coded CMAG data provide an interesting picture of the strategic decisions made by the campaigns and of the tone and targeting of ads in Virginia's 1997 race for Governor. Still, measures of what ads were broadcast tell us nothing about exposure across individual respondents and, by themselves, do not allow us to estimate their effects. We also need a measure of respondent media exposure.

2.2 Estimating Individual Exposure

Just as ad buys vary geographically across markets and temporally throughout the course of a day, citizen television exposure varies (indeed, this is one reason why ad buys vary). This variance interacts with the targeting of commercials to affect the probability that an individual has seen a particular spot. As discussed above, a respondent residing in a market that was heavily targeted by campaign strategists, but who watched little television,

would still have a low level of exposure. In fact, a heavy TV watcher living in an area that was not intensely targeted might have a higher level of exposure. In short, measuring exposure not only demands information on the targeting of ads, but also on the probability of reception at the individual level.

Scholars have used a number of different strategies to measure exposure at the individual level. Some have proceeded by building scales from common questions about the sources of campaign information (e.g., newspapers, magazines, radio, and television news). Others have argued that, because self-reported exposure to the news media can be unreliable, reception is best measured by a political information variable built from a set of factual questions (e.g., Price and Zaller 1993). Such measurement strategies make sense when applied to messages from the news media or to a total campaign environment. These measures are less valid when applied to the specific case of television advertising. To measure exposure to television advertising we need a measure of individual viewing patterns.

There are two possible strategies for measuring individuals' viewing patterns: (1) asking about specific shows and (2) asking about television-watching habits during particular times of the day. The 1995 NES Pilot Study tested both—asking two general questions about television watching during the day and evening as well as a battery of questions about particular television shows. Although the specific-show measures performed slightly better, analysis of the instrumentation suggested that both techniques provided valid measures of television viewing (Bartels 1996b).

Unfortunately, collecting data on the viewership of enough shows to create reliable indicators of individual exposure over the course of a typical day would demand a prohibitive outlay of resources. Therefore, we followed a different strategy. In a pre-election survey of Virginia voters, we included, along with commonly asked demographic, issue, and voting questions, a battery about television viewing habits. Specifically, we asked respondents how much television they watched during parts of the day corresponding with the daypart information from the CMAG data. (See Appendix B for question wordings.)⁶

Our pre-election telephone survey included 637 randomly selected registered voters from throughout the Commonwealth of Virginia and was in the field from October 5 through October 17, 1997. Under the guidance of professional staff supervisors, interviews were conducted by students from two classes in the departments of Sociology and Government and Foreign

⁶We accounted for each weekday daypart, although we merged several into a single question (asking, for example, how many hours of television the respondent watched between 4 and 8 pm). We did not ask about television viewing during the weekend thirteen-hour daypart, as a single question would be unreliable and multiple questions inefficient given the relatively small proportion of spots run during this daypart.

Affairs at the University of Virginia.⁷ On the Monday following the election (November 10), we returned to the field for an additional thirteen days of follow-up interviews, this time conducted by a professional survey research firm.⁸ In this second wave we were able to recontact 350 out of our initial 637 respondents.⁹

Respondents in our pre-election survey viewed an average of 4.4 hours of television during a typical weekday. This figure, however, masks considerable variation in the quantity of television viewing. While less than 5 percent of our sample watched no television at all, a full one-quarter watched 6 hours per day or more, and 7 percent consumed at least 10 hours of television on a daily basis. These total television watching figures—calculated from the individual daypart measures—are comparable to national data collected in the 1995 NES Pilot Study.

2.3 Putting It All Together

To derive an estimate of exposure to campaign ads we merged the survey and coded CMAG data at the level of the daypart. For every respondent in each of the top four markets, the CMAG data were weighted by self-reported television viewing for the relevant daypart. Thus, if respondent Smith lived in the Roanoke market, where Don Beyer aired 164 negative ads during the four-hour morning daypart, and if Mrs. Smith told us she watched

⁷The survey was administered using the facilities of the Center for Survey Research at the University of Virginia and a list-assisted random-digit dial sample provided by Genesys Sampling Systems of Ft. Washington, PA. Up to eight call-backs were undertaken, but conversion of non-respondents was not attempted. The cooperation rate (completed interviews/completed interviews + refusals) was 53.7 percent.

⁸Interviews were conducted by Promark Research, of Houston, Texas.

⁹At the conclusion of the first-wave interviews, respondents were asked for a first name or identifying initial and were informed of a possible re-contact. Ninety-four respondents—approximately 15 percent of the original sample—refused to give identifying information, and/or asked not to be recontacted. Of the remaining 543, post-election interviews were completed with 350, or 64.5 percent (54.9 percent of the original sample). Although the entire post-election field period spanned almost two weeks, more than ninety percent of the interviews were completed within the first seven days. Across a wide range of demographic and attitudinal variables (including media exposure), respondents in the post-election wave closely resemble those who only took part in the pre-election survey. Despite these reassuring similarities, there are some important differences. Respondents taking part in both waves are more politically engaged and informed (despite no differences in campaign interest) than those who only participated in the first wave, a finding consistent with existing work on response bias (Brehm 1993). How might such self-selection affect our findings in the present study? If anything, a better informed, more highly engaged sample works against us, by making effects of campaign advertising harder to detect. To the extent that those who are more politically aware are less susceptible to campaign messages (Zaller 1992, 1996), our post-election sample represents a higher threshold for any effects. (The story would be somewhat different if we were using political information as proxy for exposure to campaign messages. Because we have more direct measures, this is not a concern.)

two hours of morning television, she was assigned an exposure value of one-half the total number of Beyer negative ads aired during this daypart. We repeated this procedure for all Beyer and Gilmore ads (whether negative, positive, or contrast) and for every daypart, yielding a preliminary estimate of ad exposure in units of spots seen.

This measure, ranging from zero exposure to having seen more than two thousand spots during the course of the campaign, is of course only an estimate, and most likely an overestimate at that. We have no way of knowing that a given respondent was actually watching television at the time (and on the channel) that a given ad was aired.¹⁰ It is best, therefore, to think of our measure as an upper bound on the number of spots that respondents were likely to have seen and as a measure of relative exposure among respondents in our sample. Recognizing that the effects of campaign ads will tend to diminish as the number of ads one has seen grows (the effect of the first 200 negative spots, for example, is most likely greater than the effect of the second or third 200), we took the log of our preliminary estimate (after first adding one to account for respondents with zero exposure), resulting in a measure ranging from 0 to 7.75 (mean = 5.24, standard deviation = 1.34).¹¹

3. ADVERTISING EFFECTS

To check on the validity of our exposure measure, we first estimated a model of respondent recall of television advertising. Respondents who we estimated to have seen more ads should have been more likely to recall having seen an ad than those who saw fewer ads. This is precisely the case. Our combined measure of exposure to television advertising had a significant influence on recall of television advertising. We asked our post-election respondents whether they remembered having seen any Gilmore or Beyer television commercials. (More than four-fifths said they did.) Even controlling for education, general television viewing habits, campaign interest, and television news viewership, recall of campaign ads rises with our estimate of exposure. Although those whom we estimate to have seen no ads are still as likely as not to report remembering one, the probability of recall is almost doubled for respondents at the highest level of estimated exposure.

¹⁰Moreover, as we have noted, we have no information on the probability that the respondent was paying attention to a given commercial, something we believe future models should take into account.

¹¹In general, this combined measure will be most useful when there are high levels of variance in patterns of both ad buys and respondent viewing. If there were no variance in the latter—if every respondent watched the same quantity of television in every daypart—our measure would be composed entirely of differential patterns of candidate ad buys across markets and dayparts. Put differently, there would be no added value from data on respondent viewing. Similarly, if the exact same ads were run in the same numbers in the same dayparts and markets, our measure of exposure would be driven entirely by patterns of respondent viewing.

We also estimated a model using just the number of spots aired in the market as a measure of exposure. Consistent with our expectations, we found no effect for this completely contextual measure of exposure. Similarly, we estimated a model using only television watching and again found no effects. In short, we only found effects when we combined information about both what was aired and what was watched. These initial results give us confidence about the validity of our combined measure and encourage us to apply it to the substantive question of negative ads and voter turnout.

3.1 Negative Ads and Voter Turnout

To assess the effect of advertising on the probability of voting, we estimated a series of simple probit models of voter turnout. These models, reported in Table 3, include many of the standard correlates of voting (e.g., Rosenstone and Hansen 1993). Consistent with volumes of previous research, we found that turnout increases with education as well as with strength of partisanship, campaign interest, and reading a daily newspaper. In our model, neither gender nor race has a significant effect on voting, although age does have a positive impact.¹² Finally, mobilizing contacts (in person or by mail) by campaigns, parties, and other groups increases the probability of voting.

Our more relevant finding is that exposure to negative political advertisements had no demobilizing effect at all. Instead, there is a strong, positive effect on turnout. Based on Model A, moving from the lowest to highest levels of exposure would raise the probability of voting by a staggering fifty-one points, from an estimated .33 to .84 (mean turnout in the sample is 73.6 percent).¹³ Of course, this is a relatively meaningless figure: It makes little sense to compare the twenty-six respondents who saw no negative campaign ads with the single respondent who saw more than 1,200. More realistically, moving one standard deviation away from the mean level of exposure would increase the probability of turnout by three points, from .76 to .79.¹⁴

We re-estimated the model in a variety of ways. First, we added our estimates of exposure to contrast and positive ads, separately and in combination.

¹²We do not include income in the model; doing so produces no effects (either from income or the log of income), but does lead to a large number of missing data.

¹³Holding all other variables constant at their means, except for sex and race which were set to zero.

¹⁴It should be noted that these effects are not merely due to television watching in general (which is included in the model), nor to differences in advertising buys across the four major media markets. We include in Model A the "volume" of negative ad buys by media market, which has no effect once we have accounted for our more comprehensive measure of exposure. We tried alternative specifications, replacing this variable with the total number of ad buys by market, as well as with disaggregated measures of positive, negative, and contrast buys by market. None of these specifications had any effect whatsoever after controlling for our exposure measure.

**Table 3. Voter Turnout and Tone of Ads
Probit Estimates**

	Model A	Model B	Model C
Exposure to negative ads	.202 (.105)	—	.180 (.103)
Perceived negativity of ads	—	.435 (.204)	.406 (.205)
Education	2.064 (.414)	1.838 (.440)	2.015 (.421)
Female	.220 (.206)	.245 (.210)	.260 (.209)
African American	-.087 (.331)	-.003 (.314)	-.002 (.321)
Age	.015 (.006)	.016 (.007)	.016 (.007)
Strength of partisanship	.732 (.285)	.797 (.282)	.799 (.285)
Campaign interest	1.177 (.310)	1.226 (.309)	1.258 (.310)
Newspaper reading	.068 (.035)	.073 (.035)	.072 (.035)
Weekday television viewing	-.002 (.042)	.045 (.033)	-.003 (.043)
Total negative ads aired in market	.000 (.001)	.000 (.001)	.000 (.001)
Mobilized by party, campaign, group	.502 (.202)	.476 (.204)	.500 (.205)
Internal efficacy	.046 (.357)	.082 (.366)	.088 (.373)
Constant	-3.897(1.889)	-3.499(1.854)	-4.068(1.939)
log likelihood	-110.578	-109.609	-108.169
n	273	273	273
Percent "correctly" predicted	81.32	80.95	80.22
"null model"	73.63	73.63	73.63

Cell entries are probit coefficients with robust standard errors in parentheses.

Doing so introduces serious problems of collinearity; as one would expect, people exposed to high levels of negative ads tend also to have been exposed to high levels of other ads.¹⁵ A clear pattern emerges, however: The effects of negative ad exposure are always positive and strong. The effects of our other measures by themselves are positive, but when combined with the stimulating effects of negative ad exposure these effects evaporate. In any combination, the effects of negative ads are positive, while those of contrast and positive are negative (and, due to collinearity, none of these effects reaches statistical significance). In sum, although we consider it entirely possible that exposure to campaign ads in general leads to higher turnout, the evidence suggests that it is primarily the negative spots that have a mobilizing effect on voters.¹⁶

¹⁵Unlike the case in the lab, where exposure to particular ads can be carefully controlled, respondents in the real world inevitably view a mix of negative, positive, and contrast spots. No respondent in our sample saw one type of ad without being exposed to the other two as well. While multicollinearity will not usually result in biased coefficients, it can lead to inflated standard errors that make interpretation difficult.

¹⁶We operationalized exposure in yet another way, looking at the ratio of negative to positive and contrast ads. Although this is a less useful test of the demobilization and stimulation hypotheses

Next, we tested the hypothesis that negative ads might have demobilizing effects for political independents. We created interaction terms to estimate the effects of negative ad exposure separately for different partisan groups (we also re-estimated our original model for each group separately). The results were the same as before: We found no demobilizing effects among political independents, nor for any other partisan identifiers.

In their experimental work, Ansolabehere and Iyengar found that exposure to negative ads led to significant and substantial reductions in internal efficacy, or what they refer to as “political self-confidence” (1995, 104). We used the same two questions that Ansolabehere and Iyengar relied on to measure internal efficacy and estimated a model similar to the one they report.¹⁷ We looked for a similar effect in our data and found none.

Finally, we used a different strategy to assess the impact of negative advertising. In addition to our coders’ assessments of the candidates’ spots, we asked our respondents to tell us whether *they* thought the tone of the each candidates’ ads was on balance positive or negative. Respondents who recalled any ads were asked if they thought each candidate’s ads were “generally positive, generally negative, or is it hard to say?” Of those respondents willing to rate the ads, 60.5 percent found Beyer’s spots to be “generally negative,” and 46.3 percent considered Gilmore’s spots generally negative. This is consistent with our coders’ assessments of the candidates’ spots: 60 percent of the spots aired by Beyer were rated negative versus 41 percent of Gilmore’s ads (see Table 1).

We combined the ratings for each candidate’s spots into a single measure of perceived tone, which ranges from most positive (respondents who thought both candidates’ ads were generally positive), to most negative (respondents who thought both candidates’ ads were generally negative; see Appendix B for question wording and coding). This measure is, as one would expect, correlated with actual exposure to negative ads, although

(a hypothetical respondent exposed to a single negative ad and no others is treated the same as someone exposed to 1000 negative ads and no others), the pattern of results is consistent with our other findings: Exposure to a high proportion of negative spots—whether as a share of total spots or of positive spots only—has a positive effect on turnout (although not one that is significantly larger than its standard error). In contrast, exposure to a high proportion of positive spots has a negative effect on turnout (again, however, not one that is strongly significant).

¹⁷Following Ansolabehere and Iyengar, we averaged the responses to our two efficacy questions to create an internal efficacy scale running from 0 (least efficacious) to 1 (most efficacious). (We note, however, that the first question in our scale has more commonly been used as a measure of external efficacy; see Rosenstone and Hansen 1993.) In addition to exposure to negative ads, our OLS model included education, campaign interest, race, gender, age, strength of partisanship, newspaper reading, and weekday television viewing. We also estimated separate models for each of our efficacy questions and still found no effects of exposure to negative spots.

there are other factors affecting respondents' perceptions of tone.¹⁸ Using this perceptual measure, we once again found a stimulating effect of negativity (Table 3, Model B).

Controlling for the other variables in our model, respondents who considered both candidates' ads to be "mostly negative" were twenty-eight points more likely to vote than were those who considered the ads "mostly positive" (estimated turnout probabilities of .58 and .86). Once again, moving one standard deviation away from the mean would increase the probability of voting by seven points, from .74 to .81. When exposure is included in the model along with the perceptual measure, both variables have positive effects on turnout (Model C). We take these findings as additional evidence in support of the theoretical argument that negative ads can indeed stimulate political activity.

4. CONCLUSION

Until now, most survey-based work on the effects of political advertising has had to make do with blunt, error-prone measures of ad exposure, making it more difficult to detect effects of any sort (Bartels 1993). We have presented a new method, combining survey data with information about the distribution of campaign ads and a content analysis of spots actually aired, to derive an individual-level estimate of ad exposure. We demonstrated that this measure works well as an estimate of exposure. Importantly, we also found that neither contextual measures nor viewing habits alone is a sufficient measure of exposure to political advertising.

Using our combined measure of exposure to examine the vexing question of negative ads and voter turnout, we found no evidence to support the demobilization hypothesis. Exposure to negative spots did not reduce the likelihood that our respondents would vote. To the contrary, negative ads appear to stimulate voter turnout. This was also the case when we used a very different measure, subjective perceptions of the tone of campaign ads. Those who found the candidates' commercials to be generally negative had a greater probability of voting than those who were more sanguine about the tone of the ads.

Our findings are consistent with Lau's work on political negativity effects. In general, there is "greater weight given to negative information rela-

¹⁸Compared with respondents who saw no negative campaign spots, those exposed to the greatest number of ads provided average perceptual ratings that were .32 points higher (more negative) on the -1 to 1 measure of perceived tone, controlling for education, sex, race, television watching, and internal efficacy. Perceived negativity increased with education and decreased with efficacy; African Americans were significantly less negative in their evaluations of tone than were whites. At the level of the individual candidates' spots there is a detectable partisan bias in perceptions: Beyer's ads were rated more positively by Democrats, more negatively by Republicans; the opposite pattern held for Gilmore's commercials.

tive to equally extreme and equally likely positive information in a variety of information-processing tasks" (1985, 119). Lau offers two explanations for negativity effects: First, according to the "figure-ground hypothesis," negative information "may be perceptually more salient, more easily noticed, and therefore more readily processed" than positive information (1985, 121). Against a background of generally positive messages, negativity may simply stand out. Second, Lau offers a "cost-orientation hypothesis," suggesting that "people are more strongly motivated to avoid costs than to approach gains" (122). Lau finds that presidential evaluations involve both perceptual and motivational factors, while perceptual explanations alone account for negativity effects in congressional races. Both accounts appear to be plausible explanations for the negativity effects we find here, although further work is clearly needed in order to untangle these alternative hypotheses.

How do we account for the fact that our findings diverge so dramatically from what advocates of the demobilization hypothesis would expect? There are several important differences between the present study and the experimental work of Ansolabehere and his colleagues (1994, 1995); we certainly do not claim to have offered a replication here. First and most obviously, we have moved out of the lab and into a real campaign, where exposure to negative ads (our "treatment") took place over many weeks, rather than during a single visit. Second, our dependent variable was actual self-reported vote which, while certainly not error-free, is arguably a better measure of voting than reported vote intention, on which one must often rely in an experimental context. Finally, our study took place in a single southern state during an off-off-year gubernatorial election. It is possible—though we suspect quite unlikely—that the dynamics of campaign advertising simply function differently in Virginia. Further exploration of our combined measure of exposure in different settings, such as congressional and presidential races, is clearly required.

Additional work should also focus on how particular kinds of campaign ads—and particular forms of campaign appeals—are perceived by viewers and voters. Beyond the simple negative-positive-contrast typology we have used, and beyond the issue-trait distinction employed by Finkel and Geer (1998), much remains to be learned about what kinds of appeals citizens consider to be legitimate, and what they consider to be unfair or off-limits. Future work should explore these distinctions and bring more refined measures to bear on the stimulation and demobilization hypotheses.

Political campaigns have always been, in Finkel and Geer's words, "pitched battles" in which serious candidates trade serious charges. At a time when voter turnout is at its lowest in decades, our findings suggest that negativity may well have a salutary effect on electoral participation. Nevertheless, we are not calling for more negativity (and certainly not required negativity) in political advertising as a solution to the pervasive problem of

declining turnout. First, aggregate voter turnout is a multi-causal phenomenon and an increase in the number of negative campaign ads is unlikely to reverse other powerful, long-term trends. Indeed, turnout has continued to decline during a period in which negative ads have been on the rise (West 1997). Second, even if there were incontrovertible evidence that a dramatic increase in negativity could stimulate turnout at the national level, there may be normative concerns about the tenor of democratic discourse and the type of campaigns we want to encourage. For reasons having nothing to do with voter turnout, we may want to see less negativity in our politics.¹⁹

Still, the real world test of negativity and turnout presented here does have real world policy implications. Although we are not endorsing more negativity, our findings should give pause to those who would restrict or regulate the type of advertising that is allowed. There may be much that is wrong about the way our election campaigns are run; indeed, there may be much to decry about the tone of political advertising. Our findings suggest, however, that such criticism should not include the demobilizing effects of negative campaign advertising.

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APPENDIX A

Coding of Campaign Ads

To code the campaign ads, we enlisted the help of 149 undergraduates, forty-eight at the University of Virginia and 101 at Arizona State University. At ASU we conducted an order experiment in which half the coders saw the Beyer ads first, and half saw the Gilmore spots first. There were no detectable effects from this manipulation. We also collected data on the gender and partisanship of our coders. There were no significant gender differences (although men at UVa did tend to rate the Beyer spots somewhat more negatively than did women). Significant partisan differences emerged at UVa—where students were familiar with the candidates and had seen many of the ads during the campaign itself—but not at ASU: Democratic coders at Virginia rated Beyer's ads as significantly less negative than did Republicans and Independents (there were no differences among the Gilmore spots).

Our three-category classification scheme is similar to one employed in prior work (Ansolabehere et. al., 1994; Goldstein 1997; Jamieson, Waldman, and Devitt 1998). As noted above, we reserved the "contrast" category for ads that contained a fairly balanced distribution of positive and negative appeals. Ads that were predominately negative, with a token mention of the sponsoring candidate, were coded as negative (most

¹⁹But see Mayer (1996) for a defense of campaign negativity.

often as a "4" on the original five-point scale). Thus, it might be more accurate to think of this third category as "balanced" rather than "contrast."

For some purposes, one might wish for a more nuanced coding. It might be useful, for example, to distinguish between "trait" and "issue" messages (Kahn and Geer 1994) or to code "appeals" or "arguments" rather than taking the entire ad as the unit of analysis (Geer 1998; Jamieson, Waldman, and Sherr 1998). Finally, it would be interesting to distinguish between the text of an ad—the spoken or written message—and the audio and video imagery—the nonverbal cues that may be as important in communicating tone as what is read or heard. We leave these distinctions for future work (although we believe that taking the ad as the unit of analysis allows one to capture the impact of text and imagery).

In all, thirty-eight distinct television ads were aired during the Virginia campaign, twenty-two for the Gilmore campaign, sixteen for Beyer's. Of the thirty-one videotaped ads provided by the campaigns, only twenty-four actually aired. For these ads, we took the average of our student coder ratings. Despite the large number of coders, the coding was quite reliable: In fourteen of the twenty-four taped ads, more than 90 percent of the 149 students agreed on the coding of the spot.²⁰ In five of the remaining spots, more than two-thirds of the coders agreed on the coding. In all, there were only four spots in which less than a majority agreed on the same coding, and in each of these there was agreement among a plurality of at least 48 percent. Put simply, the vast majority of coders agreed on four-fifths of the ads, and there was strong plurality agreement on the remaining four spots.

The authors and a research assistant viewed the ads independently. Among these coders, there was perfect agreement in twenty-one cases (88 percent). In one of the three cases of disagreement, one coder rated an ad as "contrast" that the other two coded as negative or positive; in the other two cases, one coder rated negative or positive while the others coded contrast. In no case was there disagreement over whether spots were negative or positive. The mean "elite" coding of each aired ad on videotape agreed with the student average in twenty-three of twenty-four cases (96 percent).

In addition to the twenty-four videotaped spots provided by the campaigns, fourteen other ads were aired during the course of the election season. These ads were evaluated separately by the two co-authors, using the CMAG storyboards. The authors agreed with one another in eleven of these fourteen cases (79 percent; in each of the three cases of disagreement, one coder rated a spot as contrast; in no case was their disagreement over whether spots were negative or positive), and reached full agreement in a subsequent round of coding.

Comparing the elite storyboard and video coding for the twenty-four aired videotaped ads captured on video, each coder was consistent in at least twenty-one ads; in every case of inconsistency, the taped spot was rated as negative while the storyboard was rated as contrast (consistent with the hypothesis that the broadcast ad contains important cues that one would miss by reading text; even text accompanied by still pictures). Finally, comparing the elite storyboard and student video codes, at least one

²⁰Reliability was significantly greater among the forty-eight UVA students, 100 percent of whom agreed on the coding of four of the spots, and more than 90 percent of whom agreed on sixteen of the spots.

of the storyboard coders agreed with the mean student rating for all but one ad (which both coders rated contrast on paper but negative on video, as did the students). In three other cases, one coder agreed with the students in coding a negative or positive spot which the other coder saw as contrast.

APPENDIX B

Question Wording for Individual-Level Survey Data

Voter Turnout. Question Wording: "In talking to people about the election we find that a lot of people weren't able to vote because they weren't registered or they were sick or just didn't have time. How about you, did you vote in the elections this November?"
Coding: 1 if yes, 0 if no.

Education. Question Wording: "What is the highest level of education you completed? Did not complete high school; completed high school; some college but didn't finish; 2 year college degree; 4 year college degree or B.S.; some graduate work; completed masters or professional degree; advanced graduate work or Ph.D.; don't know?" Coding: 0 to 1 scale.

Campaign Interest. Question Wording: "I'd like to get a general sense of how much interest you have in the current campaign for Governor of Virginia. Would you say that you are very interested, somewhat interested, or not that interested in the campaign so far?" Coding: 0 to 1 scale.

Political Information: Question Wording: "We are interested in how well known some of our public figures are. Do you happen to know the names of the two U.S. Senators from Virginia?" [IF NECESSARY: "And who are they?"] Coding: 1 if two correct names given, .5 if one correct name, 0 if no correct name given.

Female. Recorded by interviewer. Coding: 1 if woman, 0 if man.

Age. Question Wording: "In what year were you born?"

Party Identification. Question Wording: "Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or something else?" (If Republican or Democrat) "Would you call yourself a strong (Republican/Democrat) or not very strong (Republican/Democrat?" (If Independent, other or no preference) "Do you think of yourself as closer to the Republican or Democratic party?" Coding: 0 to 1 scale (1= strong Democrat).

Strength of Party Identification. Coding: 0 if independent or apolitical, .33 if independent leaning toward a party, .67 if a weak partisan, 1 if strong partisan.

African American. Question Wording: "Finally, I am going to read a list of racial and ethnic categories. Would you tell me what category best describes you?" Coding: 1 if black or African American, 0 otherwise.

Television Viewing. Question Wording:

Thinking back to last week, about how many hours did you personally watch television on a typical weekday morning, from 6:00 to 10:00 AM?

How many hours of television did you watch during a typical weekday from 10:00 AM to 4:00 in the afternoon?

How many hours of television did you watch from 4:00 to 8:00 PM?

How many hours of television did you watch from 8:00 to 11:00 PM?

And how many hours of television did you watch from 11:00 PM until 1:00 in the morning?

Newspaper Reading. Question Wording: "How many days in the past week did you read a daily newspaper?" Coding: number of days.

National News Watching. Question Wording: "Again thinking back to last week, how many days did you watch a national news program on TV?" Coding: number of days.

Local News Viewing. Question Wording: "And how many days did you watch the local news on TV?" Coding: number of days.

Recall of Campaign Ads. Question Wording: "Do you recall seeing any campaign advertisements for Jim Gilmore on television this year? Do you recall seeing any campaign advertisements for Don Beyer on television this year?" Coded 1 if yes to either question, 0 if no.

Efficacy. Question Wording: "People like me don't have any say about what the government does." "Sometimes politics and government seem so complicated that a person like me can't really understand what's going on." Each question coded from 0 (strongly agree) to 1 (strongly disagree); then scores averaged.

Campaign/Party/Group Contact. Question Wording: "As you know, political organizations such as parties, campaigns and groups try to talk to as many people as they can to get them to vote for their candidate. Did anyone from an organization call you up or come around and talk to you about the election this year?" "Did you receive any mail asking you to support a particular candidate for office?" Coded 1 if yes to either question, 0 if no.

Perceived Tone. "Do you recall seeing any campaign advertisements for Don Beyer/Jim Gilmore on television this year? [IF YES] Would you say that the ads for Don Beyer/Jim Gilmore were generally positive, generally negative, or is it hard to say?" Each candidate coded 1 for negative, -1 for positive, 0 for hard to say or no ads recalled. Scores combined into a single five-point measure ranging from -1 (most positive perceptions) to 1 (most negative perceptions).

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