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A LOW INFORMATION THEORY OF BALLOT POSITION EFFECT

David Brockington

This article suggests a theory of ballot position effect based on the amount of information present in the electorate while accounting for several alternative hypotheses. The more information that voters have, all other factors held constant, the less a role ballot position will play. Additionally, the role of electoral institutions in mitigating or magnifying the effect is considered. The theories are tested with precinct-level data from city council elections held in Peoria, Illinois, from 1983 through 1999. Position effect is found to account for a bonus of 0.7% to 5.2% of the precinct-level vote share per position on the ballot. The level of aggregate information and the institutional setting explain a significant share of ballot position effect, even while examined in the presence of alternative explanations such as incumbency, endorsement, campaign expenditure, gender, and race.

Key words: ballot position effect; low-information voting; municipal elections.

TOWARD A THEORY OF BALLOT POSITION EFFECT

The voting behavior literature of the past 20 years has figuratively taken Key's dictum (1966) that "voters are not fools" to heart. This trend is characterized by (but obviously not limited to) research such as Fiorina's (1981) suggestion that partisan identification is a standing decision rather than a psychological reflex, work that depicted the voter as rational through aggregation (e.g., Page and Shapiro, 1992), the notion of low information rationality through the reliance on heuristics and cues (Lupia, 1994; Popkin, 1991; Sniderman, Brody, and Tetlock, 1991), and that the ability of the reasoning voter

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holds even in a complicated, low-information environment (Bowler and Donovan, 1998).

Information is central to this renaissance of the reasoning voter. Information necessary for reasoned decisions is available from several sources, including media exposure, campaign activity, partisan labels, editorial endorsements, voter information booklets, and the opinion of trusted friends and colleagues. However, the tidy acquisition of information varies by individual and context, as information acquisition through learning about issues and candidate positions comes with attendant transaction and opportunity costs (Downs, 1957). Even in the best of times, Simon (1957) argues that humans lack the cognitive capabilities to achieve optimal decisions. To compensate, we "satisfice" by making decisions through methods that are "good enough" rather than "best." Variance in the efficacy of satisficing strategies dictate how close to optimal outcomes these "good enough" approaches achieve (Simon, 1996).

The cost of information also varies with electoral context. Such costs can be daunting in low information settings, as the cost of information acquisition in low salience elections is very high. Popkin (1991) suggests that voters respond to these demands through "low information rationality," where voters utilize heuristics and selective information, rather than a comprehensive assessment of relevant issues. Others (Bowler and Donovan, 1998; Lupia, 1994; McDermott, 1999) have also demonstrated how voters economically rely on cues and heuristics to reach reasoned decisions under stiff information requirements.

However, such cues are not always readily available for low profile elections, nor do all voters comprehensively prepare for every election on the ballot. Voters with less information tend to stay home at a higher rate than the general population (Campbell, Converse, Miller, and Stokes, 1960), which is undoubtedly related to the covariance of education and turnout (Verba and Nie, 1972; Wolfinger and Rosenstone, 1980) as the well educated are better positioned to overcome information expenses. Once in the voting booth, one who lacks the information necessary to make a reasoned decision, or who has exhausted their information supply entirely, is considered "fatigued."

Fatigued voters can abstain by failing to mark a decision on all offices and propositions present on the ballot (this is referred to as "roll off" or "drop off"; Bowler, Donovan, and Happ, 1992; Thomas, 1968; Walker, 1966). However, some fatigued voters are forced to make choices by either internal notions of responsible citizenship or external electoral arrangements that limit the utility of the available information.¹ This can result in position advantage, which occurs when candidates in certain positions on the ballot (typically the top positions) receive more votes simply due to their placement on the ballot.² Ballot position effect has been demonstrated repeatedly in the literature (Bain and Hecock, 1957; Bakker and Lijphart, 1980; Bowler et al., 1992; Kelley and McAllister, 1984; Lijphart and Pintor, 1988; Miller and Krosnick, 1998; Muel-

ler, 1969, 1970; Nichols, 1997; Robson and Walsh, 1974; Upton and Brook, 1974) although there has been disagreement over the severity of the effect and the situations in which it is likely to occur (Darcy and McAllister, 1990).

Most prior studies lack a coherent theory explaining the causes of position effects, seldom moving beyond the simple hypothesis that there will be a position effect. Darcy and McAllister take a step by arguing that "position effect will manifest itself in situations where voters have no other guide to a vote choice and must make use of the limited information contained on the ballot itself" (1990, p. 14) and that position effect is more likely to exist in low-salience, nonpartisan, or within-party elections. Miller and Krosnick (1998, p. 316) concur, adding "name order effects were stronger for races that had received less coverage by the news media" implying that the less informed voters were, the more likely they would rely on position effects. While position effect is limited in the United States to low information, nonpartisan races, high profile elections in many democracies are vulnerable, including systems that include compulsory voting or races within parties (e.g., STV in Ireland, Robson and Walsh, 1974).

Building on these efforts, the present study suggests an explanation of ballot position effects that is informed by the work on low information decision making.³ Increases in information levels allow voters to better approximate optimal strategies of decision making; lower levels decrease the efficacy of "satisficing" decision strategies. In voting decisions, the availability of information determines whether a satisficing strategy is good enough, or falls short. Position effect is more likely to occur when information in all its guises is scarce, attenuating the efficacy of satisficing strategies.

Awareness of the centrality of information has led some to suggest that electoral arrangements have an educative responsibility to the citizenry through lowering information costs by supplying valuable voting cues (Lupia and Mc-Cubbins, 1998). Institutions can be manipulated to vary the costs of information through different means. Municipal elections in the United States arguably fail in this regard. City council elections are notoriously low in salience and information, the costs of which are exacerbated through the lack of a partisan cue in many jurisdictions. Here voters may find themselves in a situation where they have precious little information, yet are expected to make voting decisions from a slate of candidates. Satisficing, inexact in the best of times, can fail for some voters in these contexts.

The efficacy of a satisficing strategy is related to the quality of information. Three levels of information, in declining reliability, are available to voters when making a decision. Primary information is composed of what research the voter has done on the election prior to arriving at the polling place. This may include reading newspaper endorsements, awareness of incumbency status, ideological constraints limiting the voter to certain candidates or issues, or relying on the advice of friends, coworkers, or other peers.⁴ Sophisticated examinations of position effect have controlled for this level of information, and these sorts of cues typically register a stronger substantive effect than ballot position, as we should expect (Miller and Krosnick, 1998; Mueller, 1970; Nichols, 1997; see also Taebel, 1975). Many cues and heuristics are primary, such as Lupia's (1994) demonstration that initiative voters are able to sift through several competing ballot measures by drawing on perceptions of their supporters. Primary information can be summed up as campaign research and exposure and, in theory, can be taken directly into the voting booth via a prepared list of choices. Once arriving at the booth, however, the level of primary information is immutable, and the voter must look to the ballot for additional assistance.

Existing primary information can be enhanced with secondary information available on the ballot itself, which consists of substantive cues that work by triggering existing judgments based on stereotype (Conover and Feldman, 1989). The most obvious (and powerful) of these is party, but others include gender (McDermott, 1997), surname ethnicity or race (Byrne and Pueschel, 1974; McDermott, 1998; Mueller, 1970; Nichols, 1997), and in rare elections, occupation (Mueller, 1970; Nichols, 1997).⁵ McDermott (1999) demonstrates that cues based on generalized stereotypes can be effective approximations of candidate policy positions. Secondary information can be an important cue for a voter; indeed there is no evidence in the literature that parties receive position advantage (Darcy and McAllister, 1990). While there is no compelling evidence that *parties* receive a position advantage, there is plenty of evidence that candidates within slates of parties do receive a position advantage (Lijphart and Pintor, 1988; Robson and Walsh, 1974; Upton and Brook, 1974). Different electoral systems (e.g., single-member district/plurality, single transferable vote, or cumulative voting) require either single- or multi-member districts (SMD or MMD). MMD settings often limit the utility of the partisan cue on the ballot by running more than one like-partisan in the same district.

Once the supply of primary and secondary information is exhausted, the voter has become "fatigued." If he chooses to continue voting (rather than abstaining; see discussion above), the only resource available to him is tertiary information, such as ballot position.⁶ Satisficing when cognitively fatigued can yield several strategies in low information decision making (Krosnick, 1991).⁷ In voting decisions, two apply: order effects and deference to the status quo. The latter is present in decisions in initiative and referenda elections, where the "no" option has the strength of incumbency (Bowler and Donovan, 1998). Order effects, detailed in the cognitive psychology literature, are applicable to decisions where one selects from among a list of options (Krosnick, 1991; Miller and Krosnick, 1998).⁸ Salient here is the primacy effect, where a decision maker makes assessments with a confirmatory bias.⁹ Koriat, Lichtenstein,

and Fischhoff (1980) found that students taking multiple-choice exams "favored positive rather than negative evidence" when forced to select the correct answer, "focusing their attention on reasons for" rather than reasons against. Cronbach (1950) finds a similar tendency for students to select earlier rather than later options in multiple-choice exams. While the substantive impact is minor, Cronbach finds that this is more likely with students who are less mentally prepared for the task. A fatigued voter, similar to the ill-prepared student, is susceptible to primacy effects. Rather than bringing the full weight of the cognitive process to bear on each candidate from a long list, he will search for reasons to select a candidate. Once a reason—any reason—to vote for a candidate appears, the satisficing voter makes marks the ballot and moves on.

The second stage of this analysis explores how electoral context magnifies or mitigates the impact of voter reliance on tertiary information. Electoral rules range from how votes are counted to the presence of a mandatory voting requirement. Kelley and McAllister (1984) find a modest (1.3%) position effect in Australian Federal elections held with mandatory voting while controlling for party. Arguably, by removing mandatory voting the level of position effect would diminish to insignificance (Darcy and McAllister, 1990), because this rule mobilizes voters that are in possession of far less primary information, severely hobbling the efficacy of their satisficing strategies. Vote counting is important in electoral contexts employing cumulative voting as discussed later in this article. Finally, many municipal elections in the United States are nonpartisan by law; this obviously eliminates an important second-order voting cue and enhances the probability that a voter relies on tertiary information. Bakker and Liphart (1980), Bowler et al. (1992), Byrne and Pueschel (1974), Miller and Krosnick (1998), Mueller (1970), and Nichols (1997) all find position effect in various nonpartisan contests.¹⁰

CASE SELECTION AND DATA

Data from municipal city council elections in Peoria, Illinois, are used to test the hypotheses outlined below. As a critical case (i.e., a low salience, nonpartisan municipal election held in odd years), if position effects exist anywhere, they should exist in Peoria. Some may respond that Peoria presents too much of a "pushover," that we should expect to find position effects, we do find position effects, ergo these findings are not very interesting. However, it is not enough to merely demonstrate that these effects exist, as this has been done countless times. The goal here is to specify and test a theory of position effects, utilizing both low information decision making and institutional explanations. As a critical case, Peoria offers a rich setting to test not only for the existence of but an explanation for position effects. Second, as Peoria has variation in electoral systems, we can test the discrete impact of

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institutional arrangements while controlling for place-specific alternative explanations.

Election return data and sample ballots were acquired from the Peoria Board of Election Commissioners for all at-large city council elections held since 1983. This includes the 1983 general and primary, 1987 general, 1991 general and primary, 1995 general, and 1999 general and primary.¹¹ The status of ballot rotation in Peoria (all precincts use the same printed ballot, meaning that every voter encounters the same order of candidates throughout the city) was verified in written correspondence with the Board of Election Commissioners in May of 1996.

Institutional variation in Peoria results from the adoption of cumulative voting (CV) in response to litigation filed in 1987 under the 1982 Amendments to the Voting Rights Act, and it is the largest municipality in the United States using CV.¹² Arguing that the hitherto-used plurality at-large electoral system diluted minority voting strength in elections to the city council, the plaintiffs to the suit achieved a settlement mandating the adoption of cumulative voting with the 1991 city council election. All five of Peoria's at-large council seats are elected every 4 years.

Cumulative voting gives voters the total number of votes as positions up for election and offers voters the ability to distribute those votes however one chooses (Still 1984). This allows for "plumping," in which a voter can allot all five of her votes to a single candidate. It has been demonstrated that plumping allows for electoral minorities (specifically ethnic minorities) to achieve parity in descriptive representation (Cole and Taebel, 1992; Cole, Taebel, and Engstrom, 1990).

Of the jurisdictions that employ CV in the United States, Peoria's interpretation is unique. Typically, CV allows for an uneven distribution of the vote (e.g., a single voter can cast three ballots for one candidate, and then one each for two other candidates, etc.). The ballot in Peoria only offers one box next to each candidate name, thus giving the voter a dichotomous choice per candidate (vote or no vote).¹³ The total number of votes available (five) is divided by the number actually cast, yielding the number of "votes" received by the candidate. For example, if a voter only marks the ballot once, that candidate receives all five votes, twice, those candidate receive 2.5 votes, and so on. In a typical implementation of CV, each voter is allowed to assign votes unevenly, plumping all five for one, or three for one, and two for another, etc., with every vote (and nonvote) counted. This institutional difference is important. In Peoria, if a voter becomes fatigued and combines primacy effects with abstention (or roll off), the system essentially manufactures votes for candidates in a manner that the voter might not have intended. It is assumed by the counting rule that every voter in Peoria intends to cast five votes. Yet with a traditional implementation of cumulative voting, when a voter abstains after marking fewer boxes than the total votes available, only those votes marked

are counted. The ability for the institution to shape the impact of position effect is plain. If position effect exists in Peoria, then it is magnified by roll off. Elsewhere, the abstained votes are simply (and logically) not counted.

The precinct serves as the level of analysis, of which Peoria had 120 through the 1991 election, reduced to 100 starting in 1995.¹⁴ Data are available on all precincts for the elections covered. While aggregate, precinct-level data are as close to the individual as possible without direct measurements. Across the eight elections included for analysis, turnout at the precinct level ranges from 0 to 879, while votes received at the precinct level range from 0 to 392.¹⁵ In effect, this allows for the modeling of up to 120^{16} little "elections" for a given citywide election. This is important for several reasons. As turnout serves as a proxy for the level of information in the electorate, a control is needed for election-specific mobilizing factors. If turnout is increased in a given year due to an extraordinary issue, then turnout is a poor measure for the underlying level of information present in the electorate. The problem of election-specific mobilization factors are effectively mitigated by modeling 120 precinct-level elections for each citywide election. Second, turnout varies not only geographically within the larger jurisdiction, but also temporally. Temporal and geographic variance in turnout allows for a rich measure of aggregate information level, while placing the level of analysis at the precinct level adds greater confidence that underlying individual behaviors are captured by the models.

HYPOTHESES, RESEARCH DESIGN, AND METHODS

Hypotheses

Several hypotheses are derived from the theory outlined previously dealing with both the information and institutional aspects of position effect. Since these elections are low in salience and information, are nonpartisan, held between February and May of odd years, and without higher offices attracting voter attention, as a baseline, the first general hypothesis is that position effect should exist in municipal elections held in Peoria. Next, the level of information available to the voter affects the severity of position effect. The more information the voter has, the more effective the satisficing strategies. Third, institutions can mitigate or magnify the severity of position effect. Here, I suggest that the counting rule employed in Peoria's adaptation of CV magnifies the effect of ballot position.

Research Design and Methods

Several additional terms are included in the analysis to control for primary and secondary voting determinants and to measure candidate strength and campaign resources. The evidence in the ballot position literature points toward primary information as being the dominant vote determinant. In the models specified below, both incumbency and endorsement are included as dummy variables. Incumbency is straightforward: an incumbent is coded 1, challengers 0. Endorsement data were acquired through correspondence with the major daily newspaper in Peoria. The *Peoria Journal-Star* routinely makes editorial endorsements for city council races. A list of endorsed candidates for the elections modeled in this article was obtained from the newspaper. Candidates receiving editorial endorsement are coded 1 and others 0.¹⁷ Such measures are often found in the position effect literature; endorsement and incumbency appear to matter in repeated studies.¹⁸

Wherever cumulative voting has been implemented, it has been with race in mind. In such racially polarized electorates, race could be a voting cue like partisan attachment. As Guinier (1994) argues, CV is not limited to enhancing the representation of ethnic minorities, but any salient political minority. Furthermore, as discussed previously, cues that trigger stereotypes are effective determinants (Conover and Feldman, 1989; McDermott, 1999). Therefore, race is included as a dummy variable, coded 1 for African-American candidates, 0 for white candidates.

Secondary information—substantive cues appearing on the ballot itself are included in the models. The strongest of these, party, is controlled for automatically as all elections in this study are nonpartisan. Gender operates in a fashion similar to race (McDermott, 1997, 1998), and therefore is included in the analysis, coded 1 for female candidates, 0 for male.

While incumbency and endorsement explain a large degree of candidate strength, they do not necessarily tell the whole story. The size of the campaign staff and the financial resources available to the candidates should be expected to have an influence on vote choice and hence the estimates reported in the models below. Three measures of the campaign resources available to city council candidates in Peoria are available on-line from the State of Illinois back to 1990 (Illinois State Board of Elections [ISBE], 2002b).¹⁹ Per state law, all candidates for public office who have either raised or spent in excess of \$3,000 within a 12-month period must file public disclosure documents with the State Board of Elections (ISBE, 2002a). This act defines donations not only in monetary terms but also in terms of goods and services; a campaign "volunteer" is actually contributing toward the campaign in real financial terms and is considered in calculating the sum of \$3,000 that triggers filing. This act covered 14 out of 25 candidates who ran for city council positions in Peoria between 1991 and 1999;²⁰ candidates not covered by the act neither raised nor spent more than \$3,000. In the models reported in Table 3, this variable is measured as every \$1,000 spent. Practically, this means if a campaign reported expenditures of \$5,781, then the variable is measured as 5.781. Those that did not have to file are measured as 0. These measures of campaign

resources should account for a candidate's ability to get the message out through advertising, and the overall size and organization of the campaign staff.²¹

The baseline hypothesis is that ballot position effects exist in Peoria municipal elections regardless of electoral rules. Working backward with the three levels of information discussed in the first section, the candidate position on the ballot is the measure of tertiary information. Ballot position is coded ordinally, ranging from 1 through 16, although the exact range for any given election is a function of the number of candidates.²²

The second hypothesis is that information matters, and information is conceptualized in two ways. First, the amount of primary information in the aggregate electorate can be measured through proxy by examining several elections over time and include a measure of turnout. It has been an article of faith among voter behavior specialists since the Michigan study of the 1950s that larger electorates tend to have more casual voters (Campbell et al., 1960). The importance of education and socioeconomic status (SES) in predicting turnout buttress this claim. While all levels of education and SES contribute to turnout increases, the less educated contribute a greater share of the overall increase (Wolfinger and Rosenstone, 1980). For a given electoral constituency, all else held equal, larger electorates contain a proportionally larger share of voters with limited cognitive resources. Since such resources are necessary to overcome the transaction costs of voting (e.g., gathering and processing information), it stands that larger electorates possess a lower aggregate level of information. Arguably, these are the voters with less primary information (as they are less capable of overcoming the cost burdens) and will adopt satisficing strategies more reliant on secondary and tertiary information. Furthermore, in one of the few cases where turnout has been included in a study of roll-off, Bowler et al. (1992) find that as turnout increases, so does roll-off, suggesting that as turnout increases, average information decreases, ergo abstention increases.²³

Alternatively, it is possible that higher levels of turnout reflect voter reactions to increased salience in an election. In this case, a greater level of saliency increases both media coverage and campaigning, thereby reducing information costs. While the assumption outlined above still stands in that the composition of the increased electorate possesses a lower average level of political resources, the larger number of casual voters in the mix will possess greater levels of information than usual, thus mitigating the expected reduction in aggregate information.

I suggest two reasons why this should not be evident in these data. First, if saliency drives turnout variations through greater campaign activity and media exposure, this should be reflected in a relationship between campaign expenditure and overall turnout. Table 1 reports descriptive information on the

Election ^a	Turnout	Candidates	Turnout/Cand.	$Spending^b$
1983 p	6.116	8	764.50	с
1983 g	20,532	6	3,422.00	с
1987 g	10,916	5	2,183.20	с
1991 p	10,283	16	642.69	d
1991 g	17,247	10	1,724.70	\$41,820
$1995 \mathrm{g}$	12,054	8	1,506.75	\$43,904
1999 p	8,226	11	747.82	d
1999 g	15,958	9	1,773.11	\$99,184

TABLE 1. Descriptive Data on Elections

^{*a*} Primary elections noted by p, general elections by g.

^b Inflation adjusted to 1999 values.

Spending data are not available for neither 1983 nor 1987.

 ${}^d\vec{F}$ iling dates for campaign finance data do not distinguish between primary and general elections.

elections in this analysis, including aggregate turnout, campaign expenditure inflation-adjusted to 1999 values,²⁴ the total number of candidates running, whether or not the election is a primary, and the aggregate turnout divided by the number of candidates. A cursory glance at Table 1 finds no apparent relationships, further supported by bivariate correlations and an ordinary least squares (OLS) model.²⁵ If saliency drives turnout, it is not evident in the relationship between campaign spending and turnout.

Second, while occasional lower offices appear on the ballot such as park district, the at-large positions for the Peoria city council are the highest office on election day.²⁶ Therefore, any election-specific mobilization factors should be anticipated at the city council level. In the past 20 years, there has only been one such factor of note-the introduction of cumulative voting with the 1991 elections. Returning to Table 1, a difference of means test comparing average turnout in the 1991 elections and average turnout in the other elections suggests that there is no significant difference. Since the number of candidates might influence mobilization, especially in low salience elections in smaller jurisdictions, the same test is used to compare the average turnout per candidate between the 1991 elections and the others. Again, no significant difference in the means exists. The sample size is small enough to question the utility of such a test, however. Table 2 reports the means and differences in aggregate turnout and turnout per candidate in 1991 elections and non-1991 elections. Absolute differences do exist, but these differences are mixed. In aggregate terms, the 1991 elections did have a higher turnout. But, when considered on a per-candidate basis, the difference swings the other way. Was the increase in turnout a result of a higher saliency surrounding the new electoral system (which is not reflected in a greater level of campaign spending,

TABLE 2. Effect on Average Turnout by First CV Election

	1991	Other	Difference
Avg. Aggregate Turnout Avg. Turnout per Candidate	$13,765 \\ 1,184$	$12,300 \\ 1,733$	+1465 -549

as even when controlled for inflation total spending in the 1991 election is the lowest of the three elections for which data are available), or did the new electoral system mobilize candidates, who then mobilized a greater number of voters? Considering the mixed findings of Table 2, another possibility is that fluctuations in turnout across elections in this jurisdiction is largely random.

Considering the evidence, turnout is included here as a proxy for the level of information present in an electorate. All else held constant, I am assuming that a larger electorate (in the same electoral jurisdiction) will have a lower average level of information across that electorate.

The less informed the electorate, the more likely ballot position will make a difference (Miller and Krosnick, 1998). Testing for the interaction of information and ballot position is critical to assessing the theory suggested in this article. This is done through comparing two models, the second a reproduction of the first with the addition of a term that captures the interaction of information (as proxied by turnout) and ballot position. If the level of information in the electorate is the key to understanding position effect, the base position term will ideally lose statistical significance, or, at minimum, substantive effect with higher standard errors, when a significant interactive term is included in the analysis. If the interaction of information and position is significant, there is strong support that the level of information in the electorate partially explains reliance on tertiary information such as the primacy effect.

The second conceptualization of information compares electorates in primary elections with those in general elections. As turnout is almost always lower in primary elections, the theory above suggests that the average level of information present in the electorate is higher than for general elections. Primary elections have an added value for this analysis. Voters who participate in primary elections represent a harder core of highly motivated voters, more likely to do the homework necessary for a high level of primary information, resulting in more efficacious satisficing strategies. As information varies in the electorate, either through the proxy measure of turnout or by treating primary and general electorates as conceptually distinct, the effect of ballot position should likewise vary.

The third hypothesis considers the institutional role. While ballot position is expected in both traditional and cumulative voting elections, the effect should be stronger in the latter due to the counting rule and other information

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burdens present under CV. Models drawn on two samples (CV and traditional elections) with the same specification can be compared to test this hypothesis.

That Peoria does not rotate ballot position across precincts poses a potential problem for the research design. Ideally, rotation results in an essentially random assignment of candidates to positions, eliminating the possible confluence of candidate-specific attributes with ballot position. Since position is not rotated in these data, steps are taken to eliminate alternative explanations for initial order of placement and candidate support.

The initial placement on the ballot is not random. For first-stage elections (i.e., primary elections, or general elections held in the absence of a primary election), candidates are placed on the ballot as they file; if several candidates all file at the same time (e.g., immediately when the filing period opens) placement is random. In first-stage elections, this has the potential to conflate unmeasured candidate attributes with the effect under analysis. For example, the common wisdom in Peoria is that the tendency is for incumbents to register first, challengers later. This is a concern, but only if this common wisdom is true in fact. A combination of statistical tests, statistical controls in the models, and common sense indicates that this is not the case. If incumbents were aware of the benefits of ballot position, their insider knowledge and convenient geography (as their offices are in the same building as the election commission) should lead to a significant and consistently higher placement on the ballot. In an analysis limited to first-stage elections, a difference of means ttest indicates that incumbents do have a slightly higher placement on the ballot, on average yielding a lower value for ballot position (5.83 for incumbents, 6.71 for challengers; t = -7.39). However, this is skewed by the 1991 primary election, the first following the adoption of cumulative voting, in which 16 candidates filed. When that election is dropped from the analysis, incumbents have a slightly *lower* position on the ballot resulting in a slightly *higher* value for ballot position (4.54 for incumbents, 4.48 for challengers), although the difference is slight enough to render the test insignificant. Aside from one election, incumbents are not statistically the first to register, and even including that one election, they do not appear to be running down the hall as the bell rings in a rush to file before potential challengers, as the average positions are relatively similar. Indeed, in no first-stage election was an incumbent listed first on the ballot. If incumbents are both aware of and acting on a perceived advantage, then one would expect that incumbents would be consistently placed higher on the ballot in every election, often occupying the top spot. This is not the case. Additionally, one would not expect the recent string of incumbency defeats. Out of five incumbents running for reelection in 1995, two lost, located at positions 5 and 7 on the ballot. The three winners were located at positions 3, 4, and 6 (incidentally, the two challengers who won in 1995 were located at the top two locations on the ballot). In 1999, an

incumbent with nearly 2 decades of service on the council, Leonard Unes, was defeated. If he was aware of the benefits of ballot position, Unes would be expected to have acted with some alacrity in ensuring that his initial placement was higher than 10th out of 11 candidates on the 1999 primary ballot. The statistical and anecdotal evidence suggests that incumbents are largely ignorant of the potential benefits of a higher ballot position.

Additional factors might also influence the order in which candidates file, especially the resources of the campaign. A well-organized campaign that invests money on a professional manager might anticipate the benefits of filing early within the context of Peoria electoral law. An OLS model limited to the 1991 primary, 1995 general, and 1999 primary elections (all first-stage elections) models ballot location as a function of five independent variables that attempt to account for such underlying candidate attributes (not reported here). Included are incumbency, campaign spending (weighted for inflation to 1999 values), endorsement, gender, race, and the total number of candidates who file. All are significant predictors of ballot location, although not necessarily in the directions assumed. African Americans file on average one space higher up the ballot than whites, incumbents more than one space further down the ballot than challengers (as suggested by the discussion above), women about half a space further up the ballot than men, and those receiving editorial endorsements about one space higher up than candidates without. Finally, each additional \$1,000 of expenditure appears to translate into the organizational acumen necessary for a ballot position about 0.17 spaces higher on the ballot (in other words, money might buy elections, but not ballot position). As are all significant predictors of ballot position, incongruous as they might appear, they are included in the empirical models reported below.²⁷

For a general election following a primary (e.g., 1991), ballot placement is based on the order of finishing in the primary. This might conflate candidate "popularity" with position effect, a potentially fatal problem for part of this analysis. A regression model limited to the 1991 and 1999 general elections largely negates this concern (there was no primary preceding the 1995 general election). Two models testing this are specified, the first specified the same as Models 1 through 3 in Table 3, and the second adds the raw number of votes received in the preceding primary election. The aggregate primary votes received in the preceding election is a significant predictor of vote share. However, ballot position effect retains significance in the predicted direction while controlling for primary support, although it loses slightly over half of its explanatory value. Although popularity is somewhat conflated with position effect in the two general elections following a primary, it does not explain away position effect.

A second problem encountered by the lack of rotation is that it places a burden on accounting for alternative explanations. As various underlying candidate traits might lead them to be aware of the advantages of ballot position and prompt early filing, these same attributes might also explain candidate strength and ultimately be conflated with primacy effect. The inclusion of incumbency, endorsement, campaign resources, and the other candidatespecific traits described above should assuage concerns that factors of candidate strength are conflated with the observed estimates of ballot position effect.²⁸

Finally, while the ballot for any given election is not rotated, there is a limited temporal rotation at work in these data. Of the 31 candidates who ran for city council at any point covered by these data, 23 of them ran in multiple elections. This accounts for 65 out of a possible 73 candidate elections. Within the group of candidates who ran more than once, there is considerable variation on ballot placement. A candidate might find herself listed seventh one election, but third the next. While this does not equate the ideal of rotation for experimental purposes, it approaches rotation.

The hypotheses are investigated in three steps with six OLS regression models, named Model 1 through Model 6. In all specifications, the vote share, expressed as a percentage, received by each candidate at the precinct level is the dependent variable. The first two steps, consisting of four models, tests the information hypothesis. The first step tests for position effects separately in primary (Model 1) and general (Model 2) elections held under CV in Peoria. This serves a dual function by testing the basic hypothesis that position effect exists in Peoria municipal elections and that better informed primary voters exhibit a smaller position effect than the general electorate. Second, primary and general elections under CV are pooled (Model 3), and information is incorporated into the explanation through an interactive term (Model 4). As these two models are specified with the same sample, we can draw a meaningful conclusion based on the performance of the interactive term added to Model 4. The final step tests to see how position effect holds under different institutional settings. Models 5 and 6 pool the three elections held under the traditional scheme in 1983 and 1987, repeating the specification found in Models 3 and 4 (with the exception that campaign spending data were not readily available for the traditional elections). Comparing these two models with the previous two, and against each other, examines both an institutional comparison and an additional test of the information hypothesis.

FINDINGS AND DISCUSSION

The Role of Information

Primary vs. General Electorates

Table 3 reports estimates from the six models. Model 1 is limited to the CV primary elections (1991 and 1999); Model 2 pools the general elections held under CV (1991, 1995, 1999).

The basic hypothesis of this article is supported: a statistically significant and substantively impressive ballot position effect is estimated in the first two models. This is indirect evidence that some voters in Peoria tire from the long ballot with limited information to cue their vote choice; subsequently they rely on tertiary information and the primacy effect, granting those candidates at the top of the ballot an advantage.

For the general elections (Model 2), on average, a candidate would suffer a vote share loss of 5.2 percent at the precinct level for each place down on the ballot his or her name was found. This substantive finding holds when measures of candidate strength are included in the model.

Electorates motivated to vote in primary elections ought to be composed of voters possessing, on average, more primary information than those who vote in higher profile elections. When models of the general and primary elections are compared in Peoria, ballot position is less of a factor in primary elections than general elections. As noted above, in general elections ballot position accounts for a 5.2 percent share, consistent with findings in earlier studies. In the primary elections, ballot position only accounts for a loss of 1.7 precent, even while accounting for the larger number of candidates competing primary elections. An effects analysis further illustrates the substantive difference in position effect between the primary and general elections (Figure 1). The slope estimate of the ballot position term is considerably sharper for general elections than primary elections. The comparison of Models 1 and 2 offers further evidence that voters in general elections possess lower levels of primary information, as both the incumbency and endorsement terms have less explanatory power in general elections. Indeed, endorsement loses significance in general elections.

Position and Information Interaction

The impact of information can also be expressed in a more sophisticated manner. Models 3 and 4 in Table 1 estimate the candidate precinct vote totals for pooled primary and general elections held under CV. Model 3 reports a statistically significant vote share loss of 2.32 percent per ballot position per precinct. In Model 4, a term is added that tests for the interaction of turnout and ballot position.²⁹ Since the interactive term is significant, the standard error of the base position term inflates, and the absolute value of the base term estimate attenuates when the interactive term is included, it is safe to suggest that the interaction of the level of information in the electorate with ballot position is driving the phenomenon. The relative substantive strength of the estimates is not obvious, as the interactive term is on a different metric and transformed. An effects analysis comparing Models 3 and 4 addresses this in Figure 2 and further illustrates the point. The interactive term erodes considerable explanatory power from the base position term estimated in

TABLE 3. Precinct Level	Vote Support in 1	Peoria City Council	Elections: 19	83-1999		
Variables	M1 (Primary CV)	M2 (General CV)	M3 (CV)	M4 (CV)	M5 (Traditional)	M6 (Traditional)
Ballot Position	-1.65^{***} (0.13)	-5.20 *** (0.97)	-2.32*** (019)	-1.41^{***} (0.98)	-0.68*** (0_10)	-0.40 (0.25)
Posit*Turnout (Sq.Root)	(01.0)			-0.46^{***}		
Incumbency	20.88^{***}	16.13^{***}	14.61^{***}	14.61***	8.29***	(_0.09) 8.28***
`	(1.41)	(1.86)	(1.03)	(1.03)	(0.42)	(0.42)
Endorsement	35.11^{***}	-0.63	16.38^{***}	16.38^{***}	2.88 * * *	2.70 * * *
	(1.41)	(1.83)	(0.92)	(0.92)	(0.59)	(0.61)
Expenditure	-0.04	0.12	0.22^{***}	0.20^{**}	q	q
ч	(0.09)	(0.10)	(0.06)	(0.06)		
Female	-7.11^{***}	-2.35	-3.94^{***}	-4.03^{***}	-0.05	-0.04
	(1.49)	(1.66)	(1.12)	(1.12)	(0.53)	(0.61)
Minority	5.85 * * *	1.20	3.57 * * *	3.97 * * *	1.37^{**}	1.48^{**}
Ň	(1.36)	(1.33)	(0.96)	(0.96)	(0.46)	(0.47)

1983 - 1999÷ ail Ele č Ż . ď . J. 4 N I à RLE 3.

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Candidates	-3.92^{***}	1.81^{*}	-1.17^{***}	-1.26^{**}	-0.20	-0.25
	(0.29)	(0.89)	(0.16)	(0.16)	(0.17)	(0.17)
Turnout	0.01	a	-0.004	0.04^{**}	a a	0.004
	(0.00)	(0.09)	(0.16)	(0.02)	(0.001)	(0.003)
Intercept	92.81^{***}	58.74 * * *	62.17^{***}	63.12^{***}	13.81^{***}	14.15^{***}
-	(4.35)	(8.04)	(2.43)	(2.44)	(1.31)	(1.34)
R^2 (adjusted)	.34***	.24***	.29***	.29***	45***	.45***
	3020	2900	5920	5920	2280	2280
Notes: The dependent variable	is the percentage of v	votes a candidate rec	seived at the preci	nct level. This is ex	pressed as received	vote total divided

by the total number of voters casting ballots; for cumulative voting elections, the sum total of vote shares for any given precinct may be greater than 100 as the Peoria method of cumulative voting allows voters to plump up to five votes on one candidate. There are 120 precincts in 1983, 1987, and 1991; 100 in 1995 and 1999.

Estimates are expressed as the vote share gained or lost per one-unit positive change in the independent variable. For campaign expenditure, the estimated effect on vote share is for every \$1,000 of additional expenditure, adjusted for inflation to represent 1999 values. The standard error is in parentheses for each estimate.

Model 1 is limited to primary elections held under cumulative voting. Model 2 is limited to general elections held under cumulative voting. Models 3 and 4 estimate both general and primary elections under cumulative voting. Models 5 and 6 model elections held under the traditional plurality method. The 1991, 1995, and 1999 elections were held under cumulative voting; the 1983 and 1987 elections were held under the traditional scheme. ^{*}Estimate smaller than 1.0E-5, and statistically insignificant. ^{*}spending data are not available for the traditional elections held in 1983 and 1987.

 $*^{*}p < .001; *^{*}p < .01; *^{p} < .05$ (two-tailed t tests).



FIG. 1. Comparative effects analysis of position advantage.



FIG. 2. Comparative effects analysis with interaction effect.

Model 3, and even has a slightly stronger effect than the remaining base term in Model 4. This makes sense in light of the theory suggested by this article. Lesser informed voters are more likely to experience fatigue, hence are more likely to adopt satisficing strategies of dubious efficacy, such as a subconscious reliance on the primacy effect; this, in turn, partially explains ballot position effect.

Institutional Explanations

The pattern of attenuation in the strength of the base position term once the interactive term is included holds beyond the CV elections estimated in Models 3 and 4. Models 5 and 6 estimate the precinct vote in the 1983 and 1987 Peoria city council elections that were held with the traditional at-large system. The first relevant comparison is between Model 3 and Model 5. Under a traditional voting scheme, candidates lost approximately 0.7 percent of vote share per ballot position per precinct, contrasted with 2.3 percent in a similarly specified model drawn on pooled CV elections. Again, this is illustrated in the effects analysis reported in Figure 1. The slope estimate for ballot position effect under traditional elections has about the same effect as that under cumulative voting primary elections, and considerably less than CV general elections.

In the final stage of this analysis, the interactive effect of information and institution is tested in the traditional elections. When the interactive term is added to the specification in Model 5, resulting in the sixth model, the base position term loses significance. This suggests that the information effect might be stronger under the traditional scheme.

This analysis produces additional findings of interest. Incumbency and endorsement matter quite a bit in predicting support for city council candidates. Indeed, the impact of position effect should not be overstated; while the percentage of vote loss per position at the precinct level varies between 1.65 percent and 5.2 percent, the value of incumbency and endorsement are substantively greater in generating support. Incumbency accounts for an astounding 21 percent of the vote in the primary elections included in Model 1 and 16 percent of the vote in Model 2. Second, the evidence suggests that cumulative voting in Peoria is working as intended. The idea behind implementing cumulative voting was to encourage support for black candidates in the absence of racially motivated districting. While minority candidates had net positive support under the traditional rules (of slightly more than 1%), they gain up to 5.8 percent in contested primaries under CV. However, female candidates have appeared to suffer under CV. While female candidates do not achieve a clear benefit or detriment under traditional rules, under CV they lose vote share. This is not a case of a rogue outlier spoiling the data; prior to

cumulative voting, 15 percent of candidates were female; during the CV era, 21 percent were female. A possible explanation can be drawn from the literature on stereotype inferences (Connover and Feldman, 1989; McDermott, 1999). Since African- American and female candidates are both perceived as more liberal than white male candidates (McDermott, 1999), it is possible that liberal voters in Peoria city council elections gravitate to minority candidate through plumping their vote at the expense of female candidates.

CONCLUSION AND IMPLICATIONS

This article seeks to explain ballot position effect in two stages. First, the level of information present in the electorate determines the efficacy of satisficing strategies; second, once this effect is manifested, institutions can magnify or mitigate the severity of the effect. Models of the vote in Peoria, Illinois, under two different sets of electoral arrangements lend support to this theory. A clear and convincing position effect exists in all modeled elections, even while controlling for measures of candidate strength. The theory that information matters is supported when primary electorates are compared with general electorates and when an interactive term is introduced in CV elections. The inclusion of a term estimating the interaction of ballot position and the level of information in the electorate attenuates the substantive impact of the base term and increases the standard error.

The institutional explanation holds as well. When Peoria switched to cumulative voting, a position advantage that existed under plurality at-large rules was enhanced, suggesting that the institutional change magnified the preexisting effect. This is possibly a result of the counting rule employed in Peoria's CV. The physical ballot looks the same, but votes were each counted as 1 rather than assumed to have been "plumped" as in the case of cumulative voting. If a voter only cast four votes, for example, only four votes were counted. In CV Peoria, those four marks count as 1.25 votes. The electorate is the same, the rules are different. Only the interaction effect that tests for the role of information fails under the traditional rules. Information may still matter under the traditional electoral arrangements, but the impact is subtle enough to not be statistically detectable.³⁰

I do not share the belief of some that a positive finding of position effect characterizes voters as making essentially random choices (e.g., Darcy, 1998). To the contrary, this effect is not random but a predictable example of when the satisficing strategies that we all employ in making everyday decisions buckle under the weight of extreme cognitive burdens. The primacy effect is observed in *some* voters in *some* contexts when making decisions. This decision rule may not conform to an idealized conception of how a democratic system operates, but the determinants of adopting such a strategy (a compli-

cated task environment that increases the costs of information) represent a rational response to making choices in settings where available information is scarce, costly to voters, and demanding on limited cognitive abilities. The task environment drives voters to utilize secondary and tertiary information. If more secondary information were available on the ballot, the primacy effect discussed previously would be less prevalent as fewer voters reach the point of fatigue. Ballot position itself is not a rational strategy (as one can imagine the error rate in using this heuristic is quite high) but satisficing in response to the conditions that foster this effect is a rational response.³¹

Beyond the theoretical advance proposed by this analysis, practical ramifications are important to jurisdictions seeking to mitigate the effect. Some voters choose to seek out high quality primary information as a means to accomplish their goals; others adopt satisficing strategies of limited efficacy in response to the high costs of information in a low salience electoral setting. Electoral administrators cannot realistically ensure a highly informed electorate, but what can be done is to alter the institutions that shape the level of position advantage, thus enhancing the educative role of institutions suggested by Lupia and McCubbins (1998).

The effect of ballot position can be critical in close elections and apparently dictated the result in the 1995 general election. The distance between the last winning and first losing candidates was a mere 170 votes. Challenger W. Eric Turner, located second on the ballot, finished in fifth place, thus winning a seat. Located fifth on the ballot, the incumbent Nathaniel LeDoux came in sixth, thus losing his seat. Due to ballot location, LeDoux ceded a 5.2 percent share per precinct per position; that calculates to a deficit of 2,040 votes based on position relative to Turner. Even when the estimate of position effect is weighted by the variance in the precinct vote explained by the model (24%), a loss of 490 is considerably larger than the 170 vote margin of victory. While an extreme case, it serves as an illustration of the potential pitfalls of this phenomenon. A gap nearly as narrow existed in the 1991 primary election.

The findings in this article compare favorably to previous studies on position effect. The range of effect observed here, from a low of 0.7 percent to 5.2 percent, fits within the range reported earlier and is a near exact replication of the 0.79 percent to 5.04 percent range observed Miller and Krosnick (1998).

As discussed earlier, the initial ballot order for primary elections is determined by the order in which candidates file for election. While it neither appears that incumbents take advantage of insider knowledge on position effect by filing early nor are aware that a potential position benefit exists, if publicized, one can imagine that they might. At the least, position ought to be randomized rather than based on filing (as it is when candidates do not file at the same time). More information could be made available to the voter by opening these elections up to partisan competition, as it has been demonstrated repeatedly that no statistical position advantage exists for parties in partisan elections. However, while this would reduce position advantage, it would shift the remaining effect from across-ballot to within-party (Lijphart and Pintor, 1988; Robson and Walsh, 1974). Since it appears unlikely that the causes of position effect can be removed, the best strategy is to mitigate the effect. This can be done by rotating ballot order by precinct and by changing the unique counting rule of Peoria's form of cumulative voting.³²

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NOTES

- 1. These include party list PR and multi-member nonpartisan races.
- This is also known as alphabetical advantage in elections where candidate listings are so organized.
- 3. This effort is inspired by the work of Krosnick (1991) and Miller and Krosnick (1998) in applying both lessons learned from cognitive psychology and Herbert Simon's notion of satisficing to order effects.
- 4. In very small communities, this order of information can be extended to the classic "friends and neighbors" effect (Key, 1949; see also Bowler, Donovan, and Snipp, 1993).
- 5. Note that Byrne and Pueschel (1974) do not utilize a rigorous approach in their investigation. Rather, they rely on a series of bivariate correlation estimates. They are unable to simultaneously control for alternative explanations.
- 6. As discussed in note 8, tertiary information is only information in the literal sense, not source data for an efficient decision strategy.
- 7. Krosnick's use of satisficing departs somewhat from Simon's understanding. To Simon, satisficing is not a choice per se, but a necessary alternative considering the fundamental impossibility of optimizing. Simon allows for variance in the accuracy of satisficing strategies, depending on the degree to which one is attentive to the task environment. In the terms of ballot position effect and the three orders of information I discuss earlier, more effective strategies are represented by first-order information, while less effective strategies involve culling cues from the paper ballot.
- 8. Order effects are considered a strategy only in the sense that some sort of response must be made to information limitations when a voter feels compelled to make a decision when cognitively fatigued, for whatever reason. This reason might include a sense of civic duty, or possibly under cumulative voting schemes a desire not to plump all available support to those candidate(s) for whom the voter does have adequate information. After all, the voter has paid the highest cost in actually turning out to the polls. The voter then feels compelled to make additional choices with highly limited information, and order effects represents one potential strategy for dealing with this problem. While this represents a strategy for dealing with the problem of making decisions while cognitively fatigued, it is not a strategy in the way we understand voters who overcome low information to reach a reasoned decision. The difference here is that while in the former, voters feel compelled to continue marking boxes while

possessing *virtually no information* on the candidates; in the latter, they make reasoned decisions with the *limited information* that they possess.

- 9. See Krosnick, 1991, for greater detail.
- 10. The other form of institutional effect is as mundane as the type of the ballot used and the method of marking the ballot. Different ballot structures can enhance or mitigate the use of third-order information in making voting decisions. Typically, office-block ballot structures facilitate abstention by a fatigued voter (roll-off) while party-column ballots appear to mitigate the use of third-order information (Walker, 1966). Further, Walker discovered that roll-off was more prevalent with party-column ballots that lack a voting lever for casting a straight partisan ticket. This is intuitive and consistent with the theory this article is advancing: a ballot that facilitates a straight-ticket vote in effect enhances the use of a second-order cue in partisan affiliation. While Thomas (1968) finds that voting machines are more likely to enhance roll-off, Nichols and Strizek (1995) finds that electronic machines with flashing lights indicating voting decisions that have yet to be made significantly mitigates roll-off. Taebel (1975) also finds evidence of roll-off for less significant or visible offices, and that such offices are more likely to have a position effect. A more recent example of this is the performance of the right-wing presidential candidate Patrick Buchanan in the heavily Jewish county of West Palm Beach, Florida, where the "butterfly ballot" allegedly led many to cast a vote for Buchanan against their intentions.
- 11. Note that the number of primary and general elections are not equal, as primaries are held only when a minimum number of candidates file. Since 1991, this threshold has been 10.
- 12. While seemingly exotic (indeed, her advocacy of cumulative voting was a factor in derailing Lani Guinier's nomination as Assistant Attorney General for Civil Rights in 1993), semiproportional electoral systems such as cumulative voting are not rare in the United States. At present, over 100 jurisdictions in the United States employ either cumulative or limited voting in several states, including Texas, North Carolina, Georgia, Alabama, South Dakota, Illinois, and New Mexico, with more added annually (Brischetto and Engstrom, 1997; Cole and Taebel, 1992; Cole, Taebel, and Engstrom, 1990).
- 13. The typical implementation of CV places multiple boxes next to each candidate and allows voters to distribute their votes however they see fit. This allows for an uneven distribution of votes to different candidates, a scenario that Peoria does not allow. In Guin, Alabama, for example, each candidate has seven boxes next to his or her name, reflecting the seven votes each voter casts in Guin city council elections. In unreported models, the position effect in Guin is weaker (yet still evident) than in Peoria.
- 14. These precincts are drawn for electoral purposes only and do not correspond with Census tracts.
- 15. During the 1991 primary, one precinct had a turnout of zero. This accounts for 16 cases (as there were 16 candidates in the 1991 primary) out of the total of 3,020 for the CV primary models, and 5,920 for the pooled CV models. This was not a dead precinct, as it did have measured turnout for the general election that year, and makes no difference to the findings when omitted.
- 16. Again, this is dependent on the year of the election, with 120 precincts in 1983, 1987, and 1991, and 100 in 1995 and 1999.
- 17. The *Journal-Star* endorsed candidates in all of the general elections included in the analysis (1983, 1987, 1991, 1995, 1999). However, of the three primary elections included (1983, 1991, 1999) they offered endorsements only for the 1991 election. This may be due to the large number of candidates (16) running in 1991. Therefore, coding endorsement becomes something of a problem. In the two primary elections where no endorsements were offered, all candidates are coded 0 for endorsement. My assumption is that voters are more likely to recall (or recognize) those who have received endorsements than those who have not. How-

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ever, an alternative measure of endorsement was tested (but not reported) where those receiving endorsements received a 1, those explicitly not endorsed in an election where endorsements were offered a -1, and those who ran in the two primary elections without endorsements a 0. The results of the models were not fundamentally altered.

- 18. While Mueller (1969) finds that newspaper endorsements do not matter in predicting vote on ballot propositions in California, his analysis was relatively unsophisticated, at least so far as the independent effect of endorsement. In a later examination (1970), he finds that newspaper endorsements do matter, and in this case, endorsement was included in a regression analysis as an independent variable.
- 19. These three include money spent, money raised, and original balance available prior to the filing period. As all three measures produce similar results, expenditure is used throughout this analysis.
- 20. Alternatively, this can be expressed as filings per candidate-election given that several candidates ran for office more than once. In this case, spending data are available on 19 out of 35 possible candidate-elections.
- 21. Obviously, they cannot measure variations in these three attributes of campaign strength. For example, this measure cannot discern between a campaign that focuses all of its efforts in advertising vs. one that has a more balanced approach of staff size, professional organization, and advertising. In the main, however, this measure should capture the potential strength of a given campaign.
- 22. Since each of the three elections studied here had a unique number of total candidates, the range is 1–8 for the 1995 election, 1–10 for the 1991 general, and 1–16 for the 1991 primary election, and so on.
- 23. However, Bakker and Lijphart (1980) do not find a significant relationship between turnout and roll-off. As Bowler et al. (1992) studied a number of elections in the state of California (concentrating on ballot referenda yet these overlap with presidential elections), their results should be viewed as more empirically reliable when examining turnout than the latter, which examined academic council elections to the University of Leiden.
- 24. Inflation-adjusted figures are included as a clear inflationary trend is evident in the raw data. By multiplying 1991 values by a 1.24, they are transformed into 1999 values; the multiplier is 1.09 to transform 1995 values into 1999 values. The constants are available from the *Statistical Abstract of the United States*.
- 25. Neither reported here. While the important variables have no relationship, expected relationships exist between uncritical variables. For example, a relationship exists between primary elections and turnout, but this is to be expected and does not bear on the argument.
- 26. Peoria also has several districted city council positions where the single-member district plurality rule holds. Elections for the at-large and districted seats are staggered every 2 years. Elections for districted positions typically do not coincide with at-large positions, but rather occur 2 years later. The mayoral election is scheduled to coincide with the districted elections.
- 27. Nonetheless, if this is a true causal relationship rather than a spurious correlation, the findings are occasionally incongruous. One might anticipate incumbents—not challengers—to benefit the most from beneficial ballot positions. One also might anticipate campaign spending to have a more profound impact, or that African Americans, often an out-group in Peoria politics, be as savvy regarding the benefits of early filing as those candidates receiving an editorial endorsement.
- 28. It is also possible that whether or not a candidate participated in a contested primary might influence the outcome. This was included in the models but found to have no statistical significance nor any substantive impact on the estimates. It is not included.
- 29. This measure is transformed by taking the square root of the original due to a highly skewed distribution with a long right tail.

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- 30. However, that the base position term loses statistical significance in the presence of the interactive term is telling.
- 31. Others may contend that the electoral institution governing the cases in this analysis may be at fault. While I argue that the particular manifestation of cumulative voting in Peoria enhances the substantive impact of position effect, this results from the internal mechanics of the system and not necessarily an external obtuseness perceived by voters. In a study of cumulative voting jurisdictions in Texas, Brischetto and Engstrom (1997) find that both majority and minority voters understand the system. Cole and Taebel (1992) find similar levels of comprehension in Alamagordo, New Mexico.
- 32. Peoria ought to allow the voter to decide how her votes are distributed rather than the counting rule. In most CV contexts, the voter can choose to distribute her votes evenly or unevenly, and to choose whether or not to abstain from casting all of her votes. Peoria's arrangement does not allow the voter these decisions. Especially problematic is the lack of abstention, as Darcy and McAllister (1990, p. 15) note that one possible solution to position advantage is to allow the voter to "simply stop voting whenever he or she wishes."

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