

Marketing and Politics: Models, Behavior, and Policy Implications

Session at the 8th 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)
Arison School of Business 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

August 2011

Abstract

The American presidential election is one of the largest, most expensive, and most comprehensive marketing efforts. Despite this fact, marketing scholars have largely ignored this campaign, as well as thousands of others for congresspersons, senators, and governors. This article describes the growth of interest in research issues related to political marketing. This emerging research area lies at the crossroads of marketing and political science, but these fields have developed largely independent of one another 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 are 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 marketing and political science is inconclusive on a number of fundamental questions about 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)? These questions fall at the intersection of marketing and political science. Despite early efforts to draw attention to such questions (Rothschild 1978), marketing scholars have largely ignored them so far, making this area 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, but the election process (e.g., its winner-take-all nature) provides voters a significant incentive to influence others and

thus dramatically magnify social considerations compared to many product and service choices. Third, there is a distinct temporal rhythm to political marketing, with most 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 (e.g., a candidate might participate in a race with little expectation of winning in order to build a reputation that could serve her in the future toward non-political goals).

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. 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, a simpler setting for testing theories. Thus, research on political marketing issues could even enhance our knowledge of fundamental issues in marketing.

Recently, research opportunities in political marketing have attracted a growing number of scholars across the field. The central role of competition naturally attracts those academics skilled in applying analytical and empirical modeling. The importance of communications and persuasion attracts those who seek to bridge behavioral work in consumer choice to political settings.

The goal of this paper is to stimulate discussion and new research at the intersection of politics and marketing. The primary contribution of this paper is to depict opportunities, overview recent research, and provide insights on a few of the most important questions. The next three sections discuss these questions and research that addresses them using analytical modeling (Section 2), empirical modeling (Section 3) and behavioral methods (Section 4). We organize the discussion around the methods employed to allow the reader to more easily relate the work to their own expertise. However, hoping to see more integrative work in the future, we organize the concluding section around broad topical areas that represent potential avenues for future research.

2 Theoretical Models of Elections

Two fundamental issues in theoretical models of political competition are a candidate's choice of policy position and the allocation of campaign resources. The basic candidate positioning framework builds on Hotelling (1929). Voters are distributed along a line with their locations representing their "ideal" policy positions, and a voter is assumed to vote for the candidate closest to her ideal position. Two candidates compete to obtain more than fifty percent of the vote by choosing positions along the line.¹ A key result is the *median voter theorem* (Downs 1957): in equilibrium, both candidates choose the position that is 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 Nitzan 1981), multi-candidate elections (Lin, Enelow, and Dorusen 1999), non-policy considerations and "valence" (Grosseclose 2001; Schofield 2003), and policy-motivation by the candidates (Calvert 1985).

Another important strategic decision that attracted a large body of research is campaigns' allocation of resources (Brams and Davis 1974; Bartels 1988) and how it depends on specific features of political competition. Snyder (1989) demonstrates the sensitivity of allocation decisions to the goals of competing parties and Soberman and Sadoulet (2007) discuss how campaign spending limits affect candidates' advertising strategies. Other work probes more deeply into specific allocation decisions, such as how much advertising dollars to allocate towards positive versus negative ads. Both Skaperdas and Grofman (1995) and Harrington and Hess (1996) conclude that front-runners should utilize less negative advertising than trailing candidates, but the former argues this stems from the effect of negative campaigning decreasing as frontrunners increase their vote share, whereas the latter argue that frontrunners' character traits make them naturally stronger candidates.

¹ 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.

The interest in political advertising goes beyond the split between positive and negative tone. Moorthy (2010) studies how the unique winner-take-all feature of elections affects advertising strategies. A basic observation is that elections gravitate naturally toward mixed-strategy equilibria. Unlike competition in commercial settings generically only two types of equilibria exist: (1) degenerate pure-strategy equilibria, in which all but one of the candidates does not advertise, effectively dropping out of the election, or (2) mixed strategies involving randomization in advertising spending. Since neither of these outcomes corresponds with reality, the implication is that useful models of political marketing must incorporate uncertainty in election outcomes as a key part of the candidates' decision environment. In the context of empirical models, this implies uncertainty in the election outcome is likely critical to be able to rationalize candidates' observed strategies.

Soberman (2010) also studies political advertising, but focuses on a different aspect – a candidate's targeting and content choice strategies. In his model advertising informs voters about personal characteristics of each candidate, and voters use a lexicographic decision rule (Bhadury et al. 1998) when comparing personal characteristics (valence) and party positioning. In equilibrium, 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.

The basic issues of targeting and content choice which Soberman (2010) studies are also of interest to empirical scholars. The next section describes empirical modeling in political marketing, and demonstrates the overlap between analytical work and empirical modeling. As we point out above, this is probably due to the mutual interest in competition and to its central role in political campaigns.

3 Empirical Models

While empirical models address similar issues to those that interest analytical modelers, they face, of course, different challenges – the most demanding is the endogeneity of the candidates' actions and

especially their advertising strategies. We start this section by describing the effort to get consistent estimates of the “demand side” (i.e., the effect of campaign spending on voters) and then move to estimation efforts of the “supply side” (i.e., candidates’ decisions).

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 examine the efficacy of specific activities: candidates may advertise on television, on the radio (e.g., Gerber et al., 2011), 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). Understanding how these techniques vary in their effectiveness is important to help inform candidates’ marketing strategies.

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 persuades voters as to which candidate to choose, but its effect on voter turnout is smaller or nonexistent (e.g., Huber and Arceneaux 2007).

The work above treats advertising messages as homogeneous, but the literature recognizes differences in what ads deliver. A notable branch of this literature examines the effect of negative advertising on voter turnout.² 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),

² 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).

and still others find no significant 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 depends on voters' prior knowledge (e.g., Lovett and Shachar 2011) 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.³ 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. In the rest of this subsection we clarify why the issue of endogeneity is especially problematic in the context of political marketing, discuss some methods used to tackle this challenge, and describe some of the main results.

In contrast to standard differentiated product models (e.g., Berry, Levinsohn, and Pakes 1995, hereafter BLP) where ignoring price endogeneity leads to underestimated price sensitivity, Gordon and Hartmann (2011a) show that in an election, the direction of bias due to advertising endogeneity is ambiguous. For example, in a presidential election, a large unexpected random event in one state could lead a candidate to advertise more or less depending on the expected voting margin in that state. Further, Lovett and Peress (2010) argue that endogeneity in advertising due to geographic targeting can lead to exactly the wrong conclusion about whether advertising has a persuasive or mobilization effect. For example, if the persuasion effect dominates, candidates should target areas with high turnout, leading to positive correlation between turnout and advertising, and a (false) turnout effect.

³ Much of the recent research relies 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.

Recent research has used randomized field experiments, natural experiments, and instrumental variables (IV) to address these endogeneity problems, which have led to more consistent findings. A recent example using a field experiment is Gerber et al. (2011),⁴ 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, and find that televised ads have strong but short-lived effects on voters' preferences. Using a natural experiment, Huber and Arceneaux (2007) leverage the fact that in presidential elections some media markets overlap battleground and non-battleground states, exposing some voters to higher levels of advertising than a candidate necessarily intended. They find little evidence that televised ads mobilize voters to turn out to vote, but strong evidence that ads persuade them to vote for a particular candidate.

Strategies that enforce exogeneity through variables that are ex-ante believed uncorrelated with the unobserved variable have been applied in the literature on aggregate candidate spending including the use of instruments (e.g., Green and Krasno, 1988 and Gerber, 1998) and panel methods (Levitt 1994). Two recent papers introduce new approaches to handle the endogeneity of political advertising effects. Gordon and Hartmann (2011a) apply the methodology from BLP 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. They find a robust positive effect of advertising that is similar to estimates based on experimental variation. The estimated elasticity is approximately 0.05, which translates into approximately a 2% increase in vote share given an additional 1000 GRPs. 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

⁴ 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.

characteristics. They find once controlling for endogeneity, the effect on turnout decreases, becoming statistically insignificant, while the effect on candidate choice increases in strength.

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 and, in many cases, vigorous competition. 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). Such methods are well suited for two important challenges – endogeneity and incorporating competition into the estimation.

How should a candidate allocate campaign funds across different geographic units or message types? While several recent papers consider the allocation of advertising budgets in Presidential elections across states (Shachar 2009) and media markets (Gordon and Hartmann 2011b), others (Lovett and Shachar 2011) were interested in the allocation across negative and positive messages. Specifically, Lovett and Shachar (2011) structurally estimate a model of Congressional candidate decisions of both advertising expenditures and campaign tone and find that increased voter knowledge and larger campaign budgets (i.e., less difficult fundraising) lead to greater incentives to go negative in political advertisements. These findings not only identify new factors involved in the decision to “go negative,” they also demonstrate another dimension of asymmetry between negative and positive messages in their effect on voters.

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 and that simply by targeting different shows campaigns could improve the benefit of advertising by as much as 100%. 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. To further develop our understanding of the dynamics of campaign decisions, and the role of competition, Lovett and Shachar (2010) 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 while advertising decisions are strongly related to opponent decisions and polls, they are not related to 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 (2011b) 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 assess the implications of such a change on advertising allocation and subsequently on voting outcomes. Although their results are still in process, their framework can be applied to a variety of counterfactuals in other types of political races.

4 Behavioral Topics in Political Marketing

Behavioral science has focused largely on the development and persistence of individuals’ attitudes, how those attitudes might be changed through persuasion, and the relationship between enduring and

malleable attitudes on ultimate choice. Further, the literature has examined the impact of social and group influences on attitudes, persuasion and choice. 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 including attitudes as well as 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). These three broad areas of attitude change through persuasion, social influences and choice that are common to both behavioral science and political persuasion are addressed here.

In the political context, attitude and attitude change research is focused on examining the conditions under which an individual's pre-existing preference for one or another candidate can be reversed or strengthened. Kim et al. (2009) rely on temporal construal theory to demonstrate that abstract messages are more effective at strengthening the attitudes of uninformed voters relative to concrete messages, but only when the election is temporally distant. Klein and Ahluwalia (2005) find that the negativity bias – the tendency to overweight negative information about a candidate -- is only present for individuals who are already negatively predisposed towards the candidate. Similarly, research indicates that negatively framed ads produce a backlash effect when they are perceived to be unfair (Shiv, Edell, and Payne 1997). Further, Phillips, Urbany, and Reynolds (2008) demonstrate that the response to negative ads may depend on prior attitudes.

Underlying any persuasion strategy, there exist a number of elements that are critical to the success of the message. The style, the source, the timing and perhaps most important the content (or argument) of the persuasive message is central to its success. Despite a body of work on the process of political persuasion (e.g., Chong and Druckman 2007), little is known about the specific factors that make

a persuasive argument in the political context successful. Arceneaux (2010) examines whether pre-existing cognitive biases influence the perceived strength of political arguments. Drawing from research on neurobiology and emotions, he proposes and finds that individuals are more likely to be persuaded by arguments that evoke loss aversion and in-group bias. Specifically, individuals who experience fear when confronted with a situation in which they may incur a loss or face the prospect of being excluded from the in-group (i.e., “out-group threats” are salient) are more likely to be persuaded by arguments that offer solutions which avert losses and address threats to their in-group status.⁵

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). 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 (2011) measure beliefs about others’ evaluations of the two presidential candidates in the 2008 election. They exploited both cross-sectional variation and individual changes after the first presidential debate to identify the effect of own preferences on beliefs about other voters’ preferences. Specifically, they find that not only do a voter’s own candidate evaluations affect her beliefs about supporters of the same candidate, but by drawing an analogy, own evaluations affect beliefs about supporters of the opposing candidate, too. This implies voters’ biased beliefs about the nature of the opposing candidates’ support may systematically affect their decisions on issues such as whether to vote, volunteer, or contribute.

Finally, though sparse, research on the marketing dimensions of political campaigns is interested

⁵ An example of a loss averse argument in a political context would be, “My opponent’s policy will cost jobs.” See Cobb and Kuklinski (1997) for a discussion of loss aversion in the context of political arguments.

in voter choice. For instance, 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. In a series of experiments and field studies, Hoegg and Lewis (forthcoming) find that a candidate’s physical appearance, party affiliation, and advertising spending interact to influence voter choices. Thus, while political campaigns, like marketing campaigns, are intensely interested in persuading, their ultimate goal is to influence choice. Because the precursors to choice are multifarious and often path dependent, campaigns are interested in generating volunteers, donations of time and money, generating buzz and word-of-mouth, so as to eventually yield their preferred outcome.

In sum, though similar to product choices, political choices are elicited in different contexts. The identification of boundary conditions that distinguish political choice from product choice could help enrich research on the topic. The psychology of persuasion is likely similar in both political contexts and standard marketing situations, but there are important differences that make this a fruitful area for further research.

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: Do elections 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: a Cross-National Analysis Integrating Spatial and Behavioral Factors*. 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, S., and S. 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, S., J. Levinsohn and A. 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, J., P. M. Griffin, S. O. Griffin and L. S. Narasimhan (1998), "Finding the majority-rule equilibrium under lexicographic comparison of candidates," *Social Choice and Welfare*, Vol. 15, 489-509.
- Brams, S. J. and M. D. Davis (1974), "The 3/2's Rule in Presidential Campaigning," *American Political Science Review*, 68(1), 113-134.
- 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, Y., C. Narasimhan, and Z. J. 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.
- Cobb, Michael D., and James H. Kuklinski (1997). "Changing Minds: Political Arguments and Political Persuasion," *American Journal of Political Science*, 41 (1): 88-121.
- 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 19th, 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 (2011), "How Large and Long-lasting Are the Persuasive Effects of Televised Campaign Ads? Results from a Randomized Field Experiment," *American Political Science Review*, 105(1), 135-150.
- 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. R. and W. Hartmann (2011a), "Advertising Effects in Presidential Elections," Working paper, Columbia University.
- Gordon, B. R. and W. Hartmann (2011b), "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*, 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.
- Hoegg, M. and M. Lewis (2011), "The Impact of Candidate Appearance and Advertising Strategies on Election Outcomes?" *Journal of Marketing Research*, forthcoming.
- 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., J. Freedman and M. 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. (2011), "The Seeds of Negativity: Knowledge and Money," *Marketing Science*, 30 (3), 430-446.
- Lovett, M. and Shachar, R. (2010), "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.
- 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.
- Rothschild, M. (1978), "Political Advertising: A Neglected Policy Issue in Marketing," *Journal of Marketing Research*, 15(1), 58-71.
- 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.
- 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.