A Reassessment of Presidential Campaign Strategy Formation and Candidate Resource Allocation[1]

Andrew Reeves[2] Lanhee Chen[3] Tiffany Nagano[4]

July 21, 2003

[1]We thank Daron Shaw for providing his data and generously responding to our inquiries. We also wish to thank Scott Ashworth, Jennifer Fitzgerald, Thomas Holbrook, Kosuke Imai, Gary King, David Konisky, and Jasjeet Sekhon for their helpful comments.

[2]Doctoral Candidate, Department of Government, Harvard University. (Littauer Center, North Yard, Cambridge, Massachusetts 02138; http://www.people.fas.harvard.edu/∼reeves, 617-576-3839, reeves@fas.harvard.edu)

[3]Doctoral Candidate, Department of Government, Harvard University. (Littauer Center, North Yard, Cambridge, Massachusetts 02138, 617-216-5588, lchen@fas.harvard.edu)

[4]Undergraduate, Harvard University. (Littauer Center, North Yard, Cambridge, Massachusetts 02138, nagano@fas.harvard.edu)

Abstract

Daron Shaw (1999) argues in "The Methods behind the Madness: Presidential Electoral College Strategies, 1988-1996" that candidates formulate state-level general election campaign strategies based on a number of predictable and exogenous factors, such as the cost of television advertisements and electoral vote share. Shaw (1999) further asserts that these strategies are strong independent predictors of candidate resource allocation. His article supports these conclusions with what are claimed to be results from ordered probit and two-stage least squares (2SLS) regressions, but we demonstrate that both are in fact ordinary least squares (LS) regressions. When we implement the methods that Shaw (1999) claims to use, we find that all key substantive conclusions in the article vanish. We show that the factors attributed to the formation of electoral college strategy are insignificant and that whether these strategies have any independent effect on the allocation of campaign resources cannot be ascertained from his (claimed or actual) methods and data.

In "The Methods behind the Madness: Presidential Electoral College Strategies, 1988-1996," Daron Shaw presents an explanation of the systematic components of presidential campaigns. Shaw (1999) concludes that candidates formulate campaign strategy based on predictable factors such as competitiveness, electoral vote share, and the cost of television advertisement buys. Shaw (1999) then finds that electoral college strategy, as determined by these factors, is a strong independent predictor of campaign resource allocation. Particularly remarkable are the electoral college strategies that Shaw compiles for each major party presidential candidate for the 1988, 1992, and 1996 elections. These data, compiled from campaign and journalistic sources, provide a classification system directly from our source of inquiry, the actual campaigns. The electoral college strategy variable measures how presidential campaigns classify states as: base Republican; marginal Republican; battleground; marginal Democratic; or base Democratic. Shaw also collects and utilizes data on candidate appearances and television advertisement buys.[1] Shaw (1999) finds that electoral college strategies are solid indicators of campaign resource allocation, and that these classifications are based on factors such as state competitiveness, electoral vote share, and the cost of television advertisement buys.[2]

Shaw (1999) claims to have used an "ordered probit" (p. 906) analysis to measure the factors that influence electoral college strategy, while a "two-stage least squares (2SLS)" (p. 907) framework is claimed to have been used to measure electoral college strategy's effect on campaign resource allocation. In attempting to replicate Shaw's results, we discover that in fact both analyses are actually ordinary least squares (LS). We also find that all substantive conclusions in Shaw (1999) no longer hold or else cannot be supported.[3] Television advertisement costs, competitiveness, and

[1]Television advertising buys are measured using gross rating points (GRPs). A GRP is a measure of television market share; if a campaign procures 100 GRPs, then 100 percent of a television market view the campaign ad once (Shaw, 1999: p. 894).

[2]The authors wish to thank Daron Shaw for providing his data, following the "replication standard" as described by King (1995).

[3]Daron Shaw has made us aware that he is conducting further analysis with additional, improved data. Our analysis here is based on data used and presented in Shaw (1999).

number of electoral college votes are extremely weak predictors of electoral college strategy. The claims of the impact of electoral college strategy on campaign resource allocation cannot be evaluated based on the data.

We proceed by considering the ordered probit analysis (explaining electoral college strategy) and then the 2SLS analysis (explaining campaign resource allocation). For each, we briefly compare the results as published in Shaw (1999) to LS and then to an implementation of the method described in the text of the article. Following this analysis, we discuss why LS is ill-suited given the data. Lastly, we show that the substantive conclusions from Shaw (1999) are dramatically altered by implementing the analysis prescribed in the text.

1 Explaining Electoral College Strategy: An Ordered Probit Analysis

1.1 Replication

Shaw's (1999) analysis seems to indicate that the formation of electoral college strategies are determined by competitiveness, electoral votes, tv ad cost, and interactions between competitiveness and electoral votes, as well as competitiveness and tv ad cost. The results are claimed to be statistically significant and substantively very important. The dependent variable is an ordered classification made by campaigns where those states classified as base Republican or base Democrat are considered least important to electoral victory and coded zero; those states classified as marginal Republican or marginal Democrat are more important than base states but less important than battleground states and are coded one; and those states classified as battleground are the most important and are coded two. An ordered probit model is appropriate for this analysis since it takes advantage of the known feature of the dependent variable: that it can only be observed as one of three ordered values.

Table 1: A Comparison of Published Results, LS, and Ordered Probit: Factors Influencing Republican Electoral Strategies, 1988-1996

	Republican Strategy		
Independent Variable	Published	LS	Ordered Probit
Intercept	−4.995	−4.995	9.985
	(3.041)	(3.041)	(6.580)
Competitiveness[a]	0.122	0.122	0.211
	(0.067)	(0.067)	(0.143)
Electoral Votes	0.065	0.065	0.181
	(0.914)	(0.194)	(0.393)
TV Ad Cost[b]	2.307	2.307	0.936
	(2.233)	(2.233)	(5.012)
1992 Dummy	0.379	0.379	0.777
	(0.136)	(0.136)	(0.271)
1996 Dummy	−0.021	−0.021	0.057
	(0.136)	(0.136)	(0.279)
Competitiveness ×	0.004	−0.001	−0.004
Electoral Votes	(0.002)	(0.004)	(0.008)
Competitiveness ×	5.582	5.579[c]	−0.028
TV Ad Cost	(0.502)	(5.023)	(0.112)

Notes: Standard Errors are presented in parentheses; published results present these figures as asymptotic standard errors. Published results reproduced from Shaw (1999, p. 906). As per Shaw (1999: p. 905), electoral college strategy variable is collapsed from five to three variables where 0 is base Republican/Democrat, 1 is marginal Republican/Democrat, and 2 is battleground.

[a] As per Shaw(1999, p. 905), competitiveness is calculated as follows: 50 minus the absolute value of 50 minus the average Republican share of the two-party vote from 1964-1984. This creates a scale from 0 to 50, where 50 indicates the most competitive state where each major party wins an average of 50% of the vote; and where 0 would indicate the least competitive state where a major party wins an average of 100% of the vote.

[b] TV Ad Cost is calculated as follows: (1/cost 10 GRPs)

[c] We derive this similar coefficient and standard error by multiplying the original tv ad cost variable by −0.01.

Tables 1 and 2 present Republican and Democratic strategy as the dependent variable and separately compare: in column 1, the results as published in Shaw (1999); in column 2, LS results; and, in column 3, ordered probit results. The published "ordered probit" coefficients and standard errors for competitiveness, electoral votes, tv ad cost, the dummy variables for 1992 and 1996, and the intercepts of the models, are *identical* to those from LS. *Tables 1 and 2 indicate that the results pre-*

Table 2: A Comparison of Published Results, LS, and Ordered Probit: Factors Influencing Democratic Electoral Strategies, 1988-1996

	Democratic Strategy		
Independent Variable	Published	LS	Ordered Probit
Intercept	−3.031	−3.031	4.061
	(3.148)	(3.148)	(6.193)
Competitiveness[a]	0.084	0.084	0.094
	(0.069)	(0.069)	(0.135)
Electoral Votes	−0.002	−0.002	−0.041
	(0.201)	(0.201)	(0.373)
TV Ad Cost[b]	0.962	0.962	−1.962
	(2.312)	(2.312)	(4.842)
1992 Dummy	0.320	0.320	0.612
	(0.141)	(0.141)	(0.261)
1996 Dummy	0.280	0.280	0.521
	(0.141)	(0.141)	(0.261)
Competitiveness ×	0.004	0.000	0.001
Electoral Votes	(0.002)	(0.004)	(0.008)
Competitiveness ×	2.980	2.977[c]	0.027
TV Ad Cost	(0.520)	(5.201)	(0.108)

Notes: Standard Errors are presented in parentheses; published results present these figures as asymptotic standard errors. Published results reproduced from Shaw (1999, p. 906). As per Shaw (1999, p. 905), electoral college strategy variable is collapsed from five to three variables where 0 is base Republican/Democrat, 1 is marginal Republican/Democrat, and 2 is Battleground.

[a] As per Shaw(1999, p. 905), competitiveness is calculated as follows: 50 minus the absolute value of 50 minus the average Republican share of the two-party vote from 1964-1984. This creates a scale from 0 to 50, where 50 indicates the most competitive state where each major party wins an average of 50% of the vote; and where 0 would indicate the least competitive state where a major party wins an average of 100% of the vote.

[b] TV ad cost is calculated as follows: (1/cost 10 GRPs)

[c] We derive this similar coefficient and standard error by multiplying the original tv ad cost variable by −0.01.

sented in Shaw (1999) as "ordered probit" are in fact LS, a method that can, and in this case does, produce biased estimates of the model. Consider, for example, the fitted results that the LS regression produces. A LS model predicts an electoral college strategy value of -0.218 for Utah for Senator Bob Dole's campaign in the 1996 presidential election. This value is not easily interpretable because the outcomes are only three discrete values coded as zero, one, and two. In addition, the ordered

probit model does not assume an equal interval of space between each realization of the dependent variable; it allows different levels of explanatory variables for each realization of the dependent variable. LS assumes a linear relationship where the differences between each realization of the dependent variable are equal. In general, and as we show in this case, the two procedures produce different parameter estimates and yield very different interpretations.[4]

1.2 Reanalysis

We implement an ordered probit analysis and find that electoral college strategy is not strongly predicted or explained by the factors as claimed in Shaw (1999). The article finds interactive effects between competitiveness and electoral votes in determining electoral college strategy; states that have a lot of electoral votes and are highly competitive will be targeted as more electorally important. For instance, let us consider the following finding from the article:

> [A] state that was 10 electoral votes above the mean and was one point more competitive than the mean was 28% more likely to have been in the battleground category (Shaw, 1999, p. 905).

In Figure 1 we present a ternary plot to graphically illustrate this scenario based on a genuine ordered probit analysis.[5] The ternary plot was first used for empirical data in political science by Katz and King (1999), and we base our presentation of the ternary plot on this example. Each point, representing a simulated state, contains three pieces of information: the probability that point is classified as either marginal, base, or battleground, where the total probability sums to one. A

[4]Shaw (1999) states that "the parameter estimates [from the table presented as an ordered probit analysis] thus represent the influence of the independent variables on the probability that a state is classified as base, marginal, or battleground" (Shaw 1999, p. 905); LS cannot be interpreted this way. LS parameters are the impact a, *ceteris paribus*, one unit increase in the independent variable has on the dependent variable.

[5]We find that the scenario presented in Shaw (1999) results in an increase of between 24%-25% in the likelihood that a state will be classified as battleground based on the biased LS estimators; we are unsure how Shaw (1999) arrives at determining an increase of 28%.

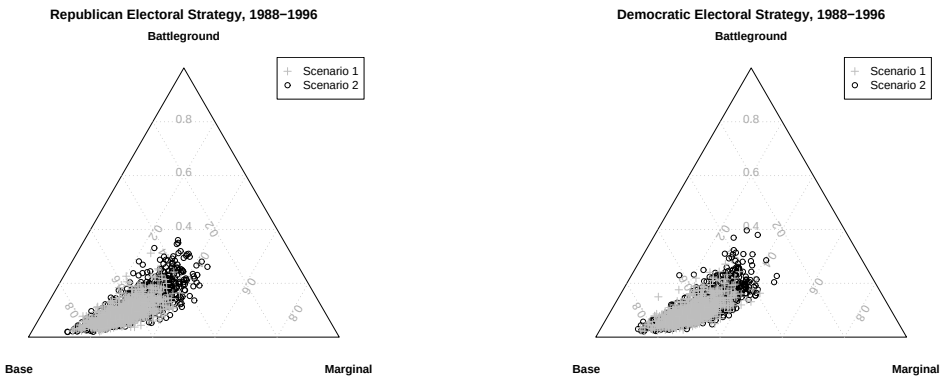

Figure 1: Ternary Plot: First Differences for Republican Electoral College Strategy and Democratic Electoral College Strategy. Scenario 1 (gray crosses) is where values of competitiveness, electoral votes, and tv ad cost are set at mean values. Dummy variables for 1992 are set to zero, although no substantive changes occur if they are set to mean values. Scenario 2 (black circles) is where mean value of competitiveness is increased by one point and mean value of electoral votes is increased by ten. All other variables are held at the same values as in scenario 1. Each set of parameters is simulated 1,000 times.

three dimensional plane would be the appropriate space to plot these relationships; however a ternary plot, as presented in Figure 1, allows us to present this information in two dimensional space. Each vertex of the triangle represents an electoral college classification. The closer a point is to a vertex, the higher the probability that the state will be classified in that category, where a point located on the vertex labelled battleground has a probability of one as being classified as battleground and a probability of zero as being classified as base or marginal.

Our ordered probit analysis finds that this scenario produces about a five percentage point increase in the likelihood that a state will be classified as battleground, a far less dramatic change than Shaw (1999) predicts; furthermore, this conclusion is marked by an extremely high degree of uncertainty. As seen in Figure 1, under the scenario where the variables of the model are held at their means, the probability that a state is classified as battleground is 0.078 with a 95% confidence interval run-

ning from 0.031 to 0.140.[6] Under the scenario where competitiveness is increased by one point and electoral vote size is increased by ten, the probability that a state is classified as battleground is 0.130 with a 95% confidence interval running from 0.049 to 0.244. Based on these confidence intervals, the aforementioned increase in competitiveness could actually *decrease* the probability of a state being classified as battleground by 0.091. This result is a function of the high level of uncertainty in the model as opposed to an insight into campaign strategy. This fact is illustrated in Figure 1; the black circles (representing the scenario where electoral votes and competitiveness are increased) scatter only slightly away from the gray crosses (representing the scenario where electoral votes and competitiveness are held at their means).

In implementing the ordered probit analysis, the substantive conclusions reached in Shaw (1999) are dashed; the ordered probit analysis yields not one coefficient for a quantity of interest that reaches conventional levels of statistical significance. Electoral college strategy, as defined by Shaw (1999), is not a strong function of competitiveness, electoral votes, or tv ad costs.

2 Explaining Campaign Resource Allocation: A Two Stage Least Squares Analysis

2.1 Replication

Shaw (1999) attempts to determine the effect that electoral college strategy has on a candidate's allocation of campaign resources as measured by both television advertising buys and candidate appearances. The initial relationship that Shaw

[6]This is considering a scenario for a Republican candidate; the findings are substantively the same for a Democrat.

(1999) attempts to evaluate is:

$$Y = \beta_{11}X_1 + \beta_{12}X_2 + \beta_{13}X_3 + \epsilon, \tag{1}$$

where Y is a vector containing the quantity of resources allocated; X_1 is a vector of discrete ordinal values measuring electoral college strategy for each state, as determined by the respective campaigns, where 0 = base Republican or Democratic, 1 = marginal Republican or Democratic, and 2 = battleground; X_2 is a vector of values of opponent's resource allocation; X_3 is a matrix of explanatory variables and dummy variables for each election year[7]; and, ϵ is a vector of error terms.

Shaw (1999) posits that the opponent's resource allocation and the candidate's campaign strategy are endogenous to campaign resource allocation. Put another way, the explanatory variables (candidate strategy and opponent's resource allocation) have separate reciprocal relationships with candidate resource allocation, the dependent variable. A LS regression is inappropriate because, as Shaw (1999) points out, "both strategy and the opposition's campaigning are endogenous" and are "dependen[t] on the error term" of the equation (Shaw, 1999: p. 907).

To obtain a more accurate estimate of the independent impact that electoral college strategy and candidate's strategy have on a candidate's resource allocation decisions, Shaw (1999) claims to implement a two-stage least squares regression. A 2SLS analysis may be appropriate when an endogenous variable is present in a given equation, violating the exogeneity assumption of LS regression (that the explanatory variable is uncorrelated with the error term of the equation). Thus, the inclusion of an endogenous variable in a LS regression produces biased estimators.

In the first stage of a 2SLS regression, an instrumental variable is used to purge each of the endogenous variables of their correlation with the error term. An instru-

[7]The explanatory variables included are competitiveness, number of electoral votes, tv ad cost and the interactions between competitiveness and tv ad cost and competitiveness and electoral votes.

mental variable must affect the dependent variable only through the explanatory variable for which it is an instrument. In other words, the instrumental variable must be highly correlated with the explanatory variable but may not be *independently* correlated with the dependent variable. Tables 3 and 4 present results for factors explaining campaign resource allocation as separately measured by candidate appearances and television ad buys for each party. Each table contains: the results as published in Shaw (1999) in column 1; LS results in column 2; and our best implementation of 2SLS results in column 3.

Table 3: A Comparison of Published Results, LS, and 2SLS: Electoral College Strategy's Influence on Republican Campaign Resource Allocation, 1988-1996

	Television Advertisement			Candidate Appearances		
	Published	LS	2SLS[a]	Published	LS	2SLS[a]
Electoral College	809.44	809.44	2,604.081	1,592	1.592	0.403
Strategy	(168.99)	(168.99)	(1,138.136)	(0.253)	(0.253)	(2.388)
Opponent's Resource	0.699	0.699	0.111	0.434	0.434	1.106
Allocation	(0.060)	(0.060)	(0.360)	(0.078)	(0.078)	(0.217)
1992	2,633.14	2,170.46	2,055.834	−4.032	−0.859	−0.036
	(604.45)	(231.54)	(459.867)	(2.923)	(0.394)	(1.110)
1996	374.96	154.58	627.297	0.298	0.413	0.505
	(434.28)	(228.74)	(418.839)	(0.421)	(0.376)	(0.465)
Intercept	−3,330.78	1575.05	863.780	13.047	−8.392	0.880
	(4,318.99)	(5,039.77)	(3,205.980)	(9.699)	(8.468)	(6.734)
Residual Standard Error	1,119.52	1,119.52	1,547.286	1.88	1.88	2.320

Notes: Standard errors are presented in parentheses. Published results reproduced from (Shaw, 1999, p. 910). As per Shaw (1999, p. 905), electoral college strategy variable is collapsed from five to three variables.

[a]Electoral votes and tv ad cost are used as instruments and are therefore excluded from the second stage regression.

Table 4: A Comparison of Published Results, LS, and 2SLS: Electoral College Strategy's Influence on Democratic Resource Allocation, 1988-1996

	Television Advertisement			Candidate Appearances		
	Published	LS	2SLS[a]	Published	LS	2SLS[a]
Electoral College	535.54	235.54	530.694	0.672	0.672	0.518
Strategy	(183.91)	(183.91)	(1,675.649)	(0.255)	(0.255)	(1.129)
Opponent's Resource	0.709	0.709	0.507	0.384	0.384	0.824
Allocation	0.060	(0.063)	(0.825)	(0.071)	(0.071)	(0.129)
1992	−7,306	−1,245.07	−703.344	−2.893	−0.565	−0.310
	(4,433.17)	(279.95)	(2,114.295)	(2.790)	(0.379)	(0.584)
1996	−382.89	213.02	258.645	−2.091	−0.466	−0.569
	(1,318.22)	(229.18)	(288.093)	(1.960)	(0.360)	(0.508)
Intercept	6,556.63	−1,391.66	−2,199.729	12.147	3.233	1.274
	(8,273.12)	(5,055.34)	(2,682.791)	(14.956)	(8.200)	(3.482)
Residual Standard Error	1,129.66	1,129.66	1,204.580	1.82	1.82	2.09

Notes: Standard errors are presented in parentheses. Published results reproduced from (Shaw, 1999, p. 910). As per Shaw (1999, p. 905), electoral college strategy variable is collapsed from five to three variables.

[a]Electoral votes and tv ad cost are used as instruments and are therefore excluded from the second stage regression.

The published results are strikingly similar to LS. Tables 3 and 4 exhibit these similarities: as seen by comparing columns 1 and 2, taking into account two apparent transposition errors[8], *the coefficients and standard errors reported in Shaw (1999) for the quantities of interest are identical to LS estimators.* Using LS, we also precisely replicate model's standard error and adjusted R^2 for all four of the dependent variables that Shaw (1999) reports.

2.2 Reanalysis

The validity of 2SLS hinges on the strength and validity of its instrument. Shaw (1999) identifies candidate strategy and opponent resource allocation as endogenous variables for which instruments need to be found. The instrument must influence the dependent variable (candidate resource allocation) only through the variable for which it is being used as an instrument (in this case opposition's resource allocation and candidate strategy). Others have used an instrumental variable approach to analyze reciprocal relationships between incumbent and challenger spending in congressional election outcomes. For example, Green and Krasno (1988) use a candidate's own lagged individual spending as an instrument for incumbent spending, while Gerber (1992) uses challenger wealth, state population, and lagged spending from the previous election.

The implementation as described in the text of Shaw (1999) of 2SLS is problematic. We are unable to ascertain the instrument for candidate strategy based on the description in the article. The instrument for opponent's resource allocation is also

[8]When Republican candidate appearances is the dependent variable, Shaw (1999) estimates a coefficient for electoral college strategy of 1,592 (meaning *ceteris paribus* a one unit increase in electoral college strategy yields on average an increase of 1,592 more candidate visits). The LS coefficient is 1.592, and both the LS and published standard error for this coefficient are identical, at 0.253.

Another difference lies in the published estimate that a one unit increase in electoral college strategy (e.g. going from a marginal to battleground state) will result in the purchase of 535.54 additional GRPs worth of Democratic tv ad buys, with a standard error of 183.91 GRPs. Using LS, we estimate a coefficient of 235.54 GRPs with an identical standard error of 183.91 GRPs. Thus, any differences between Shaw's parameter estimates and the ones that we derive through LS appear to be the results of transpositions or typographical errors.

problematic. Shaw (1999) reports that:

> The instrumental variables for opponent's resources are Democratic TV Ad Buys (when Republican TV Ad Buys is the dependent variable), Republican TV Ad Buys (when Democratic TV Ad Buys (when Republican TV Ad Buys is the dependent variable), Democratic Candidate Appearances (when Republican Candidate appearances is the dependent variable), and Republican Candidates Appearances (when Democratic Candidate Appearances is the dependent variable) (Shaw, 1999, 910).

If this implementation were to be followed, then the instrument in the first stage would be the dependent variable in the second stage, resulting in a correlation of 1. We do not attempt to implement this method since its results would yield extremely biased estimators.

Our best alternative is to consider competitiveness, electoral college vote share, and tv ad cost as possible instruments; however, this approach also comes with methodological shortcomings. Consider the case where Republican candidate appearances is the variable to be explained: which of the three variables would impact Republican candidate appearances only through Democratic candidate appearances? Then, when evaluating Democratic resource allocation, we must find an instrument that affects Democratic candidate appearances only through Republican candidate appearances. Therefore if, for example, competitiveness is used as an instrument for Republican candidate appearances, it is theoretically contrary to use competitiveness as an instrument for Democratic candidate appearances. We present our best implementation of 2SLS only in an attempt to replicate the analysis of Shaw (1999), which we are unable to do using the methods as described in the text. Cyclical relationships between campaign resource allocation and the lack of a valid instrument prevent an analysis that brings us closer to understanding the systematic effects of campaign strategy.

The results from 2SLS as described in the text of the article are marked by an

extreme degree of uncertainty. A one unit increase in the instrumental variable for electoral college strategy yields a 531 point increase in television advertisement buys for Democratic candidates with a 95% confidence interval running from -2,781 to 3,843. This uncertainly is typical for both candidate appearances and television advertisements and for both Republican and Democratic candidates. Implementation of the methods described in Shaw (1999) yield very little information about the effect of electoral college strategy on campaign resource allocation.

3 Conclusion

Shaw (1999) proposes that campaigns form predictable strategies and then generally adhere to them throughout the campaign. While other works, such as Brams and Davis (1974) explicitly assume *ex ante* allocation of resources in terms of a game theoretic model, Shaw (1999) attempts to demonstrate this as an empirical truth. The analysis goes so far as to warn against seeing campaign behavior as a function of opponent resource allocation, stating that:

> [i]t would be wrong to overstate the dynamic aspect of these strategies; most of the changes were minor, involving the addition or deletion of a few states from the battleground category (Shaw, 1999, 910).

This static conception of campaign behavior contrasts with views of other scholars. For example, Colantoni, Levesque and Ordeshook (1975) argue that campaign strategies are reactive and adaptive. This dynamic view of campaign strategy formation could be one explanation for why Shaw's (1999) model fairs so poorly.

Another possibility is that the electoral college strategy variable may simply be a bad measure of campaign strategy. Instead of a long term, systematic statement of strategy, electoral college strategy may reflect a campaign's short-term expectations about opponent resource allocation.

We obviously do not doubt the claim that candidates act strategically and that they target their resources where they will matter most. But when we follow the methods as prescribed in Shaw (1999), we find that the substantive conclusions are reversed or at least characterized by a high level of uncertainty; no evidence exists in Shaw's data, using the methods he claimed to use, for the proposition that candidate strategy is a predictable function of competitiveness, tv ad costs, and electoral vote share. Shaw's (1999) implementation and analysis of actual resource allocation is problematic: it identifies no viable instrument for either of the variables that are specified as endogenous.

Shaw gathers a notable array of data, access to some of which political scientists have not had before, and poses important questions about candidate behavior during general election campaigns. But future research should focus on determining whether there are, in fact, systematic aspects to campaign strategy formation and whether candidates stick to these strategies during the heat of a presidential campaign.

References

Brams, Steven J. and Morton D. Davis. 1974. "The 3/2's Rule in Presidential Campaigning." *American Political Science Review* 68:113–134.

Colantoni, Claude S., Terrence J. Levesque and Peter C. Ordeshook. 1975. "Campaign Resource Allocations Under the Electoral College." *American Political Science Review* 69:141–154.

Gerber, Alan S. 1992. "Estimating the Effect of Campaign Spending on Senate Election Outcomes Using Instrumental Variables." *American Political Science Review* 92:401–411.

Green, Donald P. and Jonathan S. Krasno. 1988. "Salvation for the Spendthrift Incumbent: Reestimating the Effects of Campaign Spending in House Elections." *American Journal of Political Science* 32:884–907.

Katz, Jonathan N. and Gary King. 1999. "A Statistical Model for Multiparty Electoral Data." *American Political Science Review* 93:15–32.

King, Gary. 1995. "Replication, Replication." *PS: Political Science and Politics* 28:444–452.

Shaw, Daron R. 1999. "The Methods behind the Madness: Presidential Electoral College Strategies, 1988-1996." *The Journal of Politics* 61:893–913.