Partisan mail and voter turnout: results from randomized field experiments

A.S. Gerber *, D.P. Green, M. Green

Department of Political Science, Yale University, 77, Prospect Street, P.O. Box 208209, New Haven, CT 06520-8209, USA

Abstract

Political campaigns currently make extensive use of direct mail, particularly in state and local races, yet its effects on voter behavior are not well understood. This essay presents the results of large-scale randomized field experiments conducted in Connecticut and New Jersey during state and municipal elections of 1999. Tens of thousands of registered voters were sent from zero to nine pieces of direct mail. The target populations included party registrants with a strong history of voter participation, independents, and a random subset of registered voters. Our results indicate partisan campaign mail does little to stimulate voter turnout and may even dampen it when the mail is negative in tone.
© 2002 Published by Elsevier Ltd.

Keywords: Campaigns; Experiment; Voter turnout; Direct mail

1. Introduction

Recent decades have witnessed a dramatic increase in both the amount of money spent on campaigns and the professionalism with which those campaigns are conducted. Specialists in campaign management and mass communication perform tasks that had formerly been relegated to parties and campaign activists increasingly. Nowhere is this transformation more evident than in the use of direct mail by political campaigns. Before the advent of computers and commercial firms equipped to print and distribute mass mailings, this form of campaign communication was scarcely mentioned by scholars charting the rise of professional campaign tactics (Kelley,

---

* Corresponding author. Tel.: +1-203-432-5232; fax: +1-203-432-3296.
  E-mail address: alan.gerber@yale.edu (A.S. Gerber).

1956; Nimmo, 1970; Broder, 1971). By the 1980s, direct mail was viewed as one of the hallmarks of a professional campaign, along with polling and communication via electronic media (Sabato, 1981).

Even candidates and campaign consultants who might otherwise aspire to conduct old-fashioned face-to-face campaigns concede that direct mail is an indispensable method for reaching voters in large electoral districts (Simpson, 1996). Mail is also the preferred medium of communication in state and local races, where the constraints of geography and financial resources often make television advertising impractical. Darry Sragow, manager of numerous statewide and legislative campaigns, testified that

> [E]very Assembly race relies on mail if nothing else. Because certainly in urban districts that's about the only medium we can employ practically. And we would want to do a minimum of five pieces of mail to anyone who has to be persuaded. It might be a couple of pieces of mail to reinforce the base, to motivate the base. But to someone who is genuinely in play, we would want to do at least five pieces...for the voter to know that the candidate exists. And then more to persuade the voter. (California Prolife Council PAC vs. Fair Political Practices Commission, 2000: 945).[1]

The focus of the present research is on the way that direct mail affects the participation rates of voters. Although direct mail campaigns may be purchased and crafted with the intention of persuading voters, they may also have the effect, intended or not, of altering rates of voter participation. The sole experimental study to examine the effects of partisan campaign mail in an actual campaign reported large, though statistically insignificant effects on voter turnout (Miller et al., 1981). Survey data from the American national election study (ANES) also show a strong correlation between direct mail and voting. The ANES surveys between 1978 and 1994 that asked about direct mail seem to suggest that mailings produce very large turnout increases. Those who report receiving mail from just the incumbent reported a 72.2% ($n = 6019$) turnout rate, compared to a 66.9% ($n = 160$) turnout among those who received mail from the challenger only. Those who reported getting mail from both challenger and incumbent reported an 81.4% ($n = 1344$) turnout rate. In contrast, those getting no mail voted at a rate of just 55.7% ($n = 998$). Although these results cannot tell us whether direct mail stimulates voting or campaigns target likely voters, they warrant further examination of the possible mobilizing effect of campaign mail.

Other lines of research in political science also point to the possible mobilizing effects of campaign communications. Cross-sectional studies of turnout patterns in US House elections suggest a positive relationship between turnout and the volume of campaign spending (Cox and Munger, 1989). Perhaps campaign activity piques

---

[1] The importance of mail is also emphasized in recent work on the role of campaign consultants in modern campaigns. In one study, more state party executive directors described 'direct mail as a critical' function performed by outside consultants than any other campaign function (e.g., polling, fund-raising). For more details, see Kolodny, 2000: 119.

voter interest in the election. Yet, there remains the mystery of why increased levels of campaign spending have not led to increased rates of voter participation. Arguably, as the volume of campaign spending has increased, the tone of campaigns has become more negative, putting off some voters and lowering turnout (Ansolabehere and Iyengar, 1995). Whether demobilization is a deliberate campaign strategy or an unintended by-product of campaign rhetoric, the hypothesis remains that campaigns alter the voting proclivities of the electorate.

The study of direct mail also provides insights into how the changing character of campaigns has affected voter participation over time. Increasing reliance on impersonal forms of communication with voters—television, direct mail, commercial phone banks—has arguably contributed to declining rates of voter turnout. Gerber and Green (2000) found that nonpartisan get-out-the-vote appeals delivered in person stimulate voter turnout far more than comparable nonpartisan appeals delivered over the phone or by mail. They reason that the decline in canvassing by parties and nonpartisan organizations (Putnam, 2000) contributed to the long-term decline in US voter turnout rates since the 1960s. Although the proportion of voters who are exposed to campaign appeals has remained more or less constant over time (Rosenstone and Hansen, 1993), the electorate is now exposed to messages that are communicated in ways that have less power to mobilize. By examining the mobilizing effects of direct mail, the present study serves to corroborate these qualitative distinctions among different forms of campaign contact.

Our experiments investigate whether the campaign mail increases turnout and whether the effects of mail vary depending on the content of the messages and the target audience. The effects of mail on voter turnout were assessed through randomized assignment. Mailing lists were randomly divided into treatment and control groups. These treatment groups received mailings varying in number and content, with some voters receiving as many as nine mailers during the final weeks of the campaign. Using voting records, we compared the turnout rates for treatment and control groups in order to ascertain the marginal impact of each type of mailer. Unlike survey-based studies, ours did not rely on subjects to tell us whether they received any mailings or voted. Moreover, the fact that our experiment sent out mail on a random basis obviates the concerns about spuriousness that surround observational studies.

This essay begins by estimating the volume of direct mail in political campaigns. Next, we describe the experimental design in both sites and the political context in which it is embedded. Power calculations are performed for each experiment and for all of the experimental results combined. The results for each site are presented, indicating that partisan direct mail has little mobilizing effect. We conclude by discussing the implications of our findings for theories explaining why turnout has declined over time.

2. How much direct mail?

Before delving into an investigation of direct mail's influence on voting behavior, it is useful to get some sense of how prevalent direct mail has become. If direct

mail were ubiquitous, even small effects on turnout might stimulate large numbers of people to go to the polls. To our knowledge, however, the total volume of direct mail has not been estimated. This section suggests two ways of estimating the quantity of mail, both of which produce similar figures.

Rough estimates can be constructed using overall campaign spending levels and existing studies of campaign expenditure patterns for certain offices. All congressional campaigns spending over $5000 are required to file detailed reports listing campaign disbursements. Fritz and Morris (1990) used these reports to calculate, among other things, the percentage of campaign spending that candidates used to purchase political mail in the 1990 House and Senate elections. They found that political mail accounted for approximately 11% of all spending in House elections and slightly over 3% of spending in Senate elections. Since overall spending totals for Senate and House elections are approximately equal, political mail was 7% of congressional campaign spending.[2] Spending allocation data are not easily available for presidential, or state and local campaigns. The House–Senate contrast would seem to imply that presidential candidates rely proportionally less on direct mail, while local and state candidates may spend proportionally more, perhaps 15% (or more) of their approximately $1 billion of expenditures. If we estimate that 10% of the estimated $3 billion spent on campaigns in 2000 was spent on direct mail, approximately $300 million was spent on direct mail in 2000.[3] At a cost of 50 cents per mail piece, this implies approximately 600 million pieces of political mail were sent during the 2000 campaign.

Another estimation approach uses quarterly data from the US Postal Service, which reports total mail volume and volume in each of several categories of mail. As one might expect, these quarterly data rise and fall according to an annual cycle that peaks during the Christmas season. They also follow a biennial election cycle whereby the fall quarter of even numbered calendar years display higher volumes of standard mail. Using time-series regression, we estimated the following equation using quarterly data from Fall 1981 through Spring 2001:

$$Y_t - Y_{t-4} = \alpha + \beta X_t + u_t$$

where, Y_t is the volume of mail, X_t equals 1 for the Fall quarters of even-numbered (election) years, -1 for the Fall quarters of odd-numbered calendar years, and 0 otherwise. Thus, 2β is the increment of mail attributable to the presence of an election. The disturbance term u_t is assumed to be AR(1) and MA(4).[4]

---

[2] Fritz and Morris's figures separate campaign mail from campaign fund raising appeals.

[3] The estimate of $3 billion dollars for all campaigns comes from Public Campaign, a campaign finance reform advocacy group. It is qualitatively similar, after adjustments for population and inflation, to the figures provided by Herbert Alexander for earlier years.

[4] Inspection of the correlograms for the residuals from this specification shows them to be white noise (Table 1). We chose to use a differenced dependent variable based on a preliminary analysis using levels, which suggested that mail volume may be a unit root process.

Table 1
Time–series regression analysis of mail volume, quarterly data, 1982–2001

	Third class mail	Carrier route mail	First class mail
Constant	653	136	543
	(150)	(105)	(94)
Election year	399	176	−70
	(139)	(85)	(110)
AR(1)	0.77	0.84	0.56
	(0.08)	(0.06)	(0.10)
MA(1)	0.45	0.59	0.22
	(0.11)	(0.09)	(0.12)
Adjusted R-squared	0.52	0.65	0.26
Q-statistic for residuals at lag-12	$p = 0.42$	$p = 0.11$	$p = 0.75$

Total $N = 79$ (74 when lagged observations are lost). *Source*: US Postal Service quarterly reports.

Notes: Election Year is scored 1 during the Fall quarter of even numbered-calendar years, −1 during Fall quarters of odd-numbered calendar years, and 0 otherwise. In all regressions the dependent variable is $Y_t - Y_{t-4}$.

As Table 1 indicates, when Y_t is defined as the total volume of Standard Mail[5] in millions of pieces, this regression estimates that $\beta = 399$ with a standard error of 139 ($p < 0.01$, one-sided). Consistent with the interpretation that political mail is producing this biennial jump is the fact that we find the analogous results for 'enhanced carrier route standard mail,' the subclass of mail most commonly used by direct mail houses, but not for first class mail, which is seldom a vehicle for direct mail.[6] In sum, postal data imply that approximately 800 million pieces of election-related direct mail go out between early September and early December during even-numbered years.[7] Taken together, our two types of estimates place the volume of direct mail from all candidates, organizations, and parties in the neighborhood of 600–800 million pieces. The question now is how many additional voters go to the polls on account of this mail.

3. Experimental design

Randomized experiments provide a powerful means by which to discern the causative role of direct mail. Thanks to campaigns that were willing to allow us to ran-

---

[5] Standard Mail (formerly known as third-class) is defined as mail weighing less than 16 ounces, including circulars, pamphlets, direct mail, and merchandise.

[6] Enhanced carrier route standard mail (formerly known as third-class, bulk rate carrier presort) comprises mail pieces weighing less than 16 ounces, prepared in carrier route sequence.

[7] This number may understate the flow of direct mail because a couple of states and many municipalities hold elections during odd years, dampening the contrast between mail volume during election years and off-years. On the other hand, the volume of mail during the campaign season consists of both direct mail aimed at influencing voters and other sorts of political mail, such as fund-raising letters.

domize their direct mailing lists, we were able to perform these experiments on a very large scale. Moreover, by relying on voter turnout records rather than surveys, the problems of sample attrition and misreports were avoided. Due to the difficulty of orchestrating these experiments, they occur where the opportunity presents itself rather than through a process of sampling randomly over geography and types of elections. The experiments reported here were conducted during a Connecticut mayoral election and an election for the New Jersey state legislature. These campaigns were broadly typical of those that rely on direct mail, as none of the candidates had the resources to conduct expensive television campaigns. Nevertheless, these studies should be viewed as a first step in the accumulation of experimental case studies.

3.1. Connecticut mayoral election

The mayoral election was expected to be relatively close.[8] For the Democratic mayoral candidate, who was the challenger, the 'campaign' consisted of a nine piece mail program. The campaign did not mail material to all households but only those in a targeted 'mail universe' that was constructed using party registration and turnout history. The sample universe for the experiment consisted of all households that satisfied at least one of the following criteria: (1) there was a registered Democrat at the address; (2) there was a registered 'unaffiliated' at the address who voted in either the 1998 general election, the 1997 municipal elections or the 1995 municipal election; (3) the household contained a voter who registered after November 1998. There were 9900 households, which satisfied at least one of these criteria. Of these households 1100 were randomly assigned to a control group that received none of the mailings, leaving 8800 households that received nine pieces of campaign mail for the treatment group.

Text from the challenger's campaign mailings is provided in the appendix. The incumbent mayor ran a 'positive campaign' based on his accomplishments in office. By the standards of the subject community, the challenger waged a negative campaign. The challenger attacked the incumbent as an incompetent, wasteful manager who was looking out for the special interests. As is common in such campaigns, the negative mailings were sandwiched between more positive mailings, so that the first and last pieces were upbeat assessments of the sponsoring candidate, which presumably established and then restored a good feeling toward the sponsor of the hard-hitting mail. In this case, the first three pieces described the challenger's work on education and crime. The next five pieces hit the incumbent on taxes and development, culminating in mailings that were entirely negative and made no mention of the challenger. The final mailing described the challenger's long residency in the town, accomplishments and priorities, and did not mention the incumbent. The tone of this campaign was not lost on newspaper reporters, who described it as negative

---

[8] The incumbent won re-election by a margin of approximately 8%. The mayoral election was by far the most important and active contest on the ballot.

after the election. A more detailed description of each of the nine pieces of mail is included in the appendix.

In addition to these direct mailings, voters received mail from other campaigns. The town Republican chair revealed after the election that the opposing mayoral candidate sent five mailings to all households containing a registered voter. This Republican candidate also placed some television ads on the local cable television channel. The Republican mailings began arriving approximately two weeks before the election, whereas the Democratic mailings began about three weeks before the election. In addition to the mailings described earlier, all households with at least one registered voter got a single postcard from the Democratic candidate approximately 1 week before the election. Thus, the control group in our experiment received one Democratic and five Republican mailings.

3.2. New Jersey assembly race

The second set of partisan experiments assessed the effect of campaign mailings in a New Jersey assembly race. The election was expected to be a reasonably safe re-election of the Democratic incumbents.[9] The campaign by the Democratic incumbents (there were two incumbents since New Jersey has double member assembly districts, and the incumbents conducted a joint campaign) was a series of six mailings. The targeting scheme used by the campaign was slightly more complicated than that used in the Connecticut mayor's race. Mirroring the structure of the campaign's targeting strategy, there were three distinct samples of households. Sample 1 consisted of 6354 households containing Democratic voters with a record of high turnout rates. Sample 2 consisted of 10,200 households with the remaining Democrats and those Independent voters who voted in some, but not most recent elections. Sample 3 consisted of 3000 district households that did not fall into either sample 1 or 2. This sample included Republicans and low turnout Independents.

The nature of the direct mail campaign varied across the three samples. Among high turnout Democrat households in sample 1, 5654 received the first two and the last two mailings, and 700 households were randomly excluded from the mailings. For sample 2 (other Democrats, Independents) 9200 households got all six pieces of mail, while 1000 households were randomly excluded from the mailings. For sample 3, the 3000 households were divided into three groups: 1000 households received six mailings, 700 got the first two and the last two mailings, and 1300 households received no mailings.

The Democratic incumbents ran a positive campaign, touting the incumbents' legislative activities and support of broadly popular causes. The challengers were not mentioned by name in any of the mailings, even for purposes of comparison. The first two mailings focused on efforts by the incumbents to improve the lives of children, with a discussion of legislative initiatives in education and children's health.

---

[9] The Democratic incumbents both won re-election with about 65% of the vote. The assembly race was the only contest for state office. There were also a few county offices on the ballot.

The third piece described the incumbents' support of 'sensible gun control,' a very popular cause in the district (which combines affluent suburbs and lower income urban neighborhoods). The fourth piece supported protection of open spaces and attacked 'developers,' and the fifth returned to the issue of gun control. The final piece supported patients and doctors, while criticizing HMOs and 'big insurance companies.' Overall, the campaign was very positive, with criticism reserved only for very unpopular, impersonal targets. The only attack on the opposition candidates was oblique: piece three stated that 'unfortunately, some Republicans want to weaken New Jersey's gun laws and put our families at risk,' a vague and qualified critique. Pieces one, two, five, and six referred to the candidates who sponsored the ad as 'Democrats,' while pieces 3 and 4 just said they were fighting for New Jersey's families.

Less detailed information is available about the New Jersey campaigns. We were unable to obtain a precise description of the Republican campaign efforts, though Democratic sources said that the challengers, who were soundly defeated, did not appear to be very active. Unfortunately, we do not know how much, if any, background mail was sent to households by other campaigns.

4. Power

The power of an experiment is defined as its probability of rejecting a null hypothesis given some specified effect size. The null hypothesis for the New Jersey experiments is that mail does nothing to increase voter turnout, which implies a one-tailed hypothesis test. For the Connecticut experiment, which took place in the context of a negative campaign, the null hypothesis is that mail has no effect, warranting a two-tailed test. The question then is whether these experiments have the capacity to reject these null hypotheses for different effect sizes.

Table 2 presents power calculations for two different effect sizes. First, power is calculated based on Gerber and Green's (2000) finding, an experiment involving nonpartisan mail, which found that turnout increased by an average of 0.5 percentage-points per mailer. Two of the experiments, the negative mayoral election and the campaign targeting infrequent New Jersey voters, are found to have very high power under this scenario.[10] Second, power is calculated based on a putative effect of half this size, 0.25 percentage-points per mailer. Each of the experiments is diminished in power, but taken as a whole, they are still quite telling. The three New Jersey experiments, for example, have a joint power of over 0.5. The quite large Connecticut mayoral experiment retains a power of 0.51 using a two-sided test. In sum, the sample sizes and number of mailings in these experiments are sufficiently

---

[10] For simplicity, the calculations for the pooled New Jersey experiment assume that all households in the treatment group received 5.27 mailings, which is the average number of mailings sent to households in the treatment groups.

Table 2
Power calculations for partisan direct mail experiments

Site location	New Jersey Prime Democrats	New Jersey other Democrats and Independents	New Jersey other registered voters	Connecticut Mayoral Race	New Jersey pooled sample
Expected treatment effect	0.005	0.005	0.005	0.005	0.005
Number of mailers sent	4	6	5.18	9	5.27
Fraction assigned to treatment group	0.89	0.90	0.57	0.89	0.86
Total N	11158	19741	4300	19848	35199
SE	0.015	0.012	0.015	0.011	0.008
Power for a one-sided 5% test	*0.37*	*0.81*	*0.52*	*0.99*	*0.96*
Expected treatment effect	0.0025	0.0025	0.0025	0.0025	0.0025
Number of mailers sent	4	6	5.18	9	5.27
Fraction assigned to treatment group	0.089	0.90	0.57	0.089	0.86
Total N	11158	19741	4300	19848	35199
SE	0.015	0.012	0.015	0.011	0.008
Power for a one-sided 5% test	*0.16*	*0.35*	*0.21*	*0.63*	*0.53*

large to pin down the mobilization effects of direct mail with a high degree of accuracy.

5. Results

Given the massive number of subjects in each of our experiments, it is helpful at the outset to draw a distinction between substantive and statistical significance. Given a sufficiently large sample, even tiny differences between treatment groups may prove statistically significant, that is, greater than could be attributable by chance. Substantive significance is more difficult to pin down, but it may be helpful to think in terms of the implied cost per additional voter. A β percentage-point effect per mailing to N people implies that K mailings mobilize $\beta KN/100$ additional votes.

Defining the marginal cost per mailer to be c, the voters per dollar stimulated by a mail campaign is $100c/\beta$. If the cost of each piece of mail (with postage) were $0.50, a direct mail campaign in which 10,000 people are sent four pieces of mail costs $20,000, generates 400β voters through mobilization, at $50/\beta$ per vote. The magnitude of β therefore gives us important hints about the total number of voters who may be mobilized by direct mail.

Table 3 presents each of the four experiments. The first experiment examines the effect of four mailings on 'Prime Democrats,' that is, Democrats with a history of frequent voting. Ex ante, it is unclear whether this group's motivation would be enhanced further by partisan mail or instead whether their level of motivation is so high that campaign messages have no additional effect. We find that the four mailings increase turnout from 63.7 to 65.6%, or approximately 0.5 percentage-points per mailing. Fisher's exact test shows the one-sided p-value of this difference to be 0.10. This result leaves us with some sense that mail increases turnout, although one cannot rule out the null hypothesis that the gap is due to sampling variability.

The second experiment involves Democrats and Independents with lower voting propensities. As expected, the control group in this experiment voted at rates that are roughly 10 percentage-points lower than the control group comprised of Prime Democrats. We find no difference whatsoever in the voting rates of the treatment and control groups, both of which were 54.2%. The enormous size of these groups, 1925 and 17,816, respectively, enables us to build a fairly tight confidence interval around this result. The 95% confidence interval suggests that the true responsiveness per mailer ranges from -0.2 to 0.2.

A regimen of four or six mailings seemed to produce a mild increase in turnout among unaffiliated and Republican voters. We find 23.1% turnout among the control group, which received no mail. Those who received four mailings voted at a rate of 23.5%. This rate climbed to 24.1% among those receiving six mailings. The smaller sample sizes in this experiment produce greater statistical uncertainty. A χ^2-test of the three mailing categories proves insignificant ($\chi^2_{(2)} = 0.49$, $p > 0.10$) as does a

Table 3
Voter turnout rates by number of mailings received (sample sizes in parentheses)

	Number of mailings							
	0	1	2	3	4	6	8	9
1999 New Jersey, Partisan, Prime Democrats	63.7 (1203)				65.6 (9955)			
1999 New Jersey, Partisan, other Democrats and Independents	54.2 (1925)					54.2 (17,816)		
1999 New Jersey, other registered voters	23.1 (1863)				23.5 (990)	24.1 (1447)		
1999 CT Mayoral, Partisan with negative tone	56.1 (2155)							55.0 (17,693)

regression of voter turnout on the number of mailings ($b = 0.16$, SE $= 0.24$, $p > 0.10$).

Taken as a whole, the New Jersey data are suggestive, in that two of the three experiments suggest a positive turnout effect (Table 4). Still, pooling the data from all three experiments into a single experiment does not allow us to reject the null hypothesis that direct mail had no positive influence on voting using a one-tailed test. We regressed turnout on the number of mailings with dummy variables marking each of the samples (omitting the intercept). The slope indicating the returns per mailing was 0.12 with a standard error of 0.15 ($p > 0.10$). Our best guess based on 35,199 observations is that it takes eight mailings to raise the probability of voting by one percentage-point.

Partisan mail's mobilizing effects may not only be small but contingent on the tone of the campaign. Turning to the negative mayoral campaign, we find that those who received no mail turned out at a rate of 56.1%, as compared to 55.0% among those who received nine pieces of direct mail. The sign of the relationship between direct mail and turnout is at least consistent with the hypothesis that negative campaigning depresses voter participation. Still, one must interpret this finding with caution. Although the number of observations is 19,848, this reduction in turnout observed in the Connecticut experiment falls short of conventional levels of statistical significance using either a one-tailed or two-tailed Fisher test ($p > 0.05$). Comparing the findings in Connecticut and New Jersey, we can just barely reject at the 0.1 significance level the null hypothesis that the positive and more negative campaign mailings had the same effect on turnout, if we use a one-sided test.

Nevertheless, this exercise puts useful bounds on the magnitude of the turnout effects associated with direct mail. Taking all of the New Jersey experiments together, we find a 95% confidence interval for the marginal impact of each piece of mail that ranges from -0.16 to 0.41, while the experiment in Connecticut suggests

Table 4
Predicting voter turnout

	OLS estimate	Probit estimate
Number of mailings	0.12	0.004
	(0.15)	(0.004)
Interaction: CT∗number of mailings	−0.25	−0.006
	(0.19)	(0.005)
New Jersey Prime Democrats	8.85	0.23
	(1.26)	(0.03)
New Jersey other Democratic/Indep. households	−2.57	−0.07
	(1.36)	(0.04)
Other New Jersey voters	−32.93	−0.89
	(1.36)	(0.04)
Intercept	56.1	0.16
	(1.05)	(0.03)

Note: For both regressions the sample size is 55,047.

an effect ranging from −0.37 to 0.13. If partisan mail has a mobilizing or demobilizing effect, this effect is very subtle. The upper bound estimate of 0.41 implies that 800 million pieces of direct mail generate at most 3.3 million votes. A more moderate estimate based on the New Jersey slope estimate of 0.12 puts this figure at just under 1 million votes. The maximum negative effect on voter turnout based on the lower bound estimate of −0.37 implies a decline in turnout of approximately 3 million votes.

6. Discussion

By virtue of their scope and magnitude, the experiments presented here shed light on a number of ongoing substantive debates. First, the results bolster the claim that the overall decline in voter turnout witnessed in US national elections since the 1960s (Rosenstone and Hansen, 1993) is linked to the changing manner in which campaigns are conducted. Face-to-face canvassing activity diminished over time, replaced largely by direct mail, commercial phone banks, and electronic communication. Gerber and Green (2000) contend that the old-fashioned modes of campaigning were more effective at mobilizing voters than the techniques that are now in widespread use. Their study, however, focused only on the relative effectiveness of nonpartisan appeals delivered in person, by mail, or over the telephone. Thus, their evidence leaves open the question of whether partisan appeals are more effective in mobilizing voters. If true, the declining rates of turnout associated with a shift away from personal forms of mobilization could be offset by the growth in partisan direct mail. Our results cast doubt on this possibility. We find partisan mail to have negligible positive effects on voter turnout, effects that are at any rate too small to detect with sample sizes in the tens of thousands.

The experimental results concerning negative campaigning are particularly interesting in this regard. A large literature has developed around the argument that negative campaigns depress turnout. This literature rests on two kinds of evidence, nonexperimental comparisons of different campaigns and laboratory experiments that expose subjects to advertisements and gauge their intention to vote. Nonexperimental studies have the advantage of summarizing the overall tone of each campaign, rather than focusing on, for example, direct mail; their drawbacks are the questionable reliability of these assessments and the difficulty of controlling statistically for factors that might render the relationship between campaign tone and turnout spurious. Lab experiments focus on the immediate consequences of exposure on behavioral intentions but do not examine how these intentions change over time or translate into actual voting behavior. Field experimentation represents a useful addition to this literature because it allows scholars to gauge precisely the behavioral effects of campaign tactics without risk of spurious findings. As it turns out, our results are consistent with the view that negative campaigns reduce turnout, although we hasten to add that the negative effect is statistically insignificant and based on a study of just one such campaign. But laid against the backdrop of other studies of negative campaigning, our results corroborate the view that turnout does not necessarily rise as campaign intensity increases (Ansolabehere and Iyengar, 1995).

Finally, our results provide useful insights into the marginal costs of votes garnered through direct mail. If partisan mail ordinarily generates one additional voter per 800 mailings, the marginal cost is approximately $400 per vote. Econometric studies of campaign expenditures (summarized in Gerber (2000)) suggest that campaigns on average spend their money much more efficiently than this. Thus, we may infer that the typical piece of mail's influence is exerted primarily through its persuasive impact rather than its tendency to mobilize voters who might otherwise abstain.

Appendix A: Description of mailers

Connectict mayoral election

The first piece of mail was sent on October 8th and the last piece was sent on October 27th. To protect the anonymity of these candidates, we use the fictitious name Smith for the Democratic challenger, and Jones for the Republican incumbent.

Mailing 1
Picture: A class of school children.
Text: John Smith is working for stronger (town name) schools and brighter futures for our children. John Smith understands that our children's tomorrows depend on the quality of the education they receive today. That's why, as a state legislator, John Smith has worked to raise education standards for teachers and students, reduce class sizes, and make our classrooms safe and orderly by removing violent and disruptive students.

Mailing 2
Picture: A teacher in front of a large class.
Text over the picture: Smaller class sizes mean
Continuation: a better education for our children. As a state legislator, John Smith has worked to improve our schools by lowering class sizes, setting and achieving higher standards, and making our classrooms safe and orderly. He'll work for these same goals as our mayor.

Mailing 3
Picture: Arms of a man behind bars.
Text over the picture: He's a convicted felon.
Continuation: Shouldn't you know if he's living next door? As a state legislator, John Smith wrote Connecticut's Megan's Law to keep criminals in prison longer and keep the public informed if a sex offender is living in their neighborhood.

Mailing 4
Picture: Entrance sign for a neighborhood well known locally as threatened by developers.

Text next to the picture: Fred Jones was going to let this community be swallowed up by over-development

Continuation: Jim Smith stood up to protect their homes. Shopping plazas, traffic congestion, less open space and a poorer quality of life. All the result of Fred Jones' lack of leadership. For the residents of *X*, it meant something even worse, the loss of their homes. And Fred Jones was going to let it happen.

Mailing 5

Picture: Tree with money instead of leaves.

Text next to the picture: Fred Jones thinks that money grows on trees

Continuation: Jim Smith knows it's coming out of your pocket. Fred Jones: Under Fred Jones, local spending has increased by more than 20% and local taxes by more than 23%. Thanks to Fred Jones, *X* now ranks among the top third of all towns in per capita taxes in greater *X*. John Smith: as a state legislator, John Smith cut taxes for working families by 1.3 billion dollars and he fought against the state income tax. Under Fred Jones, local spending and taxes have skyrocketed and you've been left with the bill.

Mailing 6

Picture: Money burning.

Text over the picture: Fred Jones thinks you have money to burn

Continuation: John Smith wants to put out the fire. Taxes and spending in *X* have risen out of control under Fred Jones. Same comparison as in previous mailing. Fred Jones-spending your money like wildfire and sending you the bill.

Mailing 7

Picture: A male hand and a fishing poll.

Text over the picture: Developers in X went fishing for support ... and now Fred Jones is on the hook

Continuation: Maybe its time we cut the line and threw Fred Jones back. Fred Jones put his contributors ahead of our needs. Out of control development and sprawl are quickly becoming a way of life in *X*. Why won't Fred Jones do anything to fix the problem? Vote NO on Fred Jones.

Mailing 8

Picture: A traffic jam.

Text over the picture: This traffic jam wasn't caused by an accident

Continuation: Fred Jones let it happen. Sprawl and endless traffic: the results of an out of control policy towards development. We don't need more traffic and more sprawl, and we certainly don't need politicians like Fred Jones. Vote NO on Fred Jones.

Mailing 9

Pictures: Pictures of Jim Smith alone and with his wife and with his children.

Text: A lifelong resident on *X*, Jim Smith is a five-term state representative and a

former member of the *X* Board of Aldermen. Short messages follow the heading: stronger schools, controlled development, lower taxes and fiscal stability, and safer streets.

New Jersey assembly election

(Jim and Jenny Smith denote the two legislative candidates in the descriptions that follow).

Mailing 1—Oct. 15
Pictures: Kids in a classroom, Smith showing kids a book.
Text: Jim and Jenny Smith are making sure that our kids' futures are wide open. Jim and Jenny Smith are ensuring our students have the skills to compete. Smiths have worked to improve our schools by raising academic standards, reducing class sizes, and making our classrooms disciplined and orderly.

Mailing 2—Oct. 18
Pictures: Kids on a playground, Smiths showing kids a book.
Text: Jim and Jenny Smith are making sure that our kids count. Jim and Jenny Smith are fighting to protect our children. In 1999 alone, Smiths sponsored legislation to fight child abuse, catastrophic illness in children, domestic violence, and to raise the standard of care in foster homes. Smiths have a proven record of commitment to our children.

Mailing 3—Oct. 20
Pictures: Oil can and water glass on left half, Man with a gun barrel pointing at viewer on the right half.
Text: Jim and Jenny Smith know that some things just don't mix. Like oil and water. And kids and guns. Jim and Jenny Smith are working to protect our kids from guns. Smiths are a strong supporter of sensible gun control laws. They have introduced legislation to ban cheap handguns that are favored by criminals and to require trigger locks on all guns in order to protect our kids. Unfortunately, some Republicans want to weaken New Jersey's gun laws and put our families at risk.

Mailing 4—Oct. 22
Picture: A verdant field with a wood fence.
Text: Jim and Jenny Smith are protecting open space and making developers pay. Jim and Jenny Smith are fighting to preserve open space, improve road safety, reduce traffic congestion, and maintain our quality of life. Smiths are putting our families first.

Mailing 5—Oct. 25
Picture: Someone putting a gun in a school locker. A kid being placed by a policeman into the backseat of a police car.
Text: It's simple. If they bring guns to school, the Smiths believe they should be

gone. Students that bring guns to school have no business in our classrooms. Smith supports a zero tolerance policy toward guns in our schools at any time, and they support legislation to give teachers more authority to remove violent and disruptive students from the classroom. And to protect our kids at home, Smiths introduced legislation to ban cheap handguns favored by criminals and to require child safety locks on all firearms. Jim and Jenny Smith are working to make our schools safe for our children and our homes safe for our families.

Mailing 6—Oct. 27
Picture: Woman in hospital bed speaking with a doctor. Accountants huddled over a book of spreadsheets.
Text: Jim and Jenny Smith believe quality health care starts with you and your doctor. Not with accountants and profit margins. Smith has worked so patients choose their own doctors. Some big insurance companies are more concerned with their profit margins than with the quality of your health care. Jim and Jenny think doctors should make medical decisions, not accountants. That's why, as our assembly person, Smith sponsored legislation to give patients the right to sue their HMO if a decision they make causes a patient harm. Jim and Jenny Smith are on the side of patients for quality health care.

References

Ansolabehere, S., Iyengar, S., 1995. Going Negative: How Political Advertisements Shrink and Polarize the Electorate. The Free Press, New York.

Broder, D.S., 1971. The Party's Over: The Failure of Politics in America. Harper and Row, New York.

California Prolife Council Political Action Committee et al., vs. Fair Political Practices Commission, et al., July 19, 2000. Case no. Civ. S-96-1965 6.

Cox, G.W., Munger, M.C., 1989. Closeness, expenditures, and turnout in the 1982 U.S. House elections. American Political Science Review 89 (1), 217–231.

Fritz, S., Morris, D., 1992. Handbook of Campaign Spending: Money in the 1990 Congressional Races. Congressional Quarterly Press, Washington, DC.

Gerber, A.S., 2000. A new approach to calculating the return to campaign spending. Yale University Working Paper.

Gerber, A.S., Green, D.P., 2000. The effects of canvassing, direct mail and telephone contact on voter turnout: a field experiment. American Political Science Review 94 (3), 653–664.

Kelley, S. Jr., 1956. Professional Public Relations and Political Power. Johns Hopkins Press, Baltimore.

Kolodny, R., 2000. Electoral partnerships: political consultants and the political parties. In: Thurber, J.A., Nelson, C.J. (Eds.), The Role of Political Consultants in Elections. Brookings Institution Press, Washington, DC.

Miller, R.E., Bositis, D.A., Baer, D.L., 1981. A stimulating voter turnout in a primary: field experiment with a precinct committeeman. International Political Science Review 2 (4), 445–460.

Nimmo, D., 1970. The Political Persuaders. Prentice-Hall, Englewood Cliffs, NJ.

Putnam, R.C., 2000. Bowling Alone: The Collapse and Renewal of American Community. Simon and Schuster, New York.

Rosenstone, S.J., Hansen, J.M., 1993. Mobilization, Participation, and Democracy in America. Macmillan, New York.

Sabato, L.J., 1981. The Rise of Political Consultants: New Ways of Winning Elections. Basic Book, New York.

Simpson, D., 1996. Winning Elections: A Handbook of Modern Participatory Politics. Harper Collins, New York.

United States Postal Service, 1982–2001. Revenue, pieces and weight by classes of mail and special services. USPS, Washington (ASI microfiche 9862-1).