

# **Marketing and Politics: Models, Behavior, and Policy Implications**

**Session at the 8<sup>th</sup> Triennial Choice Symposium**

Brett R. Gordon (Co-chair)  
Graduate School of Business, Columbia University

Mitchell Lovett (Co-chair)  
Simon Graduate School of Business, University of Rochester

Ron Shachar (Co-chair)  
Tel-Aviv University and Duke University

Kevin Arceneaux  
Department of Political Science, Temple University

Sridhar Moorthy  
Rotman School of Management, University of Toronto

Michael Peress  
Department of Political Science, University of Rochester

Akshay Rao  
Carlson School of Management, University of Minnesota

Subrata Sen  
School of Management, Yale University

David Soberman  
Rotman School of Management, University of Toronto

Oleg Urminsky  
Booth School of Business, University of Chicago

September 27, 2010

## **Abstract**

Many consider the President of the United States to be the most powerful person on earth. In order to get this “job,” the President is involved in one of the largest, most expensive and most comprehensive marketing efforts – the political campaign that leads to election day. This campaign, as well as thousands of others (e.g., congresspersons, senators, governors, district attorneys), has largely been ignored by marketing scholars.

This article describes the growth of interest in research issues relating to political marketing. This emerging research area lies at the cross-roads of marketing and political science, but these fields have developed largely independent of each other with little cross-fertilization of ideas. We discuss recent theoretical, empirical, and behavioral work on political campaigns, integrating perspectives from marketing and political science. Our focus is on (1) the extent to which paradigms used in goods and services marketing carry over to the institutional setting of political campaigns, (2) what changes are necessary in models and methodology to understand issues in political marketing and voter behavior, and (3) how the special setting of politics may help us gain a better understanding of certain topics central to marketing such as advertising, branding, and social networks.

**Keywords:** political marketing; elections; campaigns; advertising

## 1 Introduction

Political campaigns represent some of the most expensive marketing efforts in existence today. Candidates in the 2008 general election spent about \$2.6 *billion*—a 53% increase over the last election—on every possible marketing tool, from direct mailings to television advertising to social media (*The Economist* 2010). Yet research in political science is inconclusive on numerous issues related to the marketing of political candidates: How does advertising affect voters (Lau et al. 1999)? How should candidates allocate marketing budgets across campaign activities (Bartels 1988; Gerber and Green 2000)? How should candidates choose policy positions (Adams, Merrill, and Grofman 2005)? More fundamentally, political scientists are divided on whether campaigns have a measurable impact on election results (Gelman and King 1993). These activities fall within the purview of the marketing discipline, but marketing scholars have largely ignored this area, making it a fertile ground for research.

Political marketing bears a number of similarities to the marketing of goods and services. Consumers choose among brands just as voters choose among candidates or parties. Consumers display brand preferences (party loyalty and party identification), and are exposed to mass media (campaign advertising) and direct sales (“get-out-the-vote” efforts), which may rely on various emotional appeals and social influences. Candidates, like firms, choose product positions (policy positions), determine promotional mix (allocate campaign resources), and conduct market research (polling). These decisions need to account for and anticipate competitors’ actions, implying that candidates participate in games of strategic interaction.

However, there are also important differences. First, unlike consumers who can usually purchase their preferred product, the winner-take-all nature of elections ensures that in almost every election, a significant proportion of voters choose a candidate who is not elected. Second, similar to consumer choices, political attitudes and choices are inherently determined in a social context, and the election process (e.g., its winner-take-all nature) provides voters a significant incentive to influence others. Third, there is a distinct temporal rhythm to political marketing, with elections (purchase opportunities)

occurring every two to four years, each with a clear endpoint. Fourth, while firms probably prefer to maximize the sum of discounted profits, a political candidate's objective function is murkier. Unlike firms, political candidates do not set prices or collect revenue directly from voting decisions.

Opportunities exist to apply current knowledge in marketing to this new domain, but institutional factors in the political arena may require the development of new theories, frameworks, and techniques. For example, recent advances in structural modeling make it possible to frame politicians' behavior as games of strategic interaction (Dubé et al 2005), allowing the researcher to conduct a variety of counterfactual simulations. Political contests may also present cleaner settings in which to understand fundamental aspects of choice and competition because the nature of elections—the election day deadline and winner-take-all nature—create, in some respects, an almost lab-like setting for testing theories.

The remainder of this article explores a set of topics that lie at the intersection of marketing and political science and concludes with a discussion of potential avenues for future research.

## **2 Theoretical Models of Political Elections**

The most basic framework for modeling elections is the Hotelling (1929) model. In this model, voters are distributed along a line with their locations representing their “ideal” policy positions. A voter is assumed to vote for the candidate closest to her ideal position. In the simplest version of the model, two candidates compete to obtain more than fifty percent of the vote by choosing positions along the line.<sup>1</sup> A key result is the *median voter theorem* (Downs 1957): in equilibrium, both candidates choose the position favored by the median voter. This minimum differentiation result contrasts with the maximum differentiation result typically obtained for goods and services (d'Aspremont, Gabszewicz and Thisse 1979) in which firms choose prices as well as product locations.

Further work extends Down's basic model by introducing market "frictions" which prevent full convergence to the median voter's position. These frictions include probabilistic voting (Coughlin and

---

<sup>1</sup> In practice, candidates' choice of positions may be constrained by their past actions and by the party to which they belong (Alesina 1988). “Political baggage” of this sort is carried forth from one election to the next and can only be changed over the long-term, if at all.

Nitzin 1981), multi-candidate elections (Lin, Enelow, and Dorusen 1999; Schofield and Sened 2006), endogenous entry (Palfrey 1984), non-policy considerations and "valence" (Groseclose 2001; Schofield 2003), policy-motivation by the candidates (Calvert 1985), and variable turnout (Adams, Merrill, and Grofman 2005).

Aside from positioning decisions, a large body of research also examines how campaigns allocate resources (Bartels 1988). For example, Snyder (1989) demonstrates the sensitivity of allocation decisions to the specific goals of the competing parties. Another issue that has received analytical attention is the incentive to go negative in campaigns. For example, both Skaperdas and Grofman (1995) and Harrington and Hess (1996) conclude (for different reasons) that front-runners should go less negative than trailing candidates. Recent work examines public policy issues such as spending limits and public campaign financing (Soberman and Sadoulet 2007).

We highlight two recent papers in marketing. Moorthy (2010) identifies an interesting implication of the winner-take-all feature of elections on advertising strategies. Unlike competition in commercial settings, in order to obtain pure-strategy equilibria in election contests with non-zero spending by more than one candidate, there must be significant uncertainty about election outcomes. Without such uncertainty, only two types of equilibria exist: (1) degenerate pure-strategy equilibria, in which all but one of the candidates do not advertise, effectively dropping out of the election, or (2) mixed-strategies. These results have an obvious bearing on how to develop structural models of political campaigns.

Soberman (2010) develops a two-party model where advertising informs voters about the personal characteristics of each candidate. He examines how parties may exploit various campaigning advantages. Voters use a lexicographic decision rule (Bhadbury et al 1998) when comparing personal characteristics (valence) and party positioning. He shows that the optimal strategy is to capitalize on a campaign advantage by increasing advertising intensity with the opponent's core supporters while maintaining advertising intensity in the "home turf." The best response to this strategy for the party at a disadvantage is to reduce its attack advertising in order to vigorously defend its core supporters.

### **3 Empirical Models**

Empirical models of voter and candidate decisions have been prevalent in political science. A number of topics have potential joint interest for researchers in marketing and political science.

#### **3.1 Voter Decisions and the Role of Advertising**

An early literature examines the effect of aggregate campaign spending on voting with mixed results on whether campaigns affect election outcomes (Jacobson 1978; Gelman and King 1993; Holbrook 1994; Levitt 1994). Recent work tends to focus on specific activities: candidates may advertise on television, on the radio (e.g., Gerber et al., 2007), on billboards, through direct mail (e.g., Hillygus and Shields, 2008), and over the phone (e.g., Gerber, 2004). Candidates may contact voters directly through grassroots campaigning (Gerber and Green, 2000; Shachar 2009) or even “buy” the support of voters through threats or compensation (Stokes, 2005).

Our discussion focuses on television advertising because it constitutes about 50% of candidates’ media expenditures. Political advertising may have two effects on voting behavior: it can mobilize an individual to participate in an election (thereby increasing voter turnout) and it can persuade an individual to vote for a particular candidate. Most recent work finds that advertising does not affect voter turnout but that it can persuade voters as to which candidate to choose (e.g., Huber and Arceneaux 2007).

The work above treats advertising as homogeneous, but the literature also recognizes that political ads can deliver a range of potential messages. A notable branch of this literature examines the effect of negative advertising on voter turnout.<sup>2</sup> One argument is that negative political advertising demobilizes non-partisan voters. While several early studies supported such a demobilizing effect (e.g., Ansolabehere et al 1994), some suggest a stimulation effect (e.g., Freedman, Franz, and Goldstein 2004; Che et al. 2007), and still others find no effect of negative ads on turnout (e.g., Finkel and Geer 1998; Lau, Sigelman, and Rovner 2007). Two explanations for these mixed results are that the effect of negative ads

---

<sup>2</sup> Negative advertisements are an extreme version of comparative advertising in which a candidate devotes virtually the entire advertisement to highlighting the negatives of the other candidate (real or imagined).

depends on voters' prior knowledge (e.g., Lovett and Shachar 2010a) and that the positive-negative distinction is too coarse, requiring a third "contrast" category (e.g., Goldstein and Freedman 2002).

The results from this research stream depend heavily on the quality of data and the ability to isolate the advertising effect.<sup>3</sup> Isolating the effect of advertising on voters' decisions is challenging because candidates' spending decisions are endogenous. A candidate's advertising decision is likely to be correlated with unobservable factors related to the candidate's electability (personality, personal values, competency, etc.), actions (unobserved campaign activities), and fundraising ability. Because such factors are observed by the candidates and voters but not by the researcher, estimates can be biased.

This endogeneity problem has been resolved using randomized field experiments, natural experiments, or instrumental variables (IV). Field experiments involve randomly manipulating campaign actions to ensure they are exogenous.<sup>4</sup> A recent example is Gerber et al. (2007), which tests the advertising effects during the 2006 Texas gubernatorial election. They randomly assigned 18 media markets to receive varying levels of advertising exposure and measured voter attitudes and intentions. Natural experiments exploit naturally occurring sources of exogenous variation. Huber and Arceneaux (2007) use the fact that some media markets overlap battleground and non-battleground states, exposing some voters to higher levels of advertising than a candidate necessarily intended. In contrast, IV strategies enforce exogeneity through variables that are ex-ante believed uncorrelated with the unobserved variable. A number of papers use IV strategies to control for the endogeneity of aggregate candidate spending in Congressional races (see for example Green and Krasno, 1988 and Gerber, 1998). In addition, Levitt (1994) used panel-based fixed effects methods that act as IV's.

---

<sup>3</sup> Much of the recent research has relied on secondary data. One key source of data is the Wisconsin Advertising Project (WAP), which provides information on the exact television advertisements shown for Presidential, Congressional, and Gubernatorial candidates in the 100 largest U.S. media markets and includes a rich set of descriptive variables for each advertisement. A second valuable source is the longitudinal panel surveys on political attitudes and knowledge found in the National Annenberg Election Survey (NAES) and the American National Election Studies (ANES), both of which can be linked to the WAP data.

<sup>4</sup> See Green and Gerber (2003) for a review of work on using field experiments in political science and Gerber and Green (2000) for a field experiment involving canvassing, telephone calls, and direct mailers.

Two recent papers have introduced new approaches in this setting to handle the endogeneity of political advertising effects. Gordon and Hartmann (2010a) apply the methodology in Berry, Levinsohn, and Pakes (BLP 1995) to estimate an aggregate market share model of advertising effects in political elections. However, unlike BLP, they use observed average advertising costs as instruments and allow for market-party fixed effects to control for time-invariant party preferences. Similar to Goldstein and Freedman (2002), Lovett and Peress (2010) augment standard voter choice data with individual-level estimates of advertising exposure. However, Lovett and Peress use the variation in individual-level exposure to estimate the effect of advertising while controlling for time-specific unobserved aggregate characteristics.

### **3.2 Candidate Decisions**

Measuring the effects of candidates' decisions on voting outcomes is only one side of the puzzle. As discussed in Section 2, candidates face a plethora of decisions. However, there is relatively little empirical work that examines these decisions using structural econometric techniques that are now common in marketing (Dubé et al 2005), but less so in the political science and economics literature on political marketing (see Erikson and Palfrey 2000 and Degan and Merlo 2009 as exceptions).

How should a candidate allocate campaign funds across different geographic units or message types? Several recent papers consider the allocation of advertising budgets in Presidential elections across states (Shachar 2009) and media markets (Gordon and Hartmann 2010b). Lovett and Shachar (2010a) structurally estimate a model of Congressional candidate decisions about advertising expenditures and allocations between positive and negative messages. They provide evidence that voter knowledge and easier campaign financing lead to greater incentives to go negative in political advertisements.

How precisely can and do candidates target their advertising? A large body of research in marketing studies targeted marketing at the individual and segment levels (Rossi, McCulloch, and Allenby 1996; Chen, Narasimhan and Zhang 2001) and political marketing involves similar targeting problems. In a study of indirect targeting via television shows, Lovett and Peress (2010) find that advertising primarily persuades voters to vote for a candidate and, as a result, candidates should largely

focus on swing voters who have a relatively high likelihood of voting. They demonstrate that the audiences of different TV shows are sufficiently differentiated to allow targeting; although candidate ad placements are largely consistent with optimal behavior, their analysis shows that campaign media planners miss subtler nuances of targeting opportunities. Similarly, Ridout and Franz (2010) characterize the targeting actions of candidates, but for show genres rather than shows.

How do candidates respond to each other and new information as the campaign progresses? Goldstein and Freedman (2002) find that over the course of the campaign, candidates tend to go more negative in their advertising. Lovett and Shachar (2010b) explore how television advertising and campaign visits respond to media coverage and polls and whether campaigns try to imitate or deceive each other. They find that advertising decisions are strongly related to opponent decisions and polls (but not media coverage) and that while where the candidates visit converges as the race progresses, where they advertise diverges. Further, they find that as spending increases, the candidates tend to spend more similarly. This work points to a number of potentially interesting empirical regularities about the dynamics of campaign interactions.

By studying these candidate decisions using structural models, one can coherently answer numerous important “what-if” scenarios. Gordon and Hartmann (2010b) estimate a model of political advertising allocation in presidential campaigns and use it to examine Electoral College reform. Altering the voting system, such as moving to a direct national vote, changes the marginal incentives of candidates to advertise in different states. A structural model is required to calculate the new distribution of advertising and subsequent voting outcomes. The framework they develop can be applied to a variety of counterfactuals in other types of political races.

#### **4 Behavioral Topics in Political Marketing**

The literature on political psychology (Jost and Sidanius 2004) employs theories principally from social psychology to study a host of topics with analogues in the literature on consumer behavior such as a) attitude development, persistence and change and b) decision biases and heuristics. For example,

personality theorists have a long history (Altemeyer 1996) of examining social influences (parents, peers, and teachers) on political preferences, much like consumer behavior theorists have studied the influence of parents and peers on brand preferences (Childers and Rao 1992). Both the political persuasion and consumer behavior literatures are rife with illustrations of the study of attitudes towards parties, candidates, brands and attributes (Kim, Rao and Lee, 2009) as well as the impact on choice shares of differently framed options (Quattrone and Tversky 2004).

However, the political setting also presents the opportunity to extend and identify boundary conditions for behavioral theories. Drawing from the literature on the attraction effect, Hedgcock, Rao and Chen (2009) examined how “phantom decoys” (i.e., candidates who disappear from the choice set) influence preference for one of the remaining candidates. Kim et al. (2009) rely on temporal construal theory to demonstrate that abstract messages are more effective at persuading uninformed voters relative to concrete messages, but only when the election is temporally distant. Klein and Ahluwalia (2005) find that the negativity bias is only present for the most politically opinionated individuals. Similarly, research indicates negatively framed ads produce a backlash effect when they are perceived to be unfair (Shiv, Edell, and Payne 1997). Phillips, Urbany, and Reynolds (2008) demonstrate that response to negative ads may depend on prior attitudes. Thus, though similar to product choices, political attitudes are elicited in different contexts that could help identify boundary conditions for behavioral theories.

Despite a body of work on the process of political persuasion (e.g., Chong and Druckman 2007), little is known about specific factors that make a political argument cogent. Arceneaux (2010) asks whether cognitive biases influence the perceived strength of political arguments. Research on neurobiology and emotions lead to the expectation that individuals are more likely persuaded by arguments that evoke loss aversion and in-group bias via a fearful response, even facing a counter argument. His results are consistent with expectations: individuals who experience fear in response to a situation where losses or out-group threats are salient are more likely to find arguments that offer solutions which avert losses and address threats more persuasive.

Although research often focuses on the role of the individual, political attitudes and behaviors are inherently tied to the social context. What one voter believes about other voters may influence the voter's selection of a candidate (Bartels, 1988), donation and volunteering efforts for a campaign (Fehr and Fischbacher, 2003), and residential location choice (Bishop and Cushing, 2008). These voter beliefs are widely documented in the political context as exhibiting false consensus or social projection (Granberg and Brent, 1983). That is, when voters choose a candidate, they tend to believe that others are more likely to make the same choice (Krueger and Clement 1994). As a result, supporters of a candidate overestimate support for that candidate, contrary to the often assumed independence of preferences and beliefs.

Recently, Orhun and Urminsky (2010) extended these findings to show that the way a voter projects their own candidate evaluations onto other voters whose choices are known differs depending on which candidate the other voters support. They use measured beliefs about others' evaluations of the two presidential candidates in the 2008 election and exploit both cross-sectional variation and individual changes after the first presidential debate. They show that voters project their candidate evaluations directly when estimating the beliefs of other supporters of their own candidate. However, the estimated evaluations of supporters of the opposing candidate reflect a projection of corresponding candidate evaluations, consistent with a process of analogical inference.

## **5 Areas of Future Research and Conclusions**

The previous sections described a few areas of active research. This section presents five topics that are likely to serve as fertile areas for future studies. Some of these topics represent issues that are currently central to either marketing or political science (e.g., social networks). Others are topics in which interaction between the two fields is likely to bear the most fruit (e.g., building on the branding paradigms in marketing to analyze political systems). We briefly describe each topic and present a couple of potential research questions.

**Social networks.** While the vote of an individual has almost no effect on election results, the votes of social groups might. As a result, social interaction and groups have important roles in elections (Shachar

and Nalebuff 1999). This leads to various questions: Is voting a mechanism to create social groups? Can the inclusion of social networks in models of voting behavior improve them? How should candidates make use of social networks to convey their policies and gain supporters? How do new candidates and policies diffuse through the population of voters?

**Brand Image.** Early theories of voting conceptualized the political parties as brands and recent work provides evidence of voters' party loyalty (Shachar 2003). What is the relationship between the brand image of the party and the candidate (i.e., umbrella branding), and how does their interaction affect voting behavior? Can the relationship between the brand image of a party and a candidate shed new light on issues relating to brand extensions?

**Money.** The two most important audiences in a political campaign are voters and donors. Although the setting is somewhat different from a two-sided market, it shares some features with such models (e.g. decisions of where the candidate spends time link the two sides of the market). What are the consequences of the link between these audiences on the optimal marketing strategies? What will be the effect on the political game of the recent Supreme Court decision to remove almost all limits on corporate political giving? What is the relationship between voters' perceptions of a candidate's chances of winning the election and their decision to donate money?

**Heterogeneity.** Marketers know well the importance of allowing for heterogeneous responses to marketing actions, but most work in political science treats the effects of such variables as homogeneous. How important is heterogeneity in this setting and how can the data be used to identify such heterogeneity (Shachar 2009)? Will accounting for heterogeneity resolve some of the key ongoing debates?

**Learning.** Voters are relatively uninformed in the beginning of the campaign and "learn" during a campaign. What is the role of advertising, word of mouth, media coverage, and campaign events in this learning process? What is the interaction among these factors and their effects on voters?

In addition to these five topics, there are many others that seem promising, such as the strategic behavior of voters, the correspondence between practitioner's beliefs and realized outcomes, and network effects in primary elections.

## References

- Abramowitz, A. (1988), "An Improved Model for Predicting Presidential Election Outcomes," *Political Science and Politics*, 21(4), 843-847.
- Adams, J., S. Merrill, and B. Grofman (2005). *A Unified Theory of Party Competition*. New York: Cambridge University Press.
- Alesina, A. (1988), "Credibility and Policy Convergence in a Two-Party System with Rational Voters," *American Economic Review*, 78(4), 796-805.
- Alesina, A. and Rosenthal, H. (1995), *Partisan Politics, Divided Government, and the Economy*. New York: Cambridge University Press.
- Altemeyer, R. A. (1996), *The Authoritarian Specter*, Cambridge MA: Harvard University Press.
- Ansolabehere, S., S. Iyengar, A. Simon, and N. Valentino (1994), "Does Attack Advertising Demobilize the Electorate?" *American Political Science Review*, 88:829-838.
- Ansolabehere, Stephen, and Shanto Iyengar (1997). *Going Negative: How Political Advertisements Shrink and Polarize the Electorate*. New York: Free Press.
- Arceneaux, K. (2010), "Cognitive Biases and the Strengths of Political Arguments," Working paper, Temple University.
- Arceneaux, K., Gerber, A. S., and Green, D. P. 2006. "Comparing Experimental and Matching Methods Using a Large-Scale Field Experiment on Voter Mobilization." *Political Analysis*, 14 (1): 37-62.
- Bartels, Larry M. 1988. *Presidential Primaries and the Dynamics of Public Choice*. Princeton: Princeton University Press.
- Bartels, L. M. (2000), "Partisanship and Voting Behavior, 1952-1996," *American Journal of Political Science*, 44(1), 35-50.
- Berry, Steven, James Levinsohn and Ariel Pakes (1995), "Automobile Prices in Market Equilibrium," *Econometric*, 63(4), 841-890.
- Besley, T. and Coate, S. (1997), "An Economic Model of Representative Democracy," *Quarterly Journal of Economics*, 112(1), 85-114.
- Bhadury, Joyendu, Paul M. Griffin, Susan O. Griffin and Lakshmi S. Narasimhan (1998), "Finding the majority-rule equilibrium under lexicographic comparison of candidates," *Social Choice and Welfare*, Vol. 15, 489-509.
- Bishop, Bill and Robert G. Cushing, *The Big Sort: Why the Clustering of Like-Minded America is Tearing Us Apart* (Houghton Mifflin Harcourt, New York, NY, 2008).
- Calvert, R. (1985). "Robustness of the Multidimensional Voting Model: Candidate Motivations, Uncertainty, and Convergence." *American Journal of Political Science*, 29, 69-95.

- Castanheira, M. (2003), "Why Vote For Losers?" *Journal of the European Economic Association*, 1(5), 1207-1238.
- Che, H., G. Iyer, and R. Shanmugam (2007), "Negative Advertising and Voter Choice," Working paper, University of Southern California.
- Chen, Yuxin, Chakravarthi Narasimhan, and Z. John Zhang (2001), "Individual Marketing with Imperfect Targetability," *Marketing Science*, 20(1), 23-41.
- Childers, Terry L. and Akshay R. Rao (1992), "The Influence of Familial and Peer-Based Reference Groups on Consumer Decisions," *Journal of Consumer Research*, 19 (September), 198-211.
- Chong, D. and J. N. Druckman (2007). "Framing Public Opinion in Competitive Democracies." *American Political Science Review* 101 (4): 637-655.
- Coughlin, P.J. and S. Nitzan (1981), "Electoral Outcomes with Probabilistic Voting and Nash Social Welfare Optima," *Journal of Public Economics* 15:113-122.
- D'Aspremont, C., Gabszewicz, J. J., and Thisse, J.-F. (1979), "On Hotelling's 'Stability in Competition'," *Econometrica*, 47(5), 1145-1150.
- Degan, Arianna and Antonio Merlo (2009), "A Structural Model of Turnout and Voting in Multiple Elections," *University of Pennsylvania Working Paper*.
- Downs, A. (1957), "An Economic Theory of Political Action in a Democracy," *Journal of Political Economy*, 65(2), 135-150.
- Dubé, J. P., K. Sudhir, A. Ching, G. S. Crawford, M. Draganska, W. Hartmann, G. Hitsch, V. B. Viard, M. Villas-Boas, N. Vilcassim (2005), "Recent Advances in Structural Econometric Modeling: Dynamics, Product Positioning, and Entry," *Marketing Letters*, 16(3).
- Economist, The (2010), "Buying Votes," June 19<sup>th</sup>, p. 71.
- Erikson, R. S. and Palfrey, T. R. (2000), "Equilibrium in Campaign Spending Games: Theory and Data," *American Political Science Review*, 94(3), 595-609.
- Fehr, E. and Fischbacher, U. (2003), "The nature of human altruism," *Nature* 425, 785-791.
- Finkel, S. and J. Geer (1998), "A Spot Check: Casting Doubt on the Demobilization Effect of Attack Advertising," *American Journal of Political Science* 42(2): 573-595.
- Freedman, Paul, and Kenneth Goldstein (1999), "Measuring Media Exposure and the Effects of Negative Campaign Ads," *American Journal of Political Science* 4:1189-1208.
- Freedman, Paul, Michael Franz, and Kenneth Goldstein (2004), "Campaign Advertising and Democratic Citizenship," *American Journal of Political Science* 48:723-741.
- Gelman, A and King, G. (1993), "Why Are American Presidential Election Campaign Polls So Variable When Votes Are So Predictable?" *British Journal of Political Science*, 23(4), 409-451.

- Gerber, A. (1998), "Estimating the Effect of Campaign Spending on Senate Election Outcomes Using Instrumental Variables," *American Political Science Review*, 92(2), 401-411.
- Gerber, Alan (2004), "Does Campaign Spending Work? Field Experiments Provide Evidence and Suggest New Theory," *American Behavioral Scientist*, January, 47(5), 541-574.
- Gerber, Alan, and Donald Green (2000), "The Effects of Canvassing, Phone Calls, and Direct Mail on Voter Turnout: A Field Experiment," *American Political Science Review*, 94(3), 653-663.
- Gerber, Alan, James G. Gimpel, Donald P. Green, and Daron R. Shaw (2007), "The Influence of Television and Radio Advertising on Candidate Evaluations: Results from a Large Scale Randomized Experiment," Working Paper, Yale University.
- Goldstein, K. and P. Freedman (2002), "Campaign Advertising and Voter Turnout: New Evidence for a Stimulation Effect," *Journal of Politics*, 64 (3), 721-740.
- Gordon, B. and W. Hartmann (2010a), "Estimating the Effects of Third-Party Candidates in Presidential Elections," Working paper, Columbia University.
- Gordon, B. and W. Hartmann (2010b), "Structural Equilibrium Analysis of Political Advertising," Working paper, Columbia University.
- Granberg, D. and Brent, E. (1983), "When prophecy bends: The preference-expectation link in US Presidential elections," *Journal of Personality and Social Psychology*, v. 45(3), 477-491.
- Green, D. and Gerber, A. (2003), "The Underprovision of Experiments in Political Science," *The ANNALS of the American Academy of Political and Social Science*, September, 589(1), 94-112.
- Green, D. P. and Krasno, J. S. (1988), "Salvation for the Spendthrift Incumbent: Reestimating the Effects of Campaign Spending in House Elections," *American Journal of Political Science*, 32(4), 884-907.
- Groseclose, T. J. (2001), "A Model of Candidate Location when One Candidate has a Valence Advantage," *American Journal of Political Science* 45:862-886.
- Harrington, J. E. and Hess, G. D. (1996), "A Spatial Theory of Positive and Negative Campaigning," *Games and Economic Behavior*, 17, 209-229.
- Hedgcock, W., A. R. Rao, and H. Chen (2009), "Could Ralph Nader's Entrance and Exit Have Helped AL Gore? The Impact of Decoy Dynamics on Consumer Choice," *Journal of Marketing Research*, June, 330-343.
- Hillygus, D. Sunshine, and Todd G. Shields (2008). *The Persuadable Voter: Wedge Issues in Presidential Campaigns*. Princeton: Princeton University Press.
- Holbrook, T. M. (1994), "Campaigns, National Conditions, and U.S. Presidential Elections," *American Journal of Political Science*, 38(4), 973-998.
- Hotelling, Harold (1929), "Stability in Competition," *The Economic Journal*, 39(153), 41-57.

- Huber, G. A. and K. Arceneaux (2007), "Identifying the Persuasive Effects of Presidential Advertising," *American Journal of Political Science*, 51(4), 957-977.
- Jacobson, G. C. (1978), "The Effects of Campaign Spending in Congressional Elections," *American Political Science Review*, 72(2), 469-491.
- Jost, John T. and Jim Sidanius (2004), *Political Psychology*, New York: Psychology Press.
- Kaplan, Jonas T., Joshua Freedman and Marco Iacoboni (2007), "Us versus them: Political attitudes and party affiliation influence neural response to faces of presidential candidates," *Neuropsychologica*, 45, 55-64.
- Kim, Hakkyun, Akshay R. Rao and Angela Y. Lee (2009), "It's Time to Vote: The effect of Matching Message Orientation and Temporal Frame on Political Persuasion," *Journal of Consumer Research*, 35 (April), 877-888.
- Klein, J. and Ahluwalia R. (2005), "Negativity in the Evaluation of Political Candidates," *Journal of Marketing*, 69(Jan), 131-142.
- Krueger, Joachim and Russell W. Clement (1994), "The truly false consensus effect: An ineradicable and egocentric bias in social perception," *Journal of Personality and Social Psychology*, 67(4), 596-561.
- Lau, R. R., L. Sigelman, C. Heldman, and P. Babbitt (1999), "The Effects of Negative Political Advertisements: A Meta-Analytic Assessment," *American Political Science Review*, 93(4), 851-875.
- Lau, R. R., Lee Sigelman, and Ivy Brown Rovner (2007), "The Effects of Negative Political Campaigns: A Meta-Analytic Reassessment," *The Journal of Politics*, 69, 1176-1209.
- Levitt, S. D. (1994), "Using Repeat Challengers to Estimate the Effect of Campaign Spending on Election Outcomes in the U.S. Senate," *Journal of Political Economy*, 102(4), 777-798.
- Lin, T. M., J. M. Enelow, and H. Dorussen (1999), "Equilibrium in Multi-candidate Probabilistic Voting," *Public Choice* 98:59-82.
- Lovett, M. and M. Peress (2010), "Targeting Political Advertisements on Television," working paper, University of Rochester.
- Lovett, M. and Shachar, R. (2010a), "The Seeds of Negativity: Knowledge and Money," Working Paper, University of Rochester.
- Lovett, M. and Shachar, R. (2010b), "Integrated Marketing Communications in Political Marketing: An Empirical Study of Presidential Campaigns in 2000 and 2004," Working Paper, Duke University.
- Moorthy, S. (2010), "Strategic Considerations in Political Advertising," Working Paper, University of Toronto.
- Orhun, Y. and O. Urminsky (2010), "When Do Own Views Bias our Inferences? The Role of Similarity and Variance," Working paper, University of Chicago.

- Palfrey, T. (1984), "Equilibrium with 'Spatial Entry'," *Review of Economic Studies*.
- Phillips, J., J. Urbany, and T. Reynolds (2008), "Confirmation and the Effects of Valenced Political Advertising: A Field Experiment," *Journal of Consumer Research*, 34(Apr), 794-806.
- Quattrone, George A. and Amos Tversky (2004), "Contrasting Rational and Psychological Analysis of Political Choice," in *Political Psychology*, eds. Jost, John T. and Jim Sidanius, 244-258, New York: Psychology Press.
- Ridout, Travis N. and Michael Franz, "Using Advertising as a Window on Campaign Message Targeting", Working Paper, Washington State University (2010).
- Rossi, P. E., McCulloch, R. E., Allenby, G. M. (1996), "The Value of Purchase History Data in Target Marketing," *Marketing Science*, 15(4), 321-340.
- Schofield, N. (2003), "Valence Competition in the Spatial Stochastic Model," *Journal of Theoretical Politics* 15:371-383.
- Schofield, N. (2004), "Equilibrium in the Spatial 'Valence' Model of Politics," *Journal of Theoretical Politics* 16:447-481.
- Schofield, N. and I. Sened (2006), *Multiparty Democracy: Elections and Legislative Politics*. Cambridge: Cambridge University Press.
- Shachar, R. and Nalebuff, B. (1999), "Follow the Leader: Theory and Evidence on Political Participation," *American Economic Review*, 89(3), 525-547.
- Shachar, R. (2003), "Party Loyalty as Habit Formation," *Journal of Applied Econometrics*, 18 (3), 251-269.
- Shachar, R. (2009), "The Political Participation Puzzle and Marketing," *Journal of Marketing Research*, 46(6), 798-815.
- Shiv, B., J. Edell, and J. Payne (1997), "Factors Affecting the Impact of Negatively and Positively Framed Ad Messages," *Journal of Consumer Research*, 24 (Dec), 285-294.
- Skaperdas, S. and Grofman, B. (1995), "Modeling Negative Campaigning," *American Political Science Review*, 89(1), 49-61.
- Snyder, J. M. (1989), "Election Goals and the Allocation of Campaign Resources," *Econometrica*, 57(3), 637-660.
- Soberman, D. A. (2010), "Exploiting (Neutralizing) an Advantage in a Political Campaign," Working paper, University of Toronto.
- Soberman, D. A. and L. Sadoulet (2007), "Campaign Spending Limits and Political Advertising," *Management Science*, Vol. 53, No. 10, 1521-1532.
- Stokes, S. C. (2005), "Perverse Accountability: A Formal Model of Machine Politics with Evidence from Argentina," *American Political Science Review*, 99:315-325.