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# A Meta-Analysis of Political Advertising

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**Abstract**

Political advertising is one of the dominant media for reaching voters. Previous meta-analyses (Allen & Burrell, 2002; Lau, Sigelman, Heldman, & Babbitt, 1999) found little or no net benefit to negative versus positive ads. However, this finding does not reveal whether ads have effects (both or neither could be persuasive). A meta-analysis revealed that political spots increased issue knowledge, influenced perceptions of the candidates' character, altered attitudes, and affected candidate preference; influenced agenda-setting, and altered vote likelihood (turnout). One moderator variable was detected: The effect size for learning was larger for studies of students than non-students; however, the effect size for both sub-groups was significant. On the other hand, political ads had larger effects on attitudes for non-students than students.

Key Words: political television advertising, meta-analysis, issue knowledge, character evaluation, attitude, agenda-setting, campaign interest, vote choice, vote likelihood

### A Meta-Analysis of Political Advertising

The earliest presidential television spots were employed in the 1952 campaign between General Dwight Eisenhower and Governor Adlai Stevenson. Griese (1975) reveals that Eisenhower ads were broadcast in 40 of 48 states and that voters were exposed to four or five of these spots a day in 11 states. Reliance on this particular medium has only increased over time. Today, television spots are without question one of the most important components of political campaigns. West (1997) reported that “television ads are the single biggest expenditure in most major campaigns today” (p. 1). New records were set in the 2004 presidential campaign: During the general election (from March to November), TNSMI/Campaign Media Analysis Group reports that \$546.6 million was spent on presidential campaign advertising (TNS, 2004). Anderson noted that this “exceeds the \$198 million the ad monitor tracked during the entire 2000 campaign” (Anderson, 2004b, p. A17). Of course, candidates for office at all levels of government across the entire United States spent millions more on political advertising, increasing these amounts to staggering levels (\$730 million was spent on non-presidential campaign advertising in 2004; TNS, 2004).

These vast expenditures assure that candidate messages reach voters. Goldstein and Freedman (2002) reported that “overall in the year 2000, just under one million (970,410) political television advertisements were aired in the country’s top 75 markets” (p. 8). At the presidential level, almost 300,000 spots were broadcast in 2000. Comparing 1996 and 2000, “there was a full 82% increase in the number of ads aired in the presidential race, from 162,160 to 293,942 spots” (p. 8). The astronomical rates of increase continued in 2004: Over 675,000 presidential television spot airings were documented (Anderson, 2004a). Jamieson correctly observed that the dollars invested in television spots produce substantial audience exposure:

Political advertising is now the major means by which candidates for the presidency communicate their messages to voters. As a conduit of this advertising, television attracts both more candidate dollars and more audience attention than radio or print. Unsurprisingly, the spot ad is the most used and the most viewed of the available forms of advertising. (1996, p. 517)

One cannot but conclude that political television spots are a vital part of the modern political campaign and clearly deserve scholarly attention. Knowing what effects, if any, these ubiquitous messages have on voters is a very important question.

It should come as no surprise, then, that researchers have lavished a great effort of attention on televised political advertising (see, e.g., Ansolabehere & Iyengar, 1995; Benoit, 1999; Biocca, 1991a, 1991b; Diamond & Bates, 1993; Jamieson, 1996; Johnson-Cartee & Copeland, 1991, 1997; Kaid & Johnston, 2001; Kern, 1989; Schultz, 2004; Thurber, Nelson, & Dulio, 2000; West, 2001). However, only two meta-analyses have been conducted, both concerned with contrasting negative with positive advertising (Allen & Burrell, 2002; Lau, Sigelman, Heldman, & Babbitt, 1999). Lau et al. (1999) found that “Most of the effect sizes fall very close to the zero point, and about as many are below as above zero (p. 857). They conclude that the target of a political advertising attack “is liked less” but “this intended effect is counterbalanced by an even stronger and highly significant decrease in liking of (that is, a ‘backlash’) against the sponsor” (p. 857). Allen and Burrell (2002) also compared the effects of negative and positive information in political advertising, looking at effects on attitude toward a position, attitude toward a candidate (target of the information in the ad), attitude toward the ad’s

sponsor, and voting. They found smaller effects on attitude toward position ( $r = 0.088$ ), the target ( $r = .058$ ), and vote intention ( $r = .036$ ), with a larger (backlash) effect against the ad's sponsor ( $r = -.15$ ). This indicates no net benefit to the sponsor of negative advertising.<sup>1</sup> In each case the variance was heterogeneous, which could indicate the presence of moderator variables. Still, these results suggest that negative advertising hurts the sponsor more than the target.

An important limitation of these studies is that they contrast negative versus positive advertising. Failure to find significant differences (Lau et al., 1999) or finding relatively small effects outweighed by backlash (Allen & Burrell, 2002) could mean that neither positive nor negative advertising is particularly effective. However, it is also possible that both kinds of ads are persuasive, but neither type of ad is substantially more effective than the other. Determining which of these possibilities is the case requires meta-analysis of advertising studies that either include a control group or use a pre-test/post-test design.

The existing meta-analyses leave other questions, such as learning from ads, unanswered. To remedy this lacuna in the literature, this study will meta-analyze the research on political advertising to assess the effects of political advertisements without limiting itself to comparisons of negative versus positive advertising.

Meta-analytic research has clear advantages compared with traditional or narrative literature reviews. First, the act of cumulating previous research provides greater confidence in results (the effective sample size of a meta-analysis is the total  $n$  of all studies included). Furthermore, Rosenthal (1984) explained that:

There are many areas of the social sciences for which we do have the results of many studies all addressing essentially the same question. Our summaries of the results of these studies, however, have not been nearly as informative as they might have been, either with respect to summarized significance levels or with respect to summarized effect sizes. Even the best of reviews of research by the most sophisticated workers have rarely told us more about each study in a set of studies than the direction of the relationship between the variables investigated and whether or not a given  $p$  level was attained. (p. 10)

Thus, meta-analysis has the benefit of producing an average effect size, rather than focusing exclusively or primarily on the significance of results (the latter, of course, is dependent on sample size). Third, Arthur, Bennett, and Huffcutt (2001) argued that "We know that sampling errors tend to form a normal distribution with a mean of zero. . . . When one computes the mean

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<sup>1</sup> 2004 saw record levels of funding from non-candidate groups such as PACs and 527 groups. Although we cannot be certain that, for example, Senator Kerry will not receive backlash from ads sponsored by MoveOn.org which attacks President Bush or that there will be a backlash against President Bush for ads sponsored by Swift Boat Veterans for Truth, it is possible that attacks from third party ads do not have the same drawbacks as attacks made by the candidates in their own ads. Given the new laws, presidential candidates must clearly identify themselves (e.g., "I'm George W. Bush [or John Kerry] and I approve of this message") in their ads. That could mean that viewers are better able to identify which ads are from the candidates themselves. If so, backlash from negative non-candidate advertising is less likely to hurt the candidates than in previous years.

sample-weighted effect across studies in a meta-analysis. . . . the resulting value is largely free of sampling error” (p. 6). Thus, we will be able to quantify the size of any significant relationships. Finally, Wolf (1986) indicated that meta-analysis can be “helpful in highlighting gaps in the literature, providing insight into new directions for research, and finding mediating [sic] or interactional relationships or trends either too subtle to see or that cannot be hypothesized and tested in individual studies” (p. 55). Therefore, ample justification exists for meta-analysis of the effects of political advertising.

### **Purpose and Hypotheses**

This study investigates the potential effects of political advertising on voters. The functional theory of political campaign discourse (Benoit, 1999; Benoit, Blaney, & Pier, 1998) posits that citizens can base their vote choices on policy (issues) and character (image).

Accordingly, we propose seven hypotheses for our meta-analysis:

- H1. Political advertising increases knowledge of candidates’ issue stands.
- H2. Political advertising affects perceptions of the candidates’ character (e.g., personality, honesty, compassion, morality).
- H3. Political advertising affects attitudes toward the candidate.
- H4. Political advertising affects interest in the campaign.
- H5. Political advertising has an agenda-setting effect (influences perceptions of the relative importance of issues).
- H6. Political advertising influences vote choice (candidate preference).
- H7. Political advertising influences likelihood of voting (turnout).

We will code these studies to allow us to investigate potential moderator variables where possible.

### **Procedures**

We followed the suggestions by Stock et al. (1982) to locate and code the articles for our study. The first step is locating studies to include in the meta-analysis. We began with the meta-analyses on political advertising (Allen & Burrell, 2002; Lau et al., 1999). Then we consulted various indices (CommSearch, ComIndex, J-Stor) and Al Loudan’s useful webpage bibliography on political advertising (2005). Each time we located a pertinent study we examined its references for citations of other studies. Given our focus, investigating the effects of political advertising on voters, we excluded publications employing content analysis of ads (e.g., Benoit, 2001; Johnston & Kaid, 2002) which did not study the effects of advertising on voters. Our focus on voters led us to exclude a study of the effects of advertising on children (Atkin, 1977). We also excluded studies reporting the results of surveys of candidates (Tinkham & Weaver-Lariscy, 1991), political consultants and journalists (Perloff, 1991), or campaign workers (Sheinkopf, Atkin, & Bowen, 1973).

Next, we developed a coding sheet which listed the citation for the study being coded, dependent variables being studied, the sample size, the statistical results (e.g.,  $t$ ,  $F$ ,  $r$ ,  $\chi^2$ ) the nature of the study (students versus non-students, real ads for current candidates or other ads). We refined the coding sheet and coding procedures by jointly coding several studies. When question arose about coding a particular article all authors met to discuss and agree on the appropriate coding for that study.

A number of studies could not be included in the meta-analysis. For example, we did not include studies that employed regression unless they also provided zero-order correlations for

the variables of interest (Hunter & Schmidt [1990] explain why  $\beta$ s should not be included in meta-analyses). We also excluded studies that did not include an assessment of the political advertising. Ansolabehere and Iyengar (1995; Ansolabehere, Iyengar, Simon, & Valentino, 1994) report research which they claim demonstrates that political advertising depresses voter turn-out at the polls. However, one study failed to measure the nature (content) of political advertising; their method was to content analyze news coverage of the political campaigns they studied. Finkel and Geer (1998) noted that “*their measure of tone does not rely on a direct assessment of the actual advertisements that were used. . . the measure of ‘tone’ was constructed from a content analysis of newspaper and news magazine articles*” (p. 578; emphasis original).

It is important to note that our study could not use many of the studies employed in the previous meta-analyses. We were interested in determining *whether political advertising has effects*, not *whether certain kinds of ads were more persuasive than other kinds of ads*. So, studies that compared positive ads with negative ads (or ads comparing issues/policy versus image/character) were not included unless they included a control group or employed a pre-test/post-test design. Similarly, studies contrasting reactions to male and female candidates (e.g., Kaid, Myers, Pippis, & Hunter, 1985) could not be included for the same reason.

The studies in our sample measured several dependent variables, which we clustered into the variables we embodied in our hypotheses. For example, we decided to use a single character variable. However, some studies report data with multiple character questions about such personality traits as honesty, compassion, courage, morality, or sociability. When a study reported data from multiple questions about one of our dependent variables, we averaged their results. For example, if a study reported the effects of advertising on honesty, compassion, courage, morality, and sociability, we averaged the data on these five character traits into a single score for the character evaluation variable. Had we included the results for each question separately, that would have artificially inflated the  $n$  for the meta-analysis (that is, the  $n$  for that study would have been counted five times, once for each of the five character traits). Similarly, some studies reported the results for several questions about issue knowledge (e.g., learning the candidates’ positions on education, taxation, and the economy). Again, we averaged these questions into a single estimate of issue knowledge from that sample. However, when a publication reported data from more than one distinct group of subjects, the data from each group was treated as a separate study (i.e., these variables were *not* averaged). For the turnout variable, the effect sizes for studies that found that advertising decreases turnout were entered as negative values; effect sizes for studies that reported that advertising increases turnout were entered as positive values.<sup>2</sup>

### **Statistical Analysis**

We used the correlation coefficient Pearson’s  $r$  to cumulate these studies, as opposed to other measures of effect size (e.g., Cohen’s  $d$ ). Hunter and Schmidt (1990) recommended  $r$  as the most useful measure of effect size in meta-analysis. They also argued that  $r$ , rather than  $r^2$ , is the appropriate index of effect (see also Beatty [2002], who also argues that  $r$  is a better estimate

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<sup>2</sup> We would like to thank professor David Weaver for providing zero-order correlations from four studies using regression analysis (Drew & Weaver, 1991, 1996; Weaver & Drew, 1995, 2001).

of effect size than  $r^2$ ). Formulas for converting other statistics ( $t$ ,  $F$ ,  $\chi^2$ ) to  $r$  can be found in Wolf (1986). A table for converting proportions is provided in Glass, McGaw, and Smith (1981). A webpage is available to calculate  $r$  from means and standard deviations (Becker, 2004).

Calculation of the average effect size weighted each individual  $r$  by the number of subjects in the study. Hunter and Schmidt (1990) noted that if the population correlation is assumed to be consistent across all studies then “the best estimate of that correlation is not the simple mean across studies but a weighted average in which each correlation is weighted by the number of persons in that study” (p. 100). Similarly, Wolf (1986) indicated that “it can be argued that not all studies synthesized in a meta-analytic literature review should be given equal weight” (p. 39). All things being equal, studies with larger sample sizes should provide better estimates of the population parameter being measured.

Then we determined whether the effect size (mean weighted  $r$ ) was significantly different from zero. If an effect size is not significantly different from zero that indicates that political advertising does not have a significant effect on the dependent variable in question. We then tested the homogeneity of the variance of the effect sizes. A non-significant test ( $\chi^2$ ) indicates that the effect size variance is within the limits of sampling error and that the studies are from a homogeneous group (observed differences in effect size are likely due to random error). This suggests that it is unlikely that a moderator variable is present in the data. In contrast, a significant  $\chi^2$  indicates that the differences in effect sizes are larger than what would be expected from sampling error alone (Hunter & Schmidt, 1990). Heterogeneous variance in effect size could signal the presence of a moderator variable (or it could reflect problems, such as poor validity or low reliability, in some of the studies), so the average effect size when the variance is heterogeneous should be viewed cautiously (Allen & Burrell, 2002).

When we found heterogeneous variance, we looked for potential moderator variables where possible. We followed the procedures outlined by Hunter and Schmidt (1990), who indicate that “the studies in the meta-analysis can be subgrouped based on the moderator hypothesis, and the means of the subgroup meta-analysis can be tested for statistically significant differences” (p. 415). When a significant moderator is found (e.g., perhaps effect sizes in studies with student subjects are larger than in studies with non-students), studies can be divided into studies with different characteristics (e.g., those using student and non-student samples). Then we tested the  $r$ s for each sub-group of studies for significant differences. We adopted a criterion that each potential moderator variable group (e.g., students versus non-students) must include at least two studies. This meant, for example, that we could not test whether ads produced by candidates yielded different effect sizes from ads produced by the experimenter: Most variables in our sample did not include any studies using ads produced by the experimenter; no variable had more than one such study. Only a few of the studies in our sample used students; however three variables (learning, attitude, campaign interest) included two studies with data from non-students, so we were able to test this potential moderator variable on these three dependent variables.

## Results

First, we will report the results for each hypothesis, including the *chi-square* test for homogeneity of variance. Then we will consider potential moderator variables where the distribution of studies permit (e.g., if all studies of a given dependent variable use non-students, it is not possible to test for a difference between studies using students versus those using non-



student samples).

The first hypothesis concerns learning about issues from advertising. Thirteen sets of data with a total  $n$  of 4873 yielded a weighted mean effect size of  $r = .21$ , which was significant at  $p < .05$ . The *chi-square* test for homogeneity of variance was significant ( $\chi^2 [df=12] = 1483.87, p < .05$ ), which could indicate the presence of moderator variables. See Table 1 for a summary of the studies included in the meta-analysis.

We were able to test the possibility that the nature of the sample (student versus non-student) moderated this effect. The effect size for studies using students was .37 and for non-students it was .2. These two  $r$ s are significantly different, so students learn more from ads than non-students. However, the effect size for non-student samples ( $r = .2$ ) was still significant. *Chi-squares* for both groups of studies were significant (students: 15.46,  $p < .05$ ; non-students: 1170.74,  $p < .05$ ), so it is possible that other moderators exist. However, the distribution of studies in our sample did not permit tests for other potential moderators.

Hypothesis two concerns effects of ads on perceptions of candidate character. Six sets of data with a combined  $n$  of 2061 produced a weighted mean effect size of  $r = .19$ , which is significant ( $p < .05$ ). Again, the test for homogeneity of variance was significant ( $\chi^2 [df=5] = 113.6, p < .05$ ), which could indicate that moderator variables were present in these studies (as noted above, the sample of studies did not permit tests of moderator variables).

H3 predicted that ad viewing would influence attitude toward candidates. The weighted mean  $r = .17$  was significant at  $p < .05$ . Seven studies with a total  $n$  of 1113 combined to produce this result. The *chi-square* test for homogeneity of variance was significant ( $\chi^2 [df=6] = 324.79, p < .05$ ), which could indicate the presence of a moderator variable.

The nature of these studies permitted us to test whether sample was a moderating variable for attitude. The  $r$  for students was .082, whereas for non-students it was .23. These  $r$ s were significantly different ( $CI = .033-.26$ ), so ads generate significantly more attitude change in non-students than students. The effect sizes for students and non-students were both significant ( $p < .05$ ). The *chi-square* test for heterogeneity of variance indicated that both groups of studies were heterogeneous ( $\chi^2$  for students = 7.58,  $p < .05$ ;  $\chi^2$  for non-students was 177.24,  $p < .05$ ), so other moderator variables could be influencing these effect sizes.

Three studies with an  $n$  of 351 investigated agenda-setting effects from ads, the fourth hypothesis. The mean weighted effect size,  $r = .19$ , was significant. The test for homogeneity of variance was significant ( $\chi^2 [df=2] = 107.41, p < .05$ ), which could indicate the presence of moderator variables. However, the sample of studies did not permit tests of moderator variables.

Hypothesis five predicted that viewing ads would increase interest in the campaign. Nine studies with a combined sample of 4561 yielded an average weighted effect size of  $r = .22$ . This difference is significant at  $p < .05$ . The *chi-square* test for homogeneity of variance was significant ( $\chi^2 [df=8] = 152.24, p < .05$ ), which could mean that moderator variables exist in these studies.

**Table 1: Summary of Studies in the Meta-Analysis**

	Learning	Character	Attitude	Agenda-Setting	Interest	Turnout	Vote Choice
Ansolabehere & Iyengar, 1994						-.04 (1716)	



.05), which means that a moderator variable could be influencing these effect sizes (again, the nature of these studies did not allow us to test for potential moderators).

### **Implications**

We must keep in mind the fact that potential moderator variables could be operating in these studies (e.g., ads for different office could have different effects). However, the distribution of studies in our sample did not permit us to investigate those other potential moderator variables. Nevertheless, we can draw several tentative conclusions on the basis of this meta-analysis. First, Functional Theory posits that campaign messages have two topical dimensions, policy (issues) and character (image) and therefore two potential areas of influence on voters. Cumulating the results of the studies in this sample indicates that political television advertising has significant effects on both of these factors: learning about issues ( $r = .21$ ) and on perceptions of character ( $r = .19$ ). Not surprisingly, these messages also have a significant effect on attitudes toward the candidates ( $r = .17$ ). There was also an agenda-setting effect in the studies in our sample. Advertising stimulates interest in the political campaign ( $r = .22$ ). Finally, ads appear to influence vote choice ( $r = .19$ ) and likelihood of voting (turnout). Note that because we do not contrast positive and negative ads, the latter finding does not contradict the demobilization thesis (Ansolabehere & Iyengar, 1995).

The total number of studies investigating these dependent variables ranges from 2 (voting) to 12 (learning). Similarly, the total number of subjects providing data on these variables ranges from 349 (agenda-setting) to 8266 (turnout). The number of studies and subjects must be kept in mind when interpreting these results (i.e., we should keep in mind that the conclusions for agenda-setting and vote choice must be considered more tentative than other conclusions). For example, although both results are significant, we should have more confidence in the conclusion about learning (with 13 studies and a sample of 4873) than, say, on agenda-setting (with 3 studies and a sample of 351). Clearly, more work is needed, particularly in the areas in which few studies could be employed in this meta-analysis.

This study also provides insight into the magnitude of effect sizes for these variables. Most of the  $r$ s are around .2 (.17-.22). However, the effect of viewing television spots on turnout is much smaller ( $r = .07$ ). Thus, we now have a better idea of the size of the relationships at work in television spot effects.

The nature of the sample was a significant moderator for effect sizes for two variables: learning and attitude change. Studies using students had larger effects on learning (although both types of samples had significant effects on learning). It is possible that their experiences as students help these participants learn more from ads than non-students. On the other hand, non-students experienced larger effects on attitudes than students. It seems odd that television spots should have greater effects on learning but smaller effects on attitudes for students than non-students. This could be due to McGuire's (1969) compensation principle: He postulated that some characteristics of receivers could "have opposite effects on influenceability via the reception [learning] and the yielding [attitude change] mediators" (p. 244). Furthermore, research makes it clear that learning does not necessarily lead to attitude change (Love & Greenwald, 1978). Thus, whether subjects are students or not appears to influence the size (but not the direction) of the relationships—and this moderator variable can both increment and diminish the size of the relationship.

We can compare these results with the findings of a recent meta-analysis of the effects of

watching another presidential campaign message form, presidential debates (Benoit, Hansen, & Verser, 2003). Available studies allowed four dependent variables to be examined in both studies. Both meta-analyses found that watching these campaign messages enhanced issue learning, influenced character perceptions, altered agendas, and affected vote choice. Thus, we can see several important similarities across campaign media in presidential message effects.

The review of research on the effects of presidential television spots conducted for this meta-analysis allows us to make some observations about that work. First, it is unfortunate that a number of studies could not be included because of a lack of complete statistical reporting. Some studies reported *means* without *standard deviations* (and no reports of *t* or *F* tests). Furthermore, few studies used scales; single-item measures of dependent variables were quite common. This meant that the effect sizes could not be corrected for measurement error. Third, although regression is a perfectly valid form of statistical analysis, arguments have been made against using the results of regression in meta-analysis (e.g., Hunter & Schmidt, 1990). We encourage those who use regression to include reports of zero-order correlations to facilitate meta-analysis. Finally, although two prior meta-analyses did not find differences in the effect sizes of students and non-students in political campaigns (Benoit et al., 2003; Lau et al. 1999), the study reported here found that the effect size for learning from television spots was higher for students than non-students, whereas the effect on attitudes was smaller for students than non-students.

### Conclusion

Televised political advertising is widely used by candidates; as noted above, \$545 million on presidential and \$730 million on non-presidential advertising in 2004. So, with good reason, TV spots are often studied by scholars. We know that there is little net advantage to negative versus positive ads (Allen & Burrell, 2002; Lau et al., 1999). The meta-analyses we report here confirmed that political ads have significant effects on viewers. These messages are capable of enhancing issue learning, influencing perceptions of the candidates' character, affecting attitudes toward candidates, stimulating interest in the campaign, and influencing vote choice. The data do not indicate that political advertising has an effect on agenda-setting or turnout. Studies conducted on students tend to show larger effects on learning and smaller effects on attitude change (and nature of the sample did not influence campaign interest). However, television spots had significant effects on learning and attitudes for student and non-student samples alike.

This study does have limitations. Unfortunately, few studies were available to be cumulated on some variables (particularly agenda-setting and vote choice), so there is a special need for more work in these areas. Furthermore, we urge researchers and editors to make certain that research reports contain the necessary information to enable future meta-analysis (including reporting zero-order correlations when regression is employed for statistical analysis). Finally, the effect sizes were heterogeneous, which could indicate the presence of other moderator variables in these studies. More studies that can be cumulated in meta-analysis would yield greater confidence in conclusions and better estimates of the size of relationships between TV spot viewing and the various dependent variables.

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\*supplied data for the meta-analysis