



**Does Costly Signaling Matter? Preliminary Evidence
from a Field Experiment**

Philip B.K. Potter and Julia Gray

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ABOUT THE AUTHORS

Julia Gray is Assistant Professor of Political Science at the University of Pittsburgh. Her research, which focuses on the political economy of international finance, regional trade organizations, and emerging markets, has received numerous awards, including a year-long predoctoral fellowship at Stanford University's Center on Democracy, Development, and the Rule of Law; fieldwork grants from the National Council for Eastern European and Eurasian Research, the American Council of Learned Societies, the Fulbright Council, and the International Research and Exchanges Program; and a dissertation grant from the Institute of Global Conflict and Cooperation. She received her PhD in 2007 from UCLA and an MSc with distinction in Politics of the World Economy from the London School of Economics in 2001.

Philip B.K. Potter is a Postdoctoral Fellow at the Christopher H. Browne Center for International Politics at the University of Pennsylvania. He was a Research Fellow at the Belfer Center for Science and International Affairs from 2006 to 2008. His research focuses on international security, and American foreign policy and methods. Recent research projects include his articles, "Does Experience Matter? American Presidential Experience, Age and International Conflict," which appeared in the June 2007 issue of the *Journal of Conflict Resolution*; and "The Relationship Between Mass Media, Public Opinion and Foreign Policy: Toward a Theoretical Synthesis" (co-authored with Matthew Baum), published in the June 2008 volume of the *Annual Review of Political Science*. He holds degrees from McGill University and UCLA.

Does Costly Signaling Matter?

Preliminary Evidence from a Field Experiment

Julia Gray, University of Pittsburgh

Philip B.K. Potter, University of Pennsylvania

Abstract

This paper presents a preliminary experiment designed to determine whether costly signaling plays a role in political interactions. Drawing on the expansive signaling literature in international relations and elsewhere, we propose that the quality of solicitation materials matters because voters respond to costly signals from candidates as a shortcut for determining both a candidate's investment in their own campaign and the degree of commitment from other voters to that candidate's cause. Thus, it is not face-to-face interaction per se that drives the finding that canvassing is the superior method of marshalling voters to the polls on election day, but rather the relatively higher cost of this action. We test these hypotheses in a campaign where the candidate allowed us to treat his campaign materials, enabling us to control for the difference between face-to-face and mail interaction while varying the costliness of the signal in ways that would have not otherwise been possible. Our findings indicate that costly signals do have an independent effect on both turnout and voter choice. This conclusion holds lessons for campaigns and the study of voter behavior, but it also has implications for the microfoundational validity of signaling arguments more generally.

Signaling is an important part of our theoretical understanding of many issues in the social sciences. Michael Spence first put forward the distinction between costly signals and “cheap talk” in the context of job markets.¹ The simplified conclusion of the literature that emerged from this insight is that, in an atmosphere of incomplete information, actors turn to credible signals to indicate their “type” to other actors. If actors make a clear investment in a signal, it will be deemed a credible representation of their commitment to a particular outcome.²

A great deal of work in international relations has focused on how states effectively signal their intentions to international actors. Several scholars have argued that intentions are credible only when they cannot be reneged on. Thomas Schelling spoke of “throwing away the steering wheel” as the ultimate signal of commitment to a certain course of action in international affairs.³ More recently, James Fearon’s work on signaling and audience costs in crisis behavior has spawned a cottage industry in rationalist explanations for war.⁴ Another important example can be found in Kenneth Schultz’s research, which describes, again using the logic of costly signaling, how opposition parties can render a signal more or less credible in a democracy.⁵

¹ Michael Spence, “Job Market Signaling,” *Quarterly Journal of Economics*, Vol. 87, No. 3 (August 1973), pp.355–374.

² For just a few examples from economics, see the following: on competitive signaling, see John G. Riley, “Competitive Signaling,” *Journal of Economic Theory*, Vol. 10, No. 2 (April 1975), pp. 174–186. On monetary policy as a way of establishing reputations, see Robert J. Barro, “Reputation in a Model of Monetary Policy with Incomplete Information” (December 1986); and Kenneth S. Rogoff, “Reputational Constraints on Monetary Policy,” paper presented at the Carnegie-Rochester Conference Series on Public Policy (Spring 1987). On how incomplete contracts signal a principal’s type, see Kathryn E. Spier, “Incomplete Contracts and Signaling,” *RAND Journal of Economics*, Vol. 23, No. 3 (Autumn 1992), pp. 432–443. On capital-account liberalization as a signal of the direction of future policy reform, see Leonardo Bartolini and Allan Drazen, “Capital Account Liberalization as a Signal,” *American Economic Review*, Vol. 87, No. 1 (March 1997), pp. 138–154.

³ Thomas C. Schelling, *The Strategy of Conflict* (Cambridge, Mass.: Harvard University Press, 1960).

⁴ See James D. Fearon, “Domestic Political Audiences and the Escalation of International Disputes,” *American Political Science Review*, Vol. 88, No. 3 (September 1994), pp. 577–592; James D. Fearon, “Signaling Versus the Balance of Power and Interests,” *Journal of Conflict Resolution*, Vol. 38, No. 2 (June 1994), pp. 236–269; and James D. Fearon, “Signaling Foreign Policy Interests: Tying Hands versus Sinking Costs,” *Journal of Conflict Resolution*, Vol. 41, No. 1 (February 1997), pp. 68–90.

⁵ Kenneth A. Schultz, *Democracy and Coercive Diplomacy* (Cambridge: Cambridge University Press, 2001).

Although these models of signaling behavior are increasingly central to the literature on international interactions, we still have little idea of whether signaling really matters, or, rather, is simply a useful modeling device. We argue here that the way to determine whether costly signaling plays an actual role in mitigating uncertainty in political interactions is through an experimental design in which the costliness of the signal varies while all other elements of the interaction are held constant. Experimental methods are the gold standard for isolating the relationship between an independent and a dependent variable; however, this approach comes with a cost as well. Direct experimentation is impossible in international affairs, particularly in the life-or-death domain of international conflict. For this reason we turn to a more mundane political interaction: a local election. By doing so we can determine whether signaling can sway behavior when the stakes are low—a seeming prerequisite if we are to expect it to play a role in matters of state survival. Moreover, this approach uncovers whether real people actually respond to costly signals. Affirmative answers to these questions, even in this far removed political circumstance, would do a great deal to provide a microfoundational mechanism to underpin international relations signaling arguments.

This working paper presents a preliminary exploration of this approach to the signaling question. It demonstrates the feasibility of the experimental design in preparation for a larger more powerful test.

1. Signaling in American Elections

Field experiments in American electoral politics have long sought to determine how best to mobilize voters. In a widely regarded study, Alan Gerber and Donald Green find door-to-door

canvassing to be considerably more effective at this task than telephone or mail solicitations.⁶ This conclusion builds on earlier evidence that personal mobilization can significantly increase voter turnout.⁷ Gerber and Green attribute the relative success of canvassing to the social capital that comes with personal interaction, but do not test this expectation. This is indicative of a broader gap in our knowledge about the mechanisms underpin voter behavior—in many cases we understand how voters act, but not why. There is, however, an emerging interest in exploring the precise mechanisms that underpin voter response in a more nuanced way. This article builds on this literature by exploring the interaction between the type of voter solicitation and its quality in the controlled environment of a field experiment. We dispute that voters respond to door-to-door contact because it heightens social capital. Instead, we hypothesize that personal contact mobilizes voters because it is a costly signal of both the candidate's and his or her supporters' investment in the campaign, and is therefore a useful cognitive shortcut that indicates a candidate's overall quality.

We are able to isolate and test this alternative mechanism only because we conducted our experiment from inside a political campaign with the full knowledge and approval of the candidate. This unusual circumstance afforded us the opportunity to alter actual campaign tactics and materials to control for the type of interaction (mail vs. in-person) while varying the costliness of the signal.⁸ This approach allows us to separate the costliness of the signal from the type of voter solicitation. In contrast to our approach, most previous experiments on voting

⁶ Alan S. Gerber and Donald P. Green, "The Effects of Canvassing, Telephone Calls, and Direct Mail on Voter Turnout: A Field Experiment," *American Political Science Review*, Vol. 94, No. 3 (September 2000), pp. 653–663.

⁷ See, for example, Samuel J. Eldersveld, "Experimental Propaganda Techniques and Voting-Behavior," *American Political Science Review*, Vol. 50, No. 1 (March 1956), pp. 154–165; and Samuel C. Patterson and Gregory A. Caldeira, "Getting out the Vote: Participation in Gubernatorial Elections," *American Political Science Review*, Vol. 77, No. 3 (September 1983), pp. 675–689.

⁸ Gerber and Green also tested the effectiveness of telephone canvassing. Because they found only a very small effect for this type of interaction, and the small population of the district we study limits the power of our experiment, we have excluded this form of solicitation.

behavior are restricted to nonpartisan, “get-out-the-vote” campaigns.⁹ Although our research design paves the way for new findings, it comes at a cost. The campaign from which we were able to obtain permission to experiment was for magistrate of the fourth district of Franklin County, Kentucky. The small population of this district (approximately 1,600 households) and the local nature of the race limit the power of some of our tests and the generalizability of our conclusions. Despite these limitations, our findings appear to indicate that costly signals can have an independent effect on both turnout and voter choice, suggesting that this mechanism is one that is worthy of further attention in the form of a more powerful experiment on a larger electorate.

In the sections that follow, we first theorize about the role of signaling in campaigns. We propose that the earlier finding of positive responses to door-to-door campaigning might be driven instead by a correlated omitted variable: the costly signal of a candidate’s investment, and the investment of supporters, into a campaign. We go on to describe the election setting in which we test this theory, and detail our experimental design for varying the quality in different types of voter solicitation (mailed flyers and personal canvassing). The third section shows empirical results from the data we gathered from our preliminary experiment, as well as from a follow-up phone survey conducted after the election.

⁹ For exceptions, see William C. Adams and Dennis J. Smith, “Effects of Telephone Canvassing on Turnout and Preferences: A Field Experiment,” *Public Opinion Quarterly*, Vol. 44, No. 3 (Autumn 1980), pp. 389–395; Kevin Arceneaux, “I’m Asking for Your Support: The Effect of Personally Delivered Campaign Messages on Voting Decisions and Opinion Formation,” *Quarterly Journal of Political Science*, Vol. 2, No. 1 (2007), pp. 43–65; Alan S. Gerber, “Does Campaign Spending Work? Field Experiments Provide Evidence and Suggest New Theory,” *American Behavioral Scientist*, Vol. 47, No. 5 (January 2004), pp. 541–574; Donald P. Green, Alan S. Gerber, and David W. Nickerson, “Getting out the Vote in Local Elections: Results from Six Door-to-Door Canvassing Experiments,” *Journal of Politics*, Vol. 65, No. 4 (November 2003), pp. 1083–1096; David W. Nickerson, “Partisan Mobilization Using Volunteer Phone Banks and Door Hangers,” *Annals of the American Academy of Political and Social Science*, Vol. 601, No. 1 (September 2005), pp. 10–27; and David W. Nickerson, Ryan D. Friedrich, and David C. King, “Partisan Mobilization Campaigns in the Field: Results from a Statewide Turnout Experiment in Michigan,” *Political Research Quarterly*, Vol. 59, No. 1 (March 2006), pp. 85–97.

2. How Voters Take Shortcuts

The voter mobilization literature is characterized by powerful experiments with large samples that generate conclusive empirical findings. For example, the sample size in Gerber and Green's experiments approached 30,000. The result is that there is confidence in their finding that door-to-door canvassing surpasses the efficacy of telephone calls and direct mailings by nearly ten percentage points.¹⁰ Despite the power of these tests, however, they are structurally ill-equipped to answer a basic question that is of interest to political scientists and candidates alike: Why would registered voters respond more positively to personal contact than other forms of interaction?

The answer to this question has not been forthcoming because the underlying mechanisms have not been the subject of rigorous theoretical work or explicit testing. The Gerber and Green post hoc explanation linking the success of personal contact to a broader societal decline in "social capital" is not entirely satisfying. Most who have been on the giving or receiving end of canvassing would likely doubt that the average person is desperate to socialize with strangers in this way. The type of social capital to which Gerber and Green ascribe their results involves voluntary association among groups of like-minded individuals. There is little reason to believe that strangers knocking on a door would provoke the same kind of civic bond produced when an already interested person joins a club that fits their interests. Thus, while social capital may seem to offer an intuitive preliminary explanation, more must be done to develop exacting tests of the mechanism that drives this finding.

Some attempts have already been made in this direction. Recent experimental work has focused on variations within one type of solicitation, in an attempt to isolate the mechanisms

¹⁰ Gerber and Green build on their initial 2000 finding in 2003, with similar results.

driving certain results. For example, Nickerson has suggested that in phone banks, paid professionals—that is, “quality” solicitations—have a stronger effect on voter turnout than volunteer phone banks.¹¹ The quality in question refers to the professionalism and experience of solicitors who make a living out of persuasive sales pitches. But surely there are other ways that quality can reflect on candidates. Having professionals in a candidate’s ranks could also signal a particular candidate’s investment into his or her campaign. Similarly, Gerber, Green, and Nickerson show that mail has the ability to mobilize, but do not take into account the variation in the kind and quality of mail.¹² In contrast, Nickerson, Friedrich, and King show that partisan flyers are effective, but do not explore other types of potential variation in that medium.¹³ Kevin Arceneaux notes the potential bias caused by candidates who only contact potentially sympathetic supporters, and finds that solicitation in person as well as over the phone does not change voters’ preexisting beliefs about candidates.¹⁴

We propose instead that variations in the type of contact could send signals to voters of a candidate’s investment in the campaign and the overall strength of the candidacy. This basic insight can be applied to local politics just as easily. If voters lack complete information about candidates—which they often do—they might rely on cognitive shortcuts to guide their choices at the polling station. Party identification is the most obvious shortcut.¹⁵ Particularly in local elections, where voters are confronted with a long list of contested offices of minor importance, they will likely not bother to inform themselves about the histories of each candidate and will simply vote along party lines. They will assume that candidates who share their party affiliation

¹¹ David W. Nickerson, “Quality Is Job One: Professional and Volunteer Voter Mobilization Calls,” *American Journal of Political Science*, Vol. 51, No. 2 (March 2007) pp. 269–282.

¹² Green, Gerber, and Nickerson, “Getting out the Vote in Local Elections.”

¹³ Nickerson, Friedrich, and King, “Partisan Mobilization Campaigns in the Field.”

¹⁴ Arceneaux, “I’m Asking for Your Support.”

¹⁵ Charles H. Franklin and John E. Jackson, “The Dynamics of Party Identification,” *American Political Science Review*, Vol. 77, No. 4 (December 1983), pp. 957–973.

will hold similar views and positions on the issues.

How else might voters judge candidates, particularly voters whose party affiliation is weak? Practically speaking, a candidate cannot alter party identification in order to influence the voter. How else might he or she campaign effectively in an environment of shortcuts? One way, seemingly agreed upon by candidates of all stripes, is through extensive fundraising and campaigning. Well-advertised campaigns serve two purposes: they spread name recognition for a candidate, and they also serve to signal a candidate's intentions and determination.¹⁶

Much recent work has tried to unpack the psychology of why individuals might respond better to certain kinds of solicitations. Some economists have focused in particular on charitable contributions. Dean Karlan and John List find that telling potential donors about matching grants (i.e., money contributed by donors contingent on equivalent amounts being raised elsewhere) increases the probability that individuals will themselves offer money (the amount of the match was irrelevant).¹⁷ This finding was particularly robust in "red" states, leading the authors to speculate that donors were motivated by competitive thrills.¹⁸ Whatever the mechanism, this illustrates the suggestive power of the presence of money: evidence that others have provided funds motivates individuals to act on behalf of a campaign.

¹⁶ See Alan I. Abramowitz, "Name Familiarity, Reputation, and the Incumbent Effect in a Congressional Election," *Western Political Quarterly*, Vol. 28, No. 4 (December 1975), pp. 668–684; Charles K. Atkin, Lawrence Bowen, Oguz B. Nayman, and Kenneth G. Sheinkopf, "Quality versus Quantity in Televised Political Ads," *Public Opinion Quarterly*, Vol. 37, No. 2 (Summer 1973), pp. 209–224; and Kim Fridkin Kahn and Patrick J. Kenney, "Do Negative Campaigns Mobilize or Suppress Turnout? Clarifying the Relationship between Negativity and Participation," *American Political Science Review*, Vol. 93, No. 4 (December 1999), pp. 877–889.

¹⁷ Dean Karlan and John A. List, "Does Price Matter in Charitable Giving? Evidence from a Large-Scale Natural Field Experiment," *American Economic Review*, Vol. 95, No. 5 (2007), pp. 1774–1793.

¹⁸ This finding builds on other such experiments in economics. John A. List and David Lucking-Reiley found that if a project was touted as already having raised seed money, potential donors were more likely to give; and Daniel Rondeau and John A. List found that donors were less motivated by projects that had 1:1 matching requirements than by those with seed money. See List and Lucking-Reiley, "The Effects of Seed Money and Refunds on Charitable Giving: Experimental Evidence from a University Capital Campaign," *Journal of Political Economy*, Vol. 110, No. 1 (February 2002), pp. 215–233; and Rondeau and List, "Exploring the Demand Side of Charitable Fundraising: Evidence from Field and Laboratory Experiments" (Chicago: Department of Economics, University of Chicago, 2006).

The idea that previous commitment by others can signal quality has found traction in the study of electoral politics as well. For example, Nickerson has demonstrated that volunteers significantly outperform paid employees at certain mobilization tasks, and attributes this effect in part to the signal of candidate quality that volunteered commitment conveys to prospective voter.¹⁹ He reinvigorates the case for phone calls as mobilization efforts by demonstrating that the quality of phone calls has an impact on voters; the pace and interactivity of callers matter more than the timing or the message. This indicates the importance of examining the substance of the interaction that voters might respond to, rather than the type of interaction itself.

Other successful experiments show that fundraising lends its own well-documented advantages in campaigns. Katherine Hinckley and John Greene and David Damore have demonstrated that early money is a sign of support that helps raise additional funds in the ensuing months; the former finds that the success is attributable not to performance in the campaign itself, but to an “organization-driven” model, where early financing is a function of the quality of candidates’ political bases and fund raising efforts.²⁰ Though early money may engender a form of selection bias (that is, better-organized campaigns raise money early on), it may set a standard that others will copy. In modern American elections, candidates vie with one another to gather and disperse massive campaign war chests in a very public way. More significantly, this process seems to have a real and widely recognized effect on candidate viability and voter choice that extends beyond the simple need for money to garner name recognition and disperse a message.

The early demise of Tom Vilsack’s presidential campaign in the 2008 election cycle and

¹⁹ Nickerson, “Quality Is Job One.”

²⁰ See Katherine A. Hinckley and John C. Green, “Fund-raising in Presidential Nomination Campaigns: The Primary Lessons of 1988,” *Political Research Quarterly*, Vol. 49, No. 4 (December 1996), pp. 693–718; and David F. Damore, “A Dynamic Model of Candidate Fundraising: The Case of Presidential Nomination Campaigns,” *Political Research Quarterly*, Vol. 50, No. 2 (June 1997), pp. 343–364.

subsequent trimming of the potential nominees before a single vote was cast rekindled discussion in the media of the “money primary” as a crucial element of the presidential selection process. As Linda Feldmann says, “Politicians often speak of fundraising with disdain, but in fact, the money that donors are willing to shell out to candidates represents an important signal of a candidate’s viability.”²¹ Political scientists have noted the importance of signaling in this process as well.²² It has been widely recognized that, in the presidential context, fundraising has taken on an importance that far outstrips the importance of the money itself. Fundraising prowess in the “money primary” is taken as a signal of viability, which in turn attracts top campaign advisors and produces a media buzz all its own. This sort of power signaling extends well beyond American elections and seems to run quite deep in the human psyche.²³

Thus, we hypothesize that, holding other factors constant:

- H1. A costly signal by a candidate will increase voter turnout.
- H2. A costly signal by a candidate will increase the probability that the signal’s recipient will vote for the candidate.
- H3. A costly signal by a candidate will increase the perceived investment of the candidate into his candidacy.

3. Experimental Design

We ran our preliminary tests of these hypotheses in a race for magistrate in the fourth district of

²¹ Linda Feldmann, “Before Any Votes, a ‘Money Primary,’” *Christian Science Monitor*, February 26, 2007, pp. 1–11.

²² See Randall E. Adkins and Andrews J. Dowdle, “The Money Primary: What Influences the Outcome of Pre-Primary Presidential Nomination Fundraising?” *Presidential Studies Quarterly*, Vol. 32, No. 2 (June 2002), pp. 256–275.

²³ Anthropologists, sociologists, and even political scientists have extensively studied the customs of the Native Americans of the Pacific Northwest who maintained the potlatch tradition as a means of signaling status. Members of the Kwakiutl clan would engage in dueling feasts of extravagant generosity, with some groups using these as highly competitive determinants of power and leadership, which, on occasion went as far as the public burning of goods. The chief able to dispense with the most property before incurring financial ruin emerged as the higher status individual with the power that that position entailed.

Franklin County, Kentucky. This setting offered natural controls for issues (since magistrate is essentially an administrative office, neither candidate ran on an issues based platform) as well as for party identification (though the challenger was a Republican in a largely Democratic district, party identification was not an emphasis of the race). This allowed us to treat purely on the signal.

Magistrates run for office in five different districts. The district under study here comprised four precincts—approximately 1,600 households, all outside of downtown Frankfort—that constituted the fourth district. In 2004, average income in the county was \$29,442 and unemployment was at 4.1 percent. The precincts were Gaines/Holmes (a poor and relatively urban area), Swallowfield, Switzer, and Peaks Mill (majority farming or rural, poor households).

The 2006 race for magistrate of the fourth district pitted incumbent Ira Fannin, a Democrat who had run unopposed for the office in four consecutive elections, against Republican John Gray, a retired state government worker and lawyer. That particular election year was relatively low-key; the headline-generating race was for circuit judge, between Phillip Shepherd and Jim Boyd. The race for the open Kentucky Senate seat, to the extent that it can be described as contested, pitted incumbent Democrat Ben Chandler against Libertarian Paul Ard. The Democratic House incumbent, Derrick Graham, ran uncontested. Other contested local elections were: another magistrate seat, a district judge, a Supreme Court seat, a judge executive, jailer, four city commission seats, school boards, a constable, and a soil and water supervisor—all relatively minor offices. The absence of a major race allowed our limited treatment of a relatively minor race to have a perceptible effect. A high profile campaign for national office would have likely swamped our results.

Party identification has a lock on local politics in Franklin County, even more so than in many parts of the country. In the entire voting history of Franklin County, only seven Democrats have been elected to local office. Kentucky's relationship with the Democratic Party is not unlike that of much of the south. It had been a slave state but wanted to stay within the Union and thus remained neutral during the Civil War. After the war, Kentucky as a whole became solidly Democratic as a result of anti-abolitionism—it was one the last states to ratify the 13th amendment, on March 18, 1976, after having rejected it on February 24, 1865. That trend carried through the Franklin D. Roosevelt presidency, which gave working-class Kentuckians—particularly the coal miners and farmers that constitute the bulk of the state's labor—an additional economic incentive to keep their Democratic Party cards in their wallets. Kentucky differs from its southern neighbors, however, in that it has not shared as fully in the recent emergence of the Republican Party among religious and moral conservatives that has turned much of the south into solidly “red” states. Only recently, and certainly not in the realm of local politics, have Republican candidates become viable in Kentucky.²⁴

Particularly in Franklin County, a Democratic Party affiliation has until quite recently been a near prerequisite for employment. The county is the seat of state government, which was democratic for most of its history (until Republican Ernie Fletcher was elected in 2002). This distinguishes it from other counties in the state, as people's politics in Franklin County are in large part determined by their access to jobs in state government. The state is by far the largest employer in the county, employing 42 percent of the workforce, and working for what has traditionally been a Democratic administration has aligned residents' politics to that party. Since

²⁴ The South shifted to the GOP for president in the 1960s and '70s, and Congress in the '80s and '90s. In the statehouse, the picture remains mixed. Although Democrats are no longer unassailable in southern state legislatures, they still have a partisan advantage for local races, because candidates can easily distance themselves from the more liberal national party. We thank Wesley Hussey for this insight.

the subsidies for tobacco—the state’s largest cash crop until the 1950s—were cut in the late 1990s, the local wisdom has it that people can only afford to farm if their wives work for state government. Indeed, in our canvassing efforts in the rural precincts of Franklin County, it was not uncommon to see two vehicles parked in the driveways: a pickup truck and a sedan with a state government parking permit.

Thus, we can anticipate that party identification would play a significant role in voting outcomes throughout Franklin County. Nonetheless, room for maneuver exists in any election. Regardless of voting outcome, we can still ascertain how voters might respond to certain campaign materials through experimental design that has two parts: an initial treatment, with varied quality of campaign materials, and a follow-up survey to ascertain whether voters took notice of the quality of those materials.

We designed our experiment such that, across different types of treatment (flyers in the mail or door-to-door visits), there would be a clear distinction between a quality treatment and a cheaper one. If our hypotheses about the importance of signaling are supported, the “costly signal” should matter more to voters than the type of solicitation they received.

We divided the households of the precincts represented in the election into randomly selected fifths. A crucial part of the design our study was that the key variation should come from differing degrees of quality in the campaign contact. Thus, even though we included different types of contact, the content was essentially identical while the form varied. Two groups were randomly assigned to receive a mailed postcard: one in black-and-white and printed on cheap paper with relatively poor-quality image resolution, and the other in color and on high-quality glossy paper. The printed content and layout of both types of flyer remained constant: “Vote John Gray for Fourth District Magistrate: Preserving Our Past, Planning for our Future,”

with a picture of the candidate on the front of the card. The message was deliberately neither partisan nor issue based.

Two of the remaining groups were treated with door-to-door canvassing. One of those fifths received door-to-door visits with high-quality campaign materials (the glossy postcard and a pen), while the other fifth received door-to-door visits with lower quality materials (a black-and-white flyer and a cheap pencil). Both the pen and the pencil contained the same message: “John Gray for Fourth District Magistrate: Vote November 7th!” The pencil was unsharpened and white with black writing, compared with a more expensive blue click pen with yellow writing. The final group was left untreated, as a control.

We canvassed households on the two weekends prior to the election on November 7, 2006, avoiding Sunday morning, when most people would be at church (Franklin County is strongly Baptist). Of the households that received treatment, 528 were not at home or did not come to the door; for those we handwrote “Sorry we missed you” on the relevant flyer and left it, along with the pen or pencil, at the doorstep. We did this in an effort to distinguish receipt of the flyer and writing implement from just receiving the card in the mail. The recipient could theoretically observe the costly signal of the contact in the handwritten note regardless of whether contact was made. Twenty-six houses were either impossible to locate, vacant, or had other impediments peculiar to the region, such as creeks that had risen over the driveway or untethered dogs that menaced our cars as we approached the house.²⁵

Of those that answered the door, five refused to converse with the canvasser, and 121 accepted the pen or pencil. This is a yield of around 23 percent, not dissimilar to the ratio of successful contacts in the Gerber and Green experiment (28 percent). Though canvassers were

²⁵ This no doubt biases our results slightly—those households that were difficult to find or otherwise unreachable are likely poorer or more isolated families, whose residents may have tended to be less politically active or politically informed than the more accessible households.

given a script, more often than not the interaction was brief, if not terse. Anyone who believes that registered voters would feel stirrings of civic pride when a canvasser knocked at their door might do well to visit isolated households in Kentucky, where in some cases our visits were received with commands to “get off my property.”

Post-election survey calls were made to every household in the precinct that had a phone number listed, regardless of treatment. We, aided by a number of volunteers, called each household within five days after the election and asked a number of questions regarding their vote and the campaign materials they received.²⁶ As above, the availability of a phone also likely introduces some bias in our results, as we are most likely eliminating the poorer households, younger households that may rely exclusively on cellular phones, and households unwilling to report their telephone numbers publicly from our sample. Regardless, the number of such households was small enough that the bias is most likely proportionate.

Of the numbers we received, out of a total of 1,954 names from approximately 1,600 households, 776 had no phone listed, 695 were busy signals or disconnected lines, 281 people who answered the phone hung up or declined to take the survey, and 204 people were willing to answer at least a few questions on the survey. This resulted in a yield of around 10.4 percent for our phone survey.

These post-treatment interviews on the treated households (as well as the control group to ascertain the baseline) asked whether respondents remembered receiving the mailing or the

²⁶ Other experiments have focused on the relative merit of volunteer canvassers and phone surveyors over those who are paid, speculating that particularly in small communities, local volunteers may have an advantage over outsiders. Volunteer phone calls and canvassing efforts have been shown to increase voter turnout (see David W. Nickerson, “Quality Is Job One”; and Nickerson, Friedrich, and King, “Partisan Mobilization Campaigns in the Field”), whereas professional phone banks have no effect (see McNulty 2005; Gerber and Green, “The Effects of Canvassing, Telephone Calls, and Direct Mail on Voter Turnout”; and Gerber and Green, “Do Phone Calls Increase Voter Turnout?”). Our limited resources as well as the intended scope of the experiment did not allow us to test this hypothesis here. However, even though in Franklin County “slick politicians” run the risk of being treated as outsiders, we feel confident that our visits did not engender that response, as our results show.

writing implement, their perception of candidate quality, and their preference in the election.²⁷

This, in conjunction with publicly available voter turnout data, allows us to determine whether voters respond to signals of quality from candidates.

4. Results

As it happened, the challenger lost every precinct except his own. In a race with around 51 percent turnout, Gray only captured 30 percent of the vote. Comments we heard during the survey portion of the research strongly suggested that this result primarily driven by nearly 150 years of party loyalty; indeed, 81 percent of voters in the district are Democrats, already a tidy majority if individuals vote along party lines.²⁸ Anecdotal evidence also suggests that incumbency advantage trailed close behind in terms of influence—another accepted truth about American elections.²⁹ This is particularly true in the south, where what V.O. Key famously called “friends and neighbors” politics means that incumbents develop name recognition and social connections over time.³⁰ We were, however, able to discern significant effects resulting from the experimental treatments.

4.1 Treatment Effect on Turnout

In order to test the effect of the treatments on voter mobilization, we gathered individual- level

²⁷ We list the full survey in the appendix.

²⁸ In our phone survey, we learned that at least a few people took advantage of the computerized voting system by choosing an entire party ticket—often not realizing that Gray was a Republican.

²⁹ See, for example, Albert D. Cover, “One Good Term Deserves Another—Advantage of Incumbency in Congressional Elections,” *American Journal of Political Science*, Vol. 21, No. 3 (August 1977), pp. 523–541; Timothy B. Krebs, “The Determinants of Candidates' Vote Share and the Advantages of Incumbency in City Council Elections,” *American Journal of Political Science*, Vol. 42, No. 3 (July 1998), pp. 921–935; and Gary C. Jacobson, “The Marginals Never Vanished: Incumbency and Competition in Elections to the United-States-House-of-Representatives, 1952–82,” *American Journal of Political Science*, Vol. 31, No. 1 (February 1987), pp. 126–141.

³⁰ V.O. Key Jr., *Southern Politics* (New York: Knopf, 1949).

turnout data for every election from 2001 to 2006 from the Kentucky State Board of Elections. From these data, we learned that 68 individuals voted in 2006 but not in 2004; 220 had voted in 2006 but not in 2003; and 319 voted in 2006 but not in the previous midterm election in 2002. Table 1 gives raw numbers for characteristics of our different treatment groups, according to that data.

Table 1: Descriptive Statistics for Treatment Groups

Treatment	N	% Voted 2004	% Female	Mean Age	Turnout 2006	% Vote Gray (Survey)	Perception of Seriousness
Cheap Direct Mail	340	.43	.59	39	.62	.73	2.59
Costly Direct Mail	340	.45	.56	38	.58	.35	4.12
Cheap Flyer + Pencil	340	.42	.58	37	.67	.54	3.03
Costly Flyer + Pen	340	.46	.56	38	.61	.59	4.02
Control	596	.47	.59	38	.63	.51	3.43

We do not see marked differences among the groups in the simple breakdown of the way that our treatment groups behaved—a result of the low power of this preliminary experiment. The following tables, however, present a slightly different view of the effects of quality on the election. Table 2 presents the results of a logistic regression on individual turnout (coded 0 if the registered voter did not go to the polls and 1 if he or she did).³¹ The independent variable of

³¹ Gerber and Green used a two stage probit regression because of concern that the likelihood of voting is correlated with the likelihood of successful contact. Since the variation of interest here is in those who received the “quality” treatment—either in the form of a mailing or a pen—as opposed to those who did not, we would have to find a way to model the likelihood that a voter both was at home to answer the door, and did not throw away the mailing. We did not follow this procedure because we “made contact” with nearly all households when we left the high quality treatment, along with the hand-written note, behind when no one answered the door. This is in line with Gerber and Green’s assumption that their treatment ratio for those who received their mailing was 100 percent.

interest is a whether the voter received a “quality” treatment, either in the mail or in person.³² To allow us to compare our results with existing findings from Gerber and Green we include dummy variables in the regression for both personal contact and mail contact, regardless of quality. Finally, in order to improve the fit of the model we control for a number of personal attributes widely thought to influence voter choice, which we obtained from the Kentucky State Board of Elections. These control variables are: gender, age, party, whether the voter has a phone (as a rough proxy for income), and whether the voter turned out for the previous election in 2004.³³

Table 2: Quality Counted in Voter Turnout

Variable	Coefficient	Standard Error
Constant	-2.45**	(.29)
Quality Contact	.30*	(.13)
In Person Contact	-.29	(.16)
Mail Contact	-.19	(.16)
Party ID	.27	(.15)
Age	.17**	(.04)
Sex	-.03	(.12)
Owns Phone	.29	(.13)
Voted 2004	2.45**	(.19)

Dependent variable is individual voter turnout in 2006. Logit equations on individual-level data. Wald $\chi(8) = 273.39$. Prob > $\chi^2 = 0.00$. Pseudo $R^2 = .13$. Log pseudo likelihood = -928.02. **p < .001, * p < .05. N = 1672.

A higher-quality treatment led voters to be more likely to turn out, a finding that is statistically significant at the .05 level and provides support for hypothesis 1. In direct contrast to the Gerber and Green finding, neither receiving an in-person visit nor a mailing has a statistically significant influence on turnout. What does matter in this model is the quality of that treatment, whether it is a mailing or receiving a pen or pencil. Holding all other variables at their means,

³² We were not able to include a “low quality” dummy in the regressions due to collinearity. When run separately, however, this variable had a statistically significant negative coefficient.

³³ All the regressions in this analysis were duplicated using turnout data from the previous midterm election in 2002 as an additional robustness check. These models produced roughly consistent results.

getting a “quality” mailing or pen changes the probability of turnout by 6 percent — certainly an acceptable return on investment for a pen that cost \$0.59 or a flyer that cost \$0.12 (when bought in bulk).³⁴ More significantly, the finding seems to indicate that canvassing may be an inefficient use of scarce campaign resources, at least in the limited context of a local race.

Additional findings from this first model are consistent with the inherited wisdom in American electoral politics. In predicting turnout, it appears that younger as well as older individuals are more likely to vote, as already demonstrated elsewhere.³⁵ This finding is highly statistically significant. Unsurprisingly, party identification has no clear relationship with turnout.³⁶ Those individuals who have phones, and are thus more likely to be above a certain income bracket, are also more likely to vote. Finally, voters who turned out in the previous general election were much more likely to vote in 2006.

Individual-level turnout data provides a large number of observations, but it has some limitations as well. There is, of course, no way to determine whom these voters turned out to vote for. When we look to changes in turnout to understand our treatments we are, in effect, assuming that the increase in turnout is the result of some enthusiasm generated on behalf of Gray. However, it is possible that Fannin supporters turned out in greater numbers after perceiving that a high quality challenger had emerged to oppose their preferred candidate.

³⁴ When the independent variables are set at the more substantively meaningful value of 1 (except for age, which is left at the average), the value is also 6 percent.

³⁵ See, for example, Benjamin Highton and Raymond E. Wolfinger, “The First Seven Years of the Political Life Cycle,” *American Journal of Political Science*, Vol. 45, No. 1 (January 2001), pp. 202–209; and Raymond E. Wolfinger and Steven J. Rosenstone, *Who Votes?* (New Haven, Conn.: Yale University Press, 1980).

³⁶ We considered, too, the possibility that the signal could have been moderated by partisanship. It is possible that for voters who shared the incumbent’s party (Democrat), the signal of quality could have the opposite effect: upon observing the challenger’s strong campaign, they would be motivated to turn out to vote for the incumbent (see George E. Marcus and Michael B. Mackuen, “Anxiety, Enthusiasm, and the Vote: The Emotional Underpinnings of Learning and Involvement during Presidential Campaigns,” *American Political Science Review*, Vol. 87, No. 3 (September 1993), pp. 672–685). This mechanism has been practically explored with respect to exit polls (see Seymour Sudman, “Do Exit Polls Influence Voting Behavior?” *Public Opinion Quarterly*, Vol. 50, No. 3 (Autumn 1986), pp. 331–339). Including an interaction term, however, had no effect on our results, and the interaction term was not statistically significant. We can perhaps attribute this both theoretically and statistically to the large number of registered Democrats in the fourth district.

Turnout fails to address the central question of this analysis head on. That is, do signals of investment positively influence electoral outcomes for a candidate? Our follow-up survey, conducted in the days following the election, was designed to generate the data needed to answer this question directly.

4.2 Treatment Effect on Outcomes and Perceptions

The most direct way to assess the effect of the experimental treatments is through an “exit poll”-type survey question on the voter’s choice for magistrate.³⁷ We asked all survey respondents, “Do you remember who you voted for magistrate? The candidates were Ira Fannin and John Gray.” The results (coded 0 for Gray and 1 for Fannin) were then used as the dependent variable in a regression similar to that described in the context of table 3.³⁸ Results from this model are presented in table 3.

Table 3: Determinants of Voter Choice (Survey Results)

Variable	Coefficient	Standard Error
Constant	.47	(1.33)
Quality Contact	-.74	(.42)
In Person Contact	.72	(.57)
Mail Contact	.32	(.56)
Party ID	1.53**	(.60)
Age	-.01	(.12)
Sex	.42	(.36)
Voted 2004	.47	(1.33)

Dependent variable is who survey respondents voted for in the race for magistrate. Logit equations on individual-level data. Wald $\chi^2(7)=15.21$. Prob > $\chi^2 = 0.03$. Pseudo $R^2=.08$. Log pseudo likelihood=-89.69. **p<.001, * p<.05. N=141.

³⁷ Unfortunately, we were unable to verify if the respondent was the same as the person who either saw the mailings or answered the door, depending on the treatment; since nearly all respondents remembered some form of campaign solicitation, including that variable did not allow a serviceable proxy.

³⁸ The variable for phone ownership is excluded because of perfect collinearity. We could, of course, only call those who had a phone.

We see from the negative coefficient that those who received quality materials—be they in person or in the mail—were more inclined to vote for the challenger, a finding that is statistically significant at the .08 level and provides qualified support for hypothesis 2. The lower level of statistical significance is likely the result of the considerably smaller sample size. We were limited by the number of surveys we were able to gather by phone due to the response rate. Even among those who we reached this was a very unpopular question that drew several responses along the lines of “mind your own businesses,” a problem that has been documented elsewhere in the context of exit polls. There is also a well-established self-reporting bias in which respondents tend to over report voting for the winning candidate. Whether a candidate received door-to-door visits or mailings does not affect their vote in any statistically significant manner. In line with expectations, the model indicates that party identification was the primary driver of voter choice.

Our survey instrument was also designed to assess whether the quality of the signal altered voters’ perceptions of the candidates—even if this change was not enough to alter the way that they voted. This was done by surveying voter perceptions of the “seriousness” of the Gray and Fannin campaigns. Surveyors were instructed to ask, “In thinking about this race and the campaign strategies, how would you rate the seriousness of the campaign that was conducted by John Gray? Rate it on a scale of one to five, with five being the best and one being the worst and three in the middle.” An identical question was asked for Fannin’s campaign. These findings were analyzed as the dependent variables in ordered logistic regressions with the identical panel of independent variables used in table 2. The results, side-by-side, are found in table 3 below.

Table 4: The Impact of Quality Signals on Voter Perceptions of the “Seriousness” of Gray and Fannin Campaigns

	Gray	Fannin
Constant	-.22 (.54)	-.38 (.53)
Quality Contact	1.66 (.35)	-.65 (.33)
In Person Contact	-.77 (.45)	.82 (.45)
Mail Contact	-.90* (.45)	.46 (.46)
Party ID	-.67 (.43)	.50 (.40)
Sex	.40 (.29)	-.04 (.28)
Age	.02 (.02)	.07 (.07)
Voted 2004	-.22 (.54)	-.38 (.53)

Ordered logit equations. Dependent variable is survey responses indicating the perceived seriousness of each campaign. Standard errors in parentheses. ***p<.001, ** p<.05, * p<.10. N=170. Gray: Wald $\chi^2(7) = 28.54$. Prob > $\chi^2 = .002$. Pseudo R² = .06. Log pseudo likelihood = -241.72. Fannin: Wald $\chi^2(7) = 7.82$. Prob > $\chi^2 = .35$. Pseudo R² = .01. Log pseudo likelihood = -282.93.

This approach to the question supports hypothesis 3 by demonstrating that the quality treatments had a strong positive effect on voter perceptions of the seriousness of the Gray campaign. Interestingly, the quality treatment had a negative effect on perceptions of the Fannin campaign. This is likely due to an implicit comparison of the campaigns conducted by each candidate. A relatively safe incumbent, Fannin did not mobilize a very active campaign for reelection, and, as a result, may not have seemed very serious about his reelection efforts to those who had quality treatments from the Gray campaign as a basis for comparison. Many of those surveyed who saw Gray’s campaign as more serious than Fannin’s, however, still voted for the incumbent. Again, this dynamic is likely the result of party identification in Franklin County politics. These findings also indicate a significant advantage of experimenting in the relatively low profile race for magistrate it seems that our treatments were clearly noticed registered by voters who received them. In a more significant, harder fought campaign it is likely that our

treatment would have been swamped by the extensive campaign materials distributed by both sides.

We also asked respondents, “If you had to choose, what would be the main factor behind your vote for magistrate: party, quality of candidate, a candidate’s position on an issue, or something else?” Of those 209 individuals that responded to that question, 45 (22 percent) cited an issue (though most declined to state what that issue was), 35 (17 percent) cited party identification, and 81 (39 percent) cited candidate quality. Nine knew at least one candidate personally. Self-reporting may be an issue here as well. Some voters may be reluctant to admit that they were using party as a shortcut, and rather chose the more civically aware sounding options of “issues” or “quality.”

The statistically significant coefficient in table 3 for the influence of the mailed treatments on the perceptions of the seriousness of the Gray campaign brings up an additional point. While the meaning of this particular coefficient is difficult to interpret, we do not want to completely discount the relationship that face-to-face or mailed interaction might have with the dependent variables. These covariates do not reach standard levels of significance in most of the models, but they hover around the 0.10 level in a number of cases, suggesting that a larger sample size (such as the 30,000 used in the Gerber and Green analysis) might be sufficient to clarify the impact of these variables. Our analysis, however, does indicate that, at least in the context of the race for magistrate, the effect of quality is more powerful than the effect of contact. These results are consistent with Nickerson’s findings.³⁹

The final table shows a way of comparing the results of individual treatments on our different dependent variables. We list here the results of logit and ordinary least squares regressions, breaking down the effects of each treatment.

³⁹ Nickerson, “Quality Is Job One.”

Table 5: Summary of Results = Regression

Treatment Condition (Survey) of Seriousness	Turnout 2006 Perception N= 1672	% Vote Choice N=141	N= 170
Party	.28 (.44)	1.14 (.61)	-.59 (.44)
Sex	-.03 (.11)	.59 (.38)	.39 (.29)
Owns Phone	.29 (.13)	-	-
Age (squared)	.02 (.005)	.006 (.02)	-.003 (.01)
Turnout in 2004	2.45 (.19)	-1.89 (1.16)	-.20 (.54)
Cheap Direct Mail	-.31 (.17)	1.02 (.67)	-.96 (.49)
Costly Direct Mail	.22 (.18)	-.83 (.58)	.79 (.46)
Cheap Flyer + Pencil	-.19 (.17)	.14 (.61)	-.73 (.51)
Costly Flyer + Pen	-.11 (.17)	.29 (.53)	.87 (.41)

When not pooling the results in terms of “quality” treatments, the individual effects of each treatment are somewhat mixed. All subjects who received a quality flyer or a pen had positive impressions of the seriousness of the Gray campaign. In other respects, though, there are no significant differences on turnout. This is in no small part due to our limited sample size; the number of observations for the survey questions does not exceed 170. This points to the need for further testing on a larger scale; our experiment is best seen as a pilot for future research.

5. Conclusion

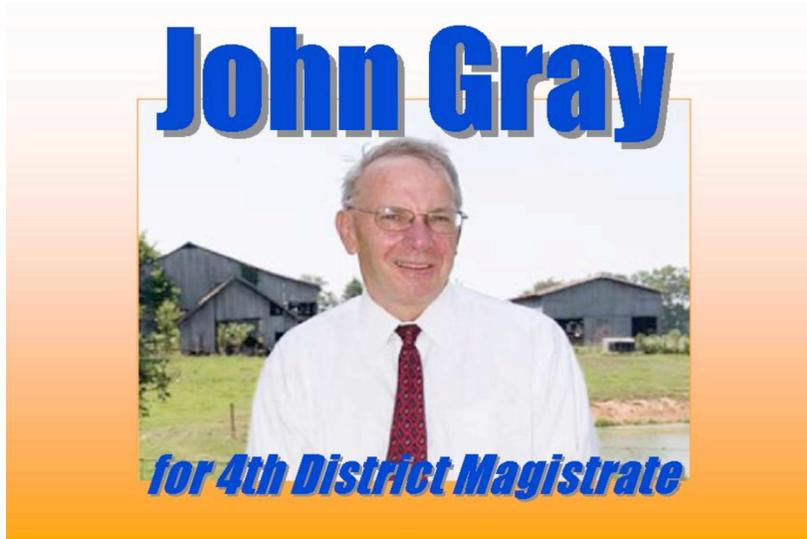
The results of this experiment, though preliminary, offer potentially valuable insights into the nuances of voting behavior. They also demonstrate the power of random-assignment field experiments. We have provided preliminary evidence that voters respond less to the type of solicitation they receive, than to the perceived quality of the signal that a candidate sends. These

quality signals may be taken as an indication of a candidate's investment in a campaign and therefore the seriousness of a candidate's intention to win, or as evidence of support he has already garnered from other important sources (quality campaign materials cost money). Presumably, these attributes are seen as linked to the quality of governance that a candidate is likely to provide if elected. However, further work should be done to specify the mechanism. Our findings indicate that the quality of a campaign material matters, irrespective of the mode of contact (door-to-door as opposed to mailing). We hypothesized that this was a result of a signal of a candidate's investment in his or her campaign. Additional testing could be done to specify the nature of voters' responses to costly signals. Regardless, we hope that this represents a preliminary micro-foundational test of what has become a central concept in the social sciences.

More significantly, this experiment offers a preliminary "real world" test of the validity of signaling arguments at the level of the individual. In political science costly signaling has largely been the domain of formal modelers, but has proven difficult to test. The experiment conducted here provides some preliminary evidence that individuals do indeed take signals into account when engaged in political interactions. However, now that the feasibility of this research design has been demonstrated, it must be repeated on a much larger sample that would provide the power needed to confidently assess the effect of costly signaling. The present sample size allows us to find only very large effects, which partially explains the absence of clear distinctions in table 1 and the low statistical significance throughout the analysis. We anticipate that a follow-up experiment conducted along the same lines pioneered here, but with a sample size approximately four times as large, would produce conclusive evidence showing that costly signaling alters individual behavior in the context of an election, and therefore that a firm foundation exists for the expectation that such signals matter more generally.

Appendix.

Quality Flyer Front



Quality Flyer Back



Survey Script:

Hi my name is _____. I'm a student researching campaign tactics and I was wondering if I could ask you seven questions about the election; it will take less than two minutes.

If no: Would it be ok if I called back another time?

If yes: Thanks

- 1) Are you a registered voter?
- 2) Did you vote in Tuesday's election?

If no proceed to 4

- 3) Do you remember who you voted for magistrate? The candidates were Ira Fannin and John Gray.

Asking whom they voted for may make some respondents uncomfortable. "Yes but I won't tell you" will be a common response. Do not pressure, but rather acknowledge their right to keep this material private and move on.

- 4) Do you remember personally receiving any type of campaign materials in the race for magistrate, either in person or through the mail? (The candidates were Ira Fannin and John Gray.)

Include the material in parentheses if question 3 was skipped.

If the respondent says "yes," ask what they remember specifically.

If "no," then proceed to question 6.

- 5) Did any of those campaign efforts influence your vote?
- 6) In thinking about this race and the campaign strategies, how would you rate the seriousness of the campaign that was conducted by John Gray? Rate it on a scale

of one to five, with five being the best and one being the worst and three in the middle.

- 7) In thinking about this race and the campaign strategies, how would you rate the seriousness of the campaign that was conducted by Ira Fannin? Rate it on a scale of one to five, with five being the best and one being the worst and three in the middle.
- 8) If you had to choose, what would be the main factor behind your vote for magistrate: party, quality of candidate, a candidate's position on an issue, or something else?

Thank you very much for your time.

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John F. Kennedy School of Government
Harvard University
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- 91-01 Jaffee, Adam and Robert N. Stavins. "Evaluating the Relative Effectiveness of Economic Incentives and Direct Regulation for Environmental Protection: Impacts on the Diffusion of Technology."