# Incentives to Cultivate a Personal Vote: a Rank Ordering of Electoral Formulas*

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Seat allocation formulas affect candidates' incentives to campaign on a personal rather than party reputation. Variables that enhance personal vote-seeking include: (1) lack of party leadership control over access to and rank on ballots, (2) degree to which candidates are elected on individual votes independent of co-partisans, and (3) whether voters cast a single intra-party vote instead of multiple votes or a party-level vote. District magnitude has the unusual feature that, as it increases, the value of a personal reputation rises if the electoral formula itself fosters personal vote-seeking, but falls if the electoral formula fosters party reputation-seeking.

## I. Introduction

Electoral formulas have generally been studied from the standpoint of their effects on allocating seats to parties. We have numerous studies of questions such as the number of parties and the degree of proportionality associated with different seat allocation methods (Duverger, 1954; Rae, 1967; Taagepera and Shugart, 1989; Lijphart, 1994). But allocating seats to parties is not all that an electoral formula must do; it must also allocate seats to specific candidates within parties. If a party has more candidates than the number of seats it wins, then the electoral formula must specify a means for determining which candidates take the party's seats. Even when there is only one candidate per party per seat—and therefore this problem seems not to emerge—the reason for there being only one candidate may rest in another feature of the electoral law: the granting to the party of the right to bestow the party nomination uniquely on a candidate of its own choice.

How electoral formulas distribute a precious commodity, legislative seats, among the many candidates or prospective candidates seeking the commodity affects the extent to which individual politicians can benefit by developing personal reputations

distinct from those of their party. In this article, we present a method for estimating the relative value to legislators (and candidates for legislative seats) of personal reputations versus party reputations for advancing political careers. The model is based on just four variables common to all electoral systems: ballot control, vote pooling, types of votes, and district magnitude.

The first three of these are trichotomized, each taking only three possible values. BALLOT measures the degree of control party leaders exercise over access to their party's label, and control over ballot rank in electoral list systems. POOL measures whether votes cast in the general election are pooled across entire parties, or among factions or candidates, or are not pooled at all. In the latter case candidates are elected to office solely on the votes they earn individually. VOTES measures the number and types of votes cast; a single partisan vote, multiple votes, or a single vote below the party level. We rank thirteen feasible combinations of these variables ordinally, according to the relative incentives each creates for candidates to cultivate personal, as opposed to party, reputations.

The fourth variable, district magnitude (M), has as many intervals as there are seats in a given legislature. M has the unusual—and not previously observed—property that it affects the value of personal reputation in opposite manners, depending on the value of BALLOT. In all systems where there is intraparty competition, as M grows, so does the value of personal reputation. Conversely, in systems where there is no intraparty competition, as M grows, the value of personal reputation shrinks. This feature of M will be explained below.

The premise that legislators and legislative candidates have the incentive to cultivate a personal reputation rests on another prior assumption common in the literature on legislative behavior: that politicians are motivated by the desire to seek reelection (Rae, 1971; Mayhew, 1974; Epstein, 1967; Cain *et al.*, 1987; Taagepera and Shugart, 1989). We share this assumption throughout this work. Numerous previous studies have recognized the fundamental dilemma that we seek to highlight through the development of an ordinal scoring system: that there is frequently a tension between the collective electoral interests of a given political party and the individual electoral interests of the politicians who run for office under that party label (Ames, 1992; Cox, 1987; Fiorina, 1977; Katz, 1980; McCubbins and Rosenbluth, 1994; Reed, 1994).

Sometimes individual politicians prefer to take positions or actions other than those that would most benefit their party collectively. Furthermore, it is widely acknowledged that electoral rules shape the extent to which individual politicians can benefit electorally by developing personal reputations distinct from those of their party (Fenno, 1978; Uslaner, 1985; Jacobson, 1990; Mainwaring, 1991; Geddes and Ribeiro Neto, 1992; Shugart and Nielson, 1993).

Political science has established some basic tenets on the relative value of personal reputation under various electoral systems. For example, it is widely accepted that in open list systems, personal reputation is more valuable to legislative candidates than in closed list systems (Sartori, 1976; Taagepera and Shugart, 1989; Ames, 1992). But there is no systematic, universal model to account for the value of personal reputation under the broad range of electoral rules according to which legislators around the world are elected.[1] In this essay, we provide such a model. The advantage of the system is that it is both generalizable and tractable. That is, it can encompass all the existing electoral systems as well as some that do not exist (to our knowledge) but that are logically possible.

## *What is Being Estimated? A Word On Reputations*

The model proposes a method to estimate the relative value to legislators (and candidates to legislatures) of personal reputations versus party reputations for advancing political careers. Both the concepts of personal and party reputation warrant some explanation. First, if a politician's electoral prospects improve as a result of being personally well known and liked by voters, then personal reputation matters. The more this matters, the more valuable personal reputation is. Building personal reputation is frequently associated by U.S. political scientists with legislative particularism—securing pork-barrel funding for projects that benefit specific districts, and providing errand-boy services to solve individual constituents' problems with government bureaucracy. Indeed, in many electoral systems, a strong personal reputation within a limited electoral district is critical to electoral success (Lancaster and Patterson, 1990), and providing particularism is a means of developing such a reputation. But personal reputations can be valuable in electoral systems with large (even nationwide) districts as well, when candidates are elected from personal votes rather than from party lists.[2] Thus, the national celebrity enjoyed by movie stars or athletes can translate into valuable personal reputation in some electoral systems. The model presented here identifies the degree to which electoral systems reward politicians' personal reputations, but does not distinguish as to how that reputation is most effectively developed.

The idea of party reputation can refer to a number of different ideas, and so warrants a little more explanation. Party reputations can vary widely across regions within countries. Also, a party's reputation may be different at the level of electoral district from what it is nationally. This article is concerned with party reputation at the level of the electoral district. Districts, of course, can vary in magnitude from single-member districts (SMDs) all the way up to a system where the entire nation is one electoral district (like Israel). In the latter case, party reputation would refer to a party's national reputation. The point is that our first three variables refer to phenomena that work at the district level; our fourth variable, district magnitude, identifies precisely the extent of that level. Party reputation, then, refers to the information that party label conveys to voters in a given electoral district.

In referring to a tension between personal and party reputation, we are suggesting that there is a potential collective action problem for politicians in establishing and maintaining party reputations (Cox and McCubbins, 1993). Maintaining a reputation requires that politicians refrain from taking positions or actions that conflict with the party's platform. If the quality of her party's reputation is all that matters to each politician's electoral prospects, then there is no problem—there is no incentive to weaken party reputation by staking out independent positions. But if electoral prospects depend on winning votes cast for the individual politician instead of, or in addition to, votes cast for the party, then politicians need to evaluate the trade-off between the value of personal and party reputations.

Maintaining party reputations is a collective action problem for politicians. The severity of the problem is determined by electoral rules, but among politicians themselves, there is no means of ensuring cooperation in maintaining a collective reputation. Those who control access to the party label at the district level, however, have an interest in the quality of party reputation. The careers of these party leaders are dependent on the collective electoral fate of the party, rather than that of individual politicians. If a coherent party label benefits the party collectively

within a district, then leaders have an interest in discouraging independent action by politicians. The ability of party leaders to enforce cooperation among politicians in maintaining party reputation depends on the sanctions leaders can impose on politicians who break party ranks.

When we speak of a tension between personal and party reputation, then, we are referring to the potential conflict between individual politicians and district-level party leaders. Features of party organization outside our model are needed to understand any conflicts that may exist between leaders of one district and those of another or between local and national leaders. We estimate only the ability of (district-level) party leaders to enforce cooperation in maintaining party reputation and, conversely, the incentives for politicians to comply.

### *What We Demonstrate*

We present a method of evaluating electoral formulas based on four variables: ballot control, vote pooling, type of votes, and district magnitude. Although these variables do not capture all of the possible subtleties in electoral formulas,[3] they are the principal factors inherent in the electoral system accounting for the value of personal reputation to legislators.[4] The first three variables, BALLOT, POOL, and VOTES, can each take three possible values, 0, 1, or 2, depending on how strong an incentive each creates for politicians to cultivate personal reputations. The higher the score, the greater the incentive. There are twenty-seven ($3^3$) possible combinations of the values of these three variables. Fourteen of these combinations, however, do not represent logically possible or practical electoral systems. That is, there are certain values of one variable that preclude certain values of one of the others. Thus we are left with thirteen feasible combinations of our first three variables. We present a rank ordering of these thirteen combinations, from that which generates the least incentive to cultivate a personal reputation to that which generates the greatest incentive.

The fourth variable, M, can range from a minimum value of 1 (SMD) to a maximum determined by the number of seats in the legislature. Given the large number of possible values of M for any legislature, M would not lend itself well to inclusion in the rank ordering system. There is also another, more important, reason that M is not included in the ordinal ranking of systems. M has the unusual property that its effect on the value of personal reputation is different, depending on the value of BALLOT. This is not the case for any of the other three variables, *vis-à-vis* each other. That is, *ceteris paribus*, an increase in BALLOT, POOL, or VOTES always increases the value of personal reputation. Only M has the property that the direction of its effect on the value of personal reputation depends on the value of another variable.

## II. An Ordinal Scoring System

### *Scoring BALLOT, POOL, and VOTES*

The first variable, BALLOT, measures the degree of control party leaders exercise over access to their party's label. There are two elements to this variable: control over party endorsements, and control over ballot rank in electoral list systems. These elements together determine the degree of authority leaders exercise over

rank-and-file politicians through control over ballots. When leaders exercise strong ballot control, the incentive for a politician to cultivate a personal reputation is minimized; but when ballot control is weak, personal reputation is more valuable. BALLOT is scored as follows:

0: Leaders present a fixed ballot, voters may not 'disturb' list;
1: Leaders present party ballots, but voters may 'disturb' list;
2: Leaders do not control access to ballots, or rank.

A score of 0 indicates two things. First, party leaders control nominations, and thus which politicians benefit from the party's endorsement. Second, party leaders determine the order of the party's list of candidates on the ballot, and this order cannot be altered by voters. When BALLOT = 0, leaders have maximum control over ballots, voters choose among parties rather than individual candidates, and so the value of personal reputations is minimized.

A score of 1 indicates that leaders control which politicians secure the party's endorsement, but that voters can determine which candidates are elected by selecting from among the candidates presented by the party. This necessarily implies competition among candidates who share the same party label, and so indicates that personal reputation will be valuable.

A score of 2 indicates that leaders control neither party endorsements nor ballot lists. In such systems candidates might gain ballot access by paying a registration fee, by collecting signatures, through primaries, or through some combination of these methods. The key point is that politicians themselves determine their ballot access by acting as individual political entrepreneurs. Party leaders are marginalized, and the value of personal reputation is maximized.

The next variable, POOL, measures whether votes cast for one candidate of a given party also contribute to the number of seats won in the district by the party as a whole. POOL is scored as follows:

0: Pooling across whole party;
1: Pooling at sub-party level;
2: No pooling.

When POOL = 0, a vote for any candidate of a given party is counted first as a vote for the whole party list for the purpose of determining how many seats are to be allocated to the list.[5] Such systems include list PR systems in all three of their most common variants: (1) closed-list, in which voters vote directly for the list, as in Spain;[6] (2) open-list, in which voters indicate their preference for one or more candidates within lists, as in Finland since 1955;[7] and (3) multiple-list, in which voters vote for one of several lists of candidates presented under the name of the same party, as in Finland before 1955 and Uruguay.[8] In each of these variants, however, the vote is cast, votes for all candidates or lists are pooled to determine how many seats the party as a whole wins. In addition, when parties present only one candidate in a SMD election, votes are effectively 'pooled' across the whole party, where each party presents a fixed list containing the name of one candidate.[9] When votes are pooled this way, a candidate's fortunes depend on the ability of her entire party to attract votes. The party reputation, then, is at a premium relative to personal reputation.

When POOL = 1, votes are also pooled, but they are pooled across candidates or across factions, rather than across entire parties. Pooling across candidates takes

place under the single transferable vote formula (including its SMID variant, the alternative vote), where voters can designate to whom their votes should be transferred if they are not needed to elect their first choice, or if their first choice is too unpopular to be elected. Pooling also takes place at the sub-party level in Colombia's personal-list formula, where the vote, which must be cast for an individual list, is pooled among members of that list, but not across other lists from the same party. Where pooling occurs at the sub-party level, candidates depend on their ability, or their faction's ability, to attract votes independent of the party as a whole, so personal reputation is more valuable than when POOL = 0.

When POOL = 2, no vote pooling occurs at all, and candidates are elected entirely by virtue of their personal ability to attract votes. Clearly, under such conditions, the value of personal reputation is at its greatest relative to the collective reputation of the party. Such systems include the single nontransferable vote (SNTV) formerly used in Japan, and systems that use primary elections that allow voters to select from among candidates within parties.

The VOTES variable distinguishes among systems in which voters are allowed to cast only a single vote for a party, multiple votes, or a single vote for a candidate. The value to legislative candidates of personal reputation is lowest in the first case, moderate in the second, and highest in the last. VOTES is scored as follows:

0: Voters cast a single vote for one party;
1: Voters cast votes for multiple candidates;
2: Voters cast a single vote below the party level.

When VOTES = 0, voters simply choose once from among the various parties, as in Rae's notion of a 'categoric' vote.[10] Under these conditions, party reputation is high, and there is relatively little incentive for candidates to cultivate a personal reputation. Examples are closed-list systems of any district magnitude, including SMD plurality systems in which the party submits a 'list' of one candidate.

When VOTES = 1, voters can cast more than one vote.[11] This can happen either within a given election or over time. Voters might be allowed to cast votes for a certain number of candidates either within party lists, or across parties as in a *panachage* or multi-seat plurality system. A transferable vote also allows voters to express preferences for multiple candidates, but to give an ordinal ranking to them.[12] Alternatively, voters might be allowed multiple votes over time, as when primaries are used to determine nominations, or when run-off elections are used to select from among top competitors in a first round of voting.[13] Under all of these systems, the fact that votes are cast for individual candidates means that a politician's personal reputation is more valuable than when votes are cast only for parties. However, when multiple votes are cast, personal reputation is not as overwhelmingly important relative to party reputation as when all candidates are competing simultaneously for the same indivisible support of each voter. When multiple votes are cast simultaneously, the candidates from one party can run as a bloc, rather than running against each other. When a separate primary determines nominations, intraparty competition takes place among a subset of all candidates, but party reputation is important in the general election. Finally, in run-off elections, second round competitors need to broaden their appeal beyond the core group of voters whose support allowed them to survive the first round.

When VOTES = 2, finally, each voter casts one vote, either for a candidate or a party faction. This describes, among others: single nontransferable vote (SNTV),

double simultaneous vote, alternative vote systems, and open-list PR. In all these systems, intra-party competition takes place simultaneously with interparty competition. Voters can neither spread their support across members of the same party nor across multiple parties. Everyone competes against everyone else at once. Under these conditions, personal reputation is at a premium relative to party reputation.

In this scheme, VOTES = 1 is not merely a residual category. Although it is true that there are important differences among systems in which voters have multiple votes, all the systems that we characterize as VOTES = 1 differ fundamentally from those in which voters get only one vote. The difference is that the voter's support is divisible.[14] The logic is similar for runoffs, or even for list systems with multiple preference votes: voters may express a more qualified preference, or vote for their first and second (or possibly further) choices.

### Feasible Combinations of BALLOT, POOL, and VOTES

Each of these first three variables is scored according to three possible values. As a result, there are twenty-seven possible combinations of values on these three variables. However, many of these combinations are logically inconsistent. For example, if voters cast a single, party vote (VOTES = 0), then it must be that parties present fixed ballot lists that voters do not disturb (BALLOT = 0). The scoring system is made more tractable, then, by establishing a set of rules to eliminate combinations of values on BALLOT, POOL, and VOTES that represent logically impossible electoral systems. The three rules are:

Rule #1: If VOTES = 0, Then BALLOT = 0;
Rule #2: If BALLOT = 0, Then POOL = 0;
Rule #3: If BALLOT = 0, Then VOTES ≠ 2.

The first rule was just explained. Rule #2 states that if parties present ballots that cannot be altered by voters, then votes must be pooled across the whole party. Pooling below the party level, or no pooling, means inevitably that party lists are not fixed. Pooling at the party level, then, is a necessary condition for ballots to be fixed; although the reverse does not hold.

Rule #3 states that if parties present fixed ballots, then it cannot be that voters cast a single vote below the party level. This is straightforward in that any vote at the sub-party level implies a choice among those who are seeking or have already secured the party's endorsement. If voters are given such discretion, then it cannot be that leaders are presenting fixed ballots.

These three rules together eliminate from consideration thirteen of the twenty-seven possible configurations of values for BALLOT, POOL, and VOTES. Another can be ruled out on the grounds that it is implausible. That configuration is one in which VOTES = 2, but BALLOT = POOL = 1. This configuration would describe a system of multiple lists, because voters cast a single vote below the party level (VOTES = 2) and there is also pooling below the party level (POOL = 1). However, the configuration also tells us that parties determine which lists can run under the party label (BALLOT = 1). It is highly implausible that a party that can control its label and present lists that can win more than one seat each would present more than one list per district, although it is logically possible. A party that has the BALLOT control to decide how many lists to run surely would choose to run just one, when there is no pooling at the party

level. Only if 'lists' were restricted by law to one candidate each in a system for which M > 1 would parties have to endorse multiple lists, in which case we have SNTV.[15] We now turn to the task of ranking the remaining thirteen configurations.

### An Ordinal Ranking of Systems According to BALLOT, POOL, and VOTES

The thirteen configurations are shown in Table 1 and describe all feasible electoral systems according to the interval established for each variable. The same configuration often describes more than one electoral system, for two reasons. First, a given electoral formula used in a single-member district may have a different conventional name than the same formula when used in a multimember district. Thus Table 1 identifies examples of each formula in both single-member and multimember districts.[16] Where a cell for example is left blank, it is because we know of no empirical referent. Second, although the ordinal scoring system is inclusive, each position in the order necessarily groups together systems that vary somewhat. For example, both a multiple-list system and an open list system may allow a single vote below the party level (for factional lists in one case, candidates in the other) and both involve pooling at the party level. The systems are not identical, but appear to be in this model. The lack of a separate rank for each system is not a weakness, however. By grouping systems according to the critical variables, the model highlights similarities among electoral systems that can be overlooked in a less systematic analysis. Moreover, if the variables are designed well, then when systems share a given configuration, they should also provide a similar trade-off for politicians between the value of personal reputation and party reputation.

The configurations in Table 1 are ranked according to the incentives each creates for politicians to cultivate personal, as opposed to party, reputations. The first listed creates the least incentive, while the value of personal reputation increases under each successive configuration, all else equal. To rank the configurations, we begin with the electoral formula that provides the least value for personal reputation on each of the variables (0,0,0). Then, we consider the impact of altering any of the variables, with the goal of identifying the feasible configuration that implies the smallest increase in the value of personal reputation. This process is repeated until all thirteen feasible configurations are ranked, from lowest to highest according to the value of personal reputation. Ultimately, the precise ranking can be determined only with rigorous empirical testing, as we discuss in our conclusions. For now, let us present our method for determining ranks, expecting (and hoping) to provoke some dissent from our readers.

None of the three variables is clearly the most or least important, under all conditions, in determining the value of personal reputation. The impact of changing the score of one variable depends on the current values of the others. Therefore, one cannot simply begin by varying the least important variable, while holding the others constant, then the second least important, and so on, to establish the rank ordering of systems. Rather, because the impact of variables is contingent on the values of others, each jump between configurations must be defended on its own terms. Fortunately, with only thirteen intervals, this process remains tractable.

*(a) Closed-list Formula with One Round.* Personal reputation is least important under closed list, single round elections (0,0,0). Here, parties present fixed ballots, and voters are allowed a single opportunity to choose among parties. In such a

TABLE 1. An ordinal scoring system of electoral systems according to the incentive to cultivate a personal reputation

| Rank | BALLOT | POOL | VOTES | Type of system if M = 1 | Examples | Type of system if M > 1 | Examples |
|---|---|---|---|---|---|---|---|
| a | 0 | 0 | 0 | SMD plurality with party endorsement | Britain, Canada | Closed-list PR<br>Closed-list plurality | Israel, Spain<br>U.S. Electoral College, most states |
| b | 0 | 0 | 1 | SMD majority<br>Majority-plurality | Imperial Germany<br>France | MMD majority list | Mali |
| c | 1 | 0 | 1 | Open-list with approval vote | None | Open-list, multiple votes | Italy (pre-1993), Switzerland |
| d | 1 | 1 | 1 | Alternative vote with party endorsement | Australia House | Single transferable vote, with party endorsement | Australia Senate, Ireland, Malta |
| e | 1 | 0 | 2 | Double simultaneous vote with party endorsement | Uruguay president | Open-list, single vote<br>Multiple-list, single vote with party endorsement | Chile, Poland<br>Uruguay |
| f | 1 | 2 | 1 | Approval voting with party endorsement | None | MMD plurality<br>MMD limited vote<br>Cumulative voting (party endorsement) | Poland senate<br>Spain senate |
| g | 2 | 0 | 1 | Open-list with approval vote, open endorsement | None | Open list, multiple votes, open endorsement | None |
| h | 2 | 1 | 1 | Alternative vote, open endorsement | None? | Single transferable vote, open endorsement | New York City School Boards |
| i | 2 | 0 | 2 | Double simultaneous vote with open endorsement | None | Open list, single vote, open endorsement<br>Multiple-list, single vote, open endorsement | Brazil, Finland (post-1955)<br>Finland (pre-1955) |
| j | 2 | 2 | 1 | Primary system<br>Open-endorsement runoff<br>Approval voting (open endorsement) | United States Congress<br>Louisiana<br>None | MMD plurality<br>MMD limited vote<br>Cumulative voting (open endorsement) | Philippine Senate<br>Alabama (some localities)<br>Illinois (pre-1969) |
| k | 1 | 2 | 2 | Not logically possible |  | Single non-transferable vote, party endorsement<br>Personal-list PR | Japan (pre-1993), Taiwan<br>Colombia |
| l | 2 | 1 | 2 | Not logically possible |  |  |  |
| m | 2 | 2 | 2 | SMD plurality, open endorsement, no primary | Philippines | Single non-transferable vote, open endorsement | Alabama (some localities) |

system, the value of personal reputation to a politician is driven entirely by M and is lowest when M = 1. (We return to the importance of M below.) Systems with M = 1 and closed 'lists' (i.e., one candidate per party per district, with party leaders determining who that candidate is) include Britain[17] and, for most seats, Mexico.[18] For systems in which M > 1, this category includes the closed-list PR systems of Israel, Spain, and numerous countries. Also included are various forms of list plurality, where the party that gets the most votes takes all M seats, as in the formula used by most states for the U.S. Electoral College. Less commonly, a closed-list system may permit the plurality party to take some fixed share of the seats less than M, with the second largest party taking the rest of the seats. Such a formula, known as the Saenz Peña law, was formerly used for the Argentine Chamber of Deputies and began to be used in the Mexican Senate in 1994.

*(b) Closed-list Formula with Two Rounds.* The smallest increase in personal reputation among feasible configurations is to allow multiple votes (0,0,1). Where ballots are fixed by parties and pooling takes place across parties, this implies a multi-round electoral system. In SMDs, France is the most prominent example. Mali currently uses this closed-list majority formula in multi-seat districts (Vengroff, 1994). The increase in the value of personal reputation here is driven by the fractionalization of party systems that run-off systems generate relative to single-round systems (Shugart and Carey, 1992). In the second-round campaign, candidates must broaden their appeals, thus even candidates running on a closed list may have some incentive to cultivate personal votes, not to differentiate from each other, but because they must expand their votes beyond the base that their party reputation brings them. Still, with party leaders controlling ballot access, and votes pooled across parties, the increased value of personal reputation under multiple round systems is the smallest possible jump.

*(c) Open-list Formula with Multiple Votes.* The next smallest increase is to vary the value on BALLOT such that lists are still composed by party leaders, but voters may express preferences for some candidates over others (1,0,1). That candidates can improve their electoral chances by attracting personal votes, even at the expense of others on their party's list, means that the value of personal reputation increases under this system. But the fact that voters are allowed multiple votes—usually some number less than M, but sometimes M votes—means that candidates of a given party can run as a bloc, and so voters are not forced to identify one candidate as preferred above all others.[19] Such a variant of PR was used in Italy before the reforms of 1993 (see Katz, 1980). Because of the multiple-vote procedure, this formula may seem incompatible with single-member districts. However, if we relax the assumption that voters must be given no more than M votes, it could apply. An example would be if the seat was awarded to the party with the most votes and voters could vote for as many candidates as they were willing to express 'approval' of, with the seat going to the most approved candidate within the plurality party.[20]

*(d) Single Transferable Vote with Party Endorsements.* The next value that can be varied to increase the value of personal reputation is the score on POOL (1,1,1). If pooling takes place below the party level, it is no longer so that all members of a party benefit whenever a vote is cast for one of their party's candidates. Voters may

vote for multiple candidates, but because pooling does not take place at the level of the preferred candidates' parties, voters are asked to designate a rank ordering of their preferences. This configuration describes what is known as the single transferable vote (STV) formula, where voters cast ordinal preference votes for multiple candidates.[21] Surplus votes, and those that are cast for losing candidates, are transferred to lower-ranked candidates who are still in contention for a seat. In single-member districts, this formula is usually called the alternative vote (or, in Australia, majority-preferential). Under this formula, because vote transfers entail a form of vote pooling across candidates, politicians from the same or allied parties can run as a bloc, appealing to voters to cast second and third preference votes for their copartisans, but their ability to win seats depends entirely on how many personal votes they receive.

*(e) Open-list, Single Vote.* We now have our first systems in which voters cast a single vote below the party level, either for an individual candidate or a factional list. This increases the value of personal reputation because candidates can no longer run as teams, seeking to share the votes of particular voters. Each candidate or list stands alone in the quest for each voter's single vote. Party reputation still matters significantly, however, because all candidates of any party pool votes—meaning votes for any candidate or list increase the party's overall vote—and because it remains the party that determines which candidates may use the label (1,0,2). Such variants of PR are used in Chile and Poland, where voters vote for a single candidate, and in Uruguay, where voters vote for a list within the party. This formula may be applied in single-member districts as follows: voters vote for a candidate and the winner is determined as the candidate with the most votes within the party that received the most votes. This rule is applied in presidential elections in Uruguay (and, in 1985, in Honduras) and goes by the somewhat misleading name of double simultaneous vote.[22]

*(f) Plurality Formula with Party Endorsement and Candidate Voting.* At this position (1,2,1) we have our first formula with an absence of any vote pooling. Thus each candidate's chance of election hinges solely on her own personal vote-drawing ability. We encounter here a number of variants on the plurality formula, all in which parties control the use of their labels by candidates. If $M > 1$ and voters have $M$ votes, the system is sometimes known as 'multimember-district plurality' and sometimes as 'bloc vote'. If the voter has fewer than $M$ votes but more than one, it is called 'limited vote'. Cumulative voting, in which voters may concentrate more than one of their votes on one candidate, is also included here. Finally, if this formula is used in a single-member district, it would be what is commonly known as the approval vote. Although personal votes alone determine who wins under all variants of this formula, leadership control over endorsements provides a meaningful tool with which to encourage cooperation in maintaining party reputation. And multiple votes imply that copartisans might secure support from the same voter, although the voter is not required to choose candidates from only one party.

*(g) Open-list Formula with Open Endorsement and Multiple Votes.* Now we have our first formula in which party leaders do not have the ability to select candidates (2,0,1). This is an open-list formula, but with party leadership control over access to party lists removed. When leaders lack the legal authority to deny candidates the

use of the party's label on the ballot, leaders are unable to coerce politicians into cooperating to maintain party reputation. Candidates gain access to lists by virtue of their own entrepreneurial activities, such as gathering signatures or paying registration fees, rather than at the discretion of party leaders. Under such a system, which has no empirical referent, some motivation to maintain a party reputation would survive because votes are pooled across parties, and because voters cast multiple votes, perhaps for party blocs. But open access to party lists, coupled with personal votes, means that personal reputations are increasingly valuable.

*(h) Single-transferable Votes, Open Endorsements.* At the next rank we remove the pooling of votes at the level of the party. Instead, votes are pooled at the level of candidates who receive preference votes (2,1,1). STV with no leadership control over the use of a party name would fit this description. Candidates gain access to the ballot on the basis of their own entrepreneurial activity. Voters cast ordinal votes, with excess votes transferred to other candidates. Party label under this formula has meaning primarily as a cue for voters to use in casting second and third choice votes among lesser known candidates; but candidates win seats solely on the basis of personal votes, and party leaders lack the sanction implied by ballot control.

*(i) Open list Formula with Open Endorsement and Single Vote.* Now remove the ability of candidates to run as blocs, requiring each to compete for the indivisible vote of each voter. Here we find an open list system in which party leaders do not control endorsements, and in which voters cast a single vote below the party level (2,0,2). In Finland, for example, each prospective candidate must collect signatures from voters. The nominating papers identify other candidates with whom the candidate would like to form an 'alliance.' Parties do not have any formal role in nominations; as a result, multiple alliances (lists) have appeared within the same party, frequently in the earliest elections, and sporadically since (Törnudd, 1968).[23] The Brazilian system closely approximates this configuration, where once a politician is elected under a party label, he or she cannot be denied access to the party list in subsequent elections (Mainwaring, 1991).[24] With this formula, the only factor contributing to the value of party reputation at all is the fact that votes are still pooled across all lists or candidates from the party. However, leaders have no formal sanctions to encourage cooperation in maintaining party reputations. The value of personal reputation is thus high.

*(j) Plurality Formula with One Endorsement and Candidate Voting.* With vote pooling removed, we have systems like those under (f), above, but with one important difference: parties cannot determine which candidates use their labels. Thus there is no leadership control over endorsements, no pooling, and multiple votes (2,2,1). The system of primaries used in U.S. congressional elections in nearly all states is of this type. The multiple votes are cast over time: one in the primary of a voter's preferred party, and one in the general election context among the primary winners from each party. The so-called blanket primary, used in Louisiana for elections to most offices and in many other U.S. states for special elections, is really an open endorsement runoff system. In the first round, a majority of votes is required. Because parties do not control endorsements, there may be multiple candidates using any given party label. In the event that no candidate receives a

majority, the top two candidates, regardless of party affiliation, face each other in a runoff. The various other types of system listed under (f) are also repeated here, with the difference being in the nominations process: approval voting, bloc vote, limited vote, and cumulative vote.

*(k) Single Nontransferable Vote, Party Endorsement.* At this rank (1,2,2) we have our first system in which there is neither vote pooling nor the possibility of more than one candidate sharing support from the same voter. Thus it really is a case of every candidate for herself. This formula was used in Japan through 1993 and is also used in Taiwan. The only incentive provided by the electoral law to maintain a party reputation is that the party can deny nomination to a candidate whose practices excessively undermine party cohesiveness.[25] Of all the systems in which parties control nominations, this is clearly the most personalistic. The direct competition among members of the same party poses great difficulty to parties attempting to ensure cooperation within the party to ensure that votes are allocated efficiently to candidates (Cox and Niou, 1994; Ramseyer and Rosenbluth, 1993). There is no equivalent for single-member districts, as a party that can control endorsements certainly would not nominate more candidates than seats, given the absence of pooling.[26]

*(l) Personal-list Formula.* Now we remove the ability of parties to determine who their candidates are, but allow for some pooling at the sub-party level. In such a system (2,1,2), the only pooling takes place within the individual lists that compete within a party. Because each list is headed by a candidate who need not have received party endorsement to use the party label, this system, used in Colombia (Archer and Shugart, forthcoming; Cox and Shugart, forthcoming), is best described as a personal-list system. The limited pooling may allow for the building of a party reputation by some candidates, but it could just as easily lead to the winning of multiple seats by candidates chosen by some head of a list who has no loyalty to party leadership, but is personally popular.

*(m) Single Nontransferable Vote, Open Endorsement.* Finally, SNTV, minus any leadership control over access to party lists (2,2,2), represents the zenith in the value of personal reputation relative to party reputation. Here, any politician can run under any party label (or at least cannot be prevented from doing so by party leaders), and must compete with all other politicians for each voter's single vote. Seats are allocated by pure personal plurality, with no pooling. Under such a system, our three variables generate no incentive to maintain party reputation at the expense of personal reputation. This variant of SNTV has an equivalent in single-member districts: the plurality system in which parties do not control endorsements and thus multiple candidates may compete under the same party label, as has frequently been the case in the Philippines. In this sense, the ranking has seemingly come full circle, with SMD plurality being one of the empirical referents at either end of the scoring system. However, the distinction is crucial. In the closed-list variant, used in Britain, party leaders are able to ensure that only one candidate acceptable to them gets to use the party's label. The value of personal reputation in such a system comes only from the low magnitude. The open-endorsement SNTV applied to single-member districts, as in the Philippines, may permit more than one candidate to claim the same party label, but the absence of vote pooling means that

a vote for a candidate who is using the party label is not as good as a vote for the whole party. Thus personal reputation stems not only from the low magnitude but also from the inability of party to serve as the principal reference point for voters.

Next we consider the effect of district magnitude, M, in combination with each of the above thirteen configurations.

## *The Effect of District Magnitude on Personal Reputation*

District magnitude, M, is treated separately from the other variables for two reasons. First, the other variables describe methods of organizing voting and vote distribution. The variations on these methods are relatively limited, and they differ qualitatively. They lend themselves to description by interval variables that take a small number of values, provided the intervals are clearly delineated and are logically connected to the value of personal reputation. District magnitude, on the other hand, does not lend itself to description by a small number of intervals. It is a natural interval variable to begin with, with values ranging from 1 through the total number of seats in the legislature. Imposing fewer intervals on M would require imposing arbitrary cut-off points between intervals, and would needlessly throw out information.

The second and more important reason for treating district magnitude separately concerns the unique way in which this variable affects personal reputation-seeking. The importance of magnitude on members' efforts to cultivate personal reputations has been recognized before, but, to our knowledge, our argument about magnitude's differential effects under different allocation formulas is novel. For example, speaking of one subset of means by which members attend to their personal reputations, Lancaster (1986, p. 70) says, 'because pork barrel projects are distributive policies directed toward geographical constituencies, an electoral system's territorial inclusiveness may be linked to the degree of pork barrel activity.' In other words, as districts become larger (in both magnitude and area), personal reputation-seeking (including but not limited to pork-barreling) declines. We agree with Lancaster, but only for those systems in which there is no intraparty competition (where BALLOT = 0). That is, as the number of copartisans on a given ballot list grows, the relative importance of each individual candidate, and her personal vote-getting ability, shrinks. As M grows in closed list systems, party reputation dominates the personal reputations of list members in drawing voter support. This is consistent with Lancaster's notion that the party itself, rather than the voters in the district, become the member's principal constituency.

On the other hand, our contention is that the relationship is reversed under all other allocation formulas—that is when BALLOT ≠ 0. Rather than decreasing, the importance of personal reputation actually increases with magnitude in those systems in which copartisans compete with each other for votes and seats. The logic is that, as the number of other copartisans from which a given candidate must distinguish herself grows, the importance of establishing a unique personal reputation, distinct from that of the party, also grows. As an aside, let us say that Lancaster may be quite right about pork, *per se*, because pork-barreling refers to geographically targeted projects. These may indeed be less important as magnitude increases under any allocation formula. However, even if, at very high magnitudes in systems with intraparty competition, members engage in less pork, it is not because the importance of establishing a personal link with voters is less important. Indeed, our

argument is that such links become more and more important at higher magnitudes under formulas for which BALLOT $\neq$ 0. Those reputations may be more likely to be based on something other than ability to deliver local pork,[27] such as celebrity status in some other endeavor prior to entering politics, but our model does not distinguish among specific means of cultivating such reputations.

The effect of M on the value of personal reputation is driven by the imperative (or lack thereof, in closed list systems) of politicians to distinguish themselves from their copartisans in order to be elected. The precise relation between M and this imperative warrants some further clarification. The key determinant of how much a candidate must distinguish herself from copartisans is actually determined by the ratio between the number of candidates endorsed by her party in that district and M, rather than directly by M. The higher the ratio, the greater the need for personal reputation. For example, as Mainwaring (1991) has noted, one of the features that makes Brazilian legislators more personalistic than their Finnish counterparts is that in Brazil parties may nominate up to 1.5 times as many candidates as there are seats, while in Finland parties may nominate only M candidates. Thus each Brazilian candidate faces more copartisans from which she must differentiate herself, even when the magnitude is the same.

Even when parties may nominate more than M candidates, or (less commonly) are restricted to fewer than M candidates, the number of endorsements tends to rise with M. Therefore, it is M that is the fixed and identifiable determinant of the scope of intra-party competition. The simple rule governing the effect of M is that as M rises in closed list systems (where BALLOT = 0), the value of personal reputation declines; as M rises in all other systems, the value of personal reputation increases. It is possible to combine this insight with the rank orderings of formulas in order to provide a graphic representation of electoral systems according to how their values on all four variables shape the value of personal reputation, as depicted in Figure 1.
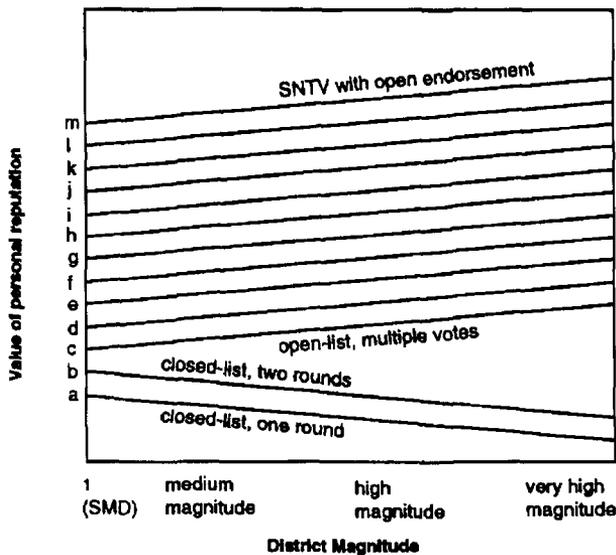


FIG. 1. Combined effects of BALLOT, POOL, VOTES and M on
the value of personal reputation

On the vertical axis of Figure 1 is represented the rank ordering of feasible config-
urations of BALLOT, POOL, and VOTES from Table 1. The greater the value of personal
reputation for a given configuration, the greater the value on the vertical axis. On
the horizontal axis, M ranges upward from 1 and, in principle, has no maximum.
The value of personal reputation for each configuration in a SMD, then, is repre-
sented by its vertical intercept. As M grows for all configurations in which BALLOT
$\neq$ 0, so does the value of personal reputation.[28] The relationship is illustrated by
the positive slope on the line leading from each of these intercepts. For the two
configurations where BALLOT = 0, the slope is negative, illustrating the negative
effect of M on the value of personal reputation. These two configurations are also
those with the lowest intercepts to begin with—that is, they generate the least
incentives for politicians to cultivate personal reputations at any M.

## III. Discussion

In concluding, it is important to emphasize what this model claims to be and what
it definitely is not. First, we want to reiterate that our rank ordering of the value
of personal reputation, with its empirical examples, pertains strictly to electoral
systems, rather than to government systems as a whole. Clearly, other factors
besides electoral rules affect the value of personal reputation. Foremost among
these is constitutional type. Generally, if an assembly's primary function is to select
and maintain in office an executive dependent on parliamentary confidence, we
can expect party cohesion to be more important, and personal reputation thereby
less, than when the origin and survival of the executive is independent of the assem-
bly (Shugart and Carey, 1992). So, *ceteris paribus*, personal reputation will be more
important in a presidential than in a parliamentary system. The model developed
here, however, focuses exclusively on electoral rules, leaving the systematic incor-
poration of other variables, like constitutional system, to subsequent research. Our
claim is simply that when all other things are equal, then altering the electoral rules
alters the value of personal reputation as shown in Table 1.

Second, the graphic representation of electoral systems in Figure 1 is schematic.
The ranking of BALLOT, POOL, and VOTES is merely ordinal, and the spacing on the
vertical axis between each configuration of the variables has no meaning. Likewise,
the specific slope of the lines emanating from each configuration of variables as M
increases is arbitrary. The model makes only two claims about these lines. One is
that whether they turn upward or downward indicates whether the value of
personal reputation relative to party reputation increases or decreases as M
increases. The other is that none of the lines intersect as M increases.[29] The bottom
line is that the model must remain at this level of abstraction until it can be tested
by operationalizing the dependent variable—the relative values of personal and
party reputations.

In order to test the model, data would have to be available across a broad range
of countries with various electoral systems. There are a number of ways in which
the dependent variable might be estimated, although all present methodological
problems. The problems fall mainly along three lines: data are unavailable, data are
extremely costly to collect, or data only partially describe the dependent variable.

Promising, but unavailable, proxies are the most common. For example, ideally,
public opinion polling data would reflect the level of name recognition of legisla-
tors among the electorate. But even where polling data are available, they are

unlikely to be reliable and comparable across countries on this specific topic. We could also examine the degree to which candidates from traditionally underrepresented social groups, such as women and ethnic minorities, are able to gain election on the basis of votes cast for them directly (Rule and Shugart, unpublished). However, this is an imperfect method, as many other factors may affect the degree of representation of such groups (Rule, 1987). Moreover, in some cases, the process by which personal votes are cultivated so favors those 'insiders' who have ready access to costly campaign resources that a high dependence on personal reputation may actually correlate with higher barriers to representation of 'outside' groups, including women and ethnic minorities (McCubbins and Rosenbluth, forthcoming; Reed, 1994; Shugart, 1994).

Another method might be to rely on records of legislative votes. Students of U.S. politics estimate the independence of legislators from their parties with roll call voting data. But recorded votes are rare in many legislatures (Carey, 1993), so this approach is not promising for a broadly comparative study. Similarly, campaign spending data could shed light on the relative importance of personal versus party reputations. The ratio of campaign funds raised and spent by individual candidates to those spent by parties could serve as an indicator of the relative importance of reputations. Again, however, the variance across nations in campaign finance laws[30] and enforcement mean that reported levels of spending are unlikely to reflect actual spending accurately.

Other methods of estimating the dependent variable could be costly, but are feasible. One rough proxy would be amendments offered to legislation. Amendments can be a form of particularism, when they seek to modify the effects of legislation for a specific group or region (Ames, 1987, 1992). They can also be vehicles for self-promotion for the legislators who offer them. The more valuable is personal reputation, then, the more amendments we should see offered to legislation. Of course, merely counting amendments would be a mind-numbing task, and it does not take into account their substance, nor the variations in rules that determine legislative procedure. However, even the raw number of amendments offered can serve as an indicator of how legislators organize their institution. And if legislators organize themselves so as to serve their own career interests (Mayhew, 1974), then the raw number of amendments could indeed shed light on the value of personal reputations.

Along these same lines, the internal organization of legislatures offers another promising means of estimating the value of reputations. Legislative committees are forums in which individual politicians can establish reputations and claim credit for accomplishments independently from their parties. The prominence and autonomy of committees relative to party caucuses within legislatures, then, could serve as an indicator of the dependent variable. The principal challenge to this approach would be to establish a uniform means of estimating committee autonomy across legislatures.

Policy outcomes—or policy 'styles'—are another potentially interesting dependent variable. As we discussed, more attention by legislators to personal reputation would generally lead to more 'pork' in a country's budgets (Lancaster, 1986; Lancaster and Patterson, 1990). Where, on the other hand, party reputation matters more, policymaking should be more 'efficient' (Cox, 1987; Shugart and Carey, 1992) in the sense that voters vote on the basis of broad policy options rather than on the basis of promised particularistic benefits. Relatedly, the efforts of candidates

to cultivate personal reputations can lead them to engage in corruption, mainly because the great expense of wooing voters on the basis of particularism encourages candidates to seek to maximize private contributions beyond those legally permitted. The recent experiences of Brazil (Geddes and Ribeiro Neto, 1992) and Japan (Reed, 1994) and probably Italy all suggest that electoral incentives were a major factor in these countries' extraordinary corruption scandals. However, high levels of corruption can be found even in some systems that do not provide for particularistic campaign incentives (Venezuela, for example). Moreover, establishing measures of either corruption or the more 'benign' pork-barrel spending cross-nationally will be extraordinarily difficult.

One other policy variable that may deserve attention is the overall degree of economic liberalism in trade and industrial policy. Protection of domestic production and outright state ownership permit politicians to cultivate the loyalty of 'special interests,' to provide patronage, and to raise money for campaigns, which tend to be especially expensive in systems that mandate intraparty competition. However, many factors besides the electoral system contribute to a country's relative deviation from an ideal type of a liberal economy. Still, it may be possible to find a relationship between electoral rules and degrees of economic liberalism that are greater or less than would be predicted on the basis of more conventional variables, such as level of development, size of domestic market, or the opportunity structure created by prevailing levels of world or regional trade. For instance, Italy long retained levels of protection and state ownership far greater than its European Union partners, which would be expected on the basis of our tentative hypothesis about the effects of electoral incentives on economic policy. Japan's high levels of protection may be explicable in part by its electoral system (Ramseyer and Rosenbluth, 1993). These suggestions about the effects of our variables on policy are very tentative, but do suggest directions for future research.

This essay establishes a theoretical model for evaluating the relative values to legislators of personal versus partisan reputations, based on electoral rules. The advantages of the model are its simplicity and its generalizability. The variables employed are straightforward and generate a relatively simple scoring system that nevertheless describes a broad array of different electoral systems. Moreover, the rank ordering of systems, and their interaction with district magnitude, are intuitively appealing. One of the more interesting results is the argument that the effects of increasing district magnitude on the value of personal reputation are opposite under closed list systems to those under all other types of electoral system. The main challenge presented by this article is to develop a means of measuring the dependent variable, so as to test the model empirically. Although we identify an array of possible methods to do this, they are generally costly, and will have to await future research. We welcome any comments or suggestions as to how this work might proceed.

## Notes

1. Myerson (1993), although using a very different methodology, addresses the related problem of identifying conditions under which politicians will favor special interest groups, as opposed to pursuing policies that distribute benefits equitably across all voters.
2. The upper house of the Japanese parliament was a good example prior to the adoption of closed party lists for that portion of the house that is elected nationally.

3. For example, we do not deal with properties of electoral systems such as the presence of public financing, or restrictions on reelection. On the latter, see Carey (1993).

4. Apart from electoral rules, the most important institutional factor determining the value of reputations is regime type, such as presidential, parliamentary, or other forms of government (Shugart and Carey, 1992). In this article we hold all such other factors constant.

5. Of course, when votes are cast for party lists in the first place, rather than for candidates or factions, this condition also holds. See the VOTES variable below.

6. In Spanish-language sources, the term generally used is *listas cerradas y bloqueadas*, meaning closed and blocked lists. Some sources use the term 'fixed lists' (Bogdanor, 1983). What the English-language literature generally calls open lists are called in Spanish *listas cerradas y no bloqueadas*, where 'closed' refers to the absence of cross-party preference voting (*panachage*), rather than an absence of any preference voting.

7. There are different degrees of openness, i.e., different degrees to which personal preference votes can change the order of candidates. See Carstairs (1980), Crewe, (1981). We do not attempt to capture these sorts of variation. If candidates realistically can expect to change their rank on the list by building a personal reputation, then we expect the system to resemble those in which personal votes alone determine the order of election. If, instead, preference votes are unlikely to alter a candidate's chances of election, we expect the system to resemble a closed-list system. See Rule and Shugart (forthcoming), for a discussion of how to operationalize these finer distinctions among preference-vote systems.

8. In Finland, each list was restricted to a maximum of three candidates (two after 1935). Thus, in most districts, the larger parties would have to run more than one list each if they were to take full advantage of their voting strength. In Uruguay, each list may have as many candidates as there are seats from the district. In both systems, a candidate may appear on more than one list in the same or in different districts. On Finland, see Törnudd, 1968, p. 57; on Uruguay, Gonzalez, 1991.

9. This is consistent with Taagepera and Shugart's observation that SMD plurality systems are equivalent to closed list PR elections in which $M = 1$.

10. Note that Rae referred to this feature as 'ballot structure,' but we speak of two variables, one referring to ballots and the other referring to votes. Rae's concept of an ordinal vote, as the opposite of a categoric vote, is so broad that it accounts for numerous variations on noncategoric votes that may affect the degree of personal vote. Our scoring system allows us to differentiate, for example, transferable votes, from other forms of preference votes.

11. It may be confusing that voters cast more than one vote when the variable VOTE takes the value 1. However, recall that these scores are purely ordinal. The score 1 simply means that a given electoral formula provides more incentive on the basis of the VOTE variable to cultivate a personal vote than a formula on which VOTES = 0, but less than one for which VOTES = 2. The numbers themselves have no cardinal meaning. We could just as easily assign values of 10, 100, and 1000.

12. This feature of a transferable vote is captured by a score of 1 on POOL. The score on VOTES simply tells us that voters are able to express preferences for more than one candidate.

13. The same system could allow both forms of multiple voting. In multimember district majority systems such as those formerly used in Belgium and Switzerland, voters had M votes in the first round. Any seats not filled by candidates garnering a majority of votes cast went to a second round, where voters again could cast as many votes as there were seats left to be filled. See Carstairs (1980).

14. The effect of a change from multiple to single vote can be seen in some journalistic anecdotes from the Jordanian election of 1993. According to the Los Angeles *Times* of 9 November 1993, under the previous (limited-vote) system, voters tended to cast their first vote on the basis of clan, their second on the basis of constituent service, and only their third on ideology. Candidates tended to run on 'tickets.' Under the new SNTV system, surveys of voters suggested that voters would cast their single votes on the basis of services and patronage, to the benefit of pro-government candidates. Voters could no longer have their cake (expressing an ideological preference for an opposition candidate) and eat it, too (retaining constituent services provided by the pro-government members).

15. The reason parties that can control the use of the label will refrain from endorsing more than one list in the absence of vote pooling across all lists is that having multiple endorsees raises the specter of errors: either failing to nominate the optimal number, or failing to equalize votes across an optimal number. See Cox and Niou (1994) for a discussion of errors under SNTV and Cox and Shugart (forthcoming) for an extension of the concept to Colombia's personal-list system.

16. This observation is worth noting, as do Taagepera and Shugart (1989), in underscoring the point that systems that appear to be based on different principles of representation can differ on nothing more than M. The most familiar example is closed list PR vs. SMD plurality. The point is testimony to the importance of M in determining the nature of representation provided by any given electoral system.

17. Formally, such control has been in place only since party names were placed on the ballot alongside the names of candidates, making it more implausible that a self-nominated candidate could claim to be a given party's choice when he in fact was not. In practice, this had not been a problem for some time, given the discipline parties developed as early as the Victorian age (Cox, 1987).

18. All seats in the Mexican congress are elected according to closed lists, but not all are from SMDs.

19. Under some systems (*panachage*) voters may even choose candidates from more than one party list. Vote pooling at the party level means that voters who exercise this option are increasing the total party vote for each party whose candidates they select. Thus, just as is the case when voters must choose candidates all from the same list, a vote for any candidate is a vote for the list on which the candidate was nominated. *Panachage* opens up the possibility of blocks of candidates running across party lines, perhaps thereby anticipating post-election coalition possibilities.

20. This is a variant on the approval vote. However, as characterized by its advocates, the approval vote would not involve pooling candidates' votes on the basis of party, as would the system we describe. (See Brams and Fishburn, 1978).

21. It is ironic that the system is known as *single* transferable vote, while we see it as a system with multiple votes. The vote is 'single' only in the sense that it is used to elect only one candidate, but voters are actually casting votes for several candidates.

22. In Uruguay, the same vote is applied in both the presidential and congressional election. Votes are cast for a faction (*sublema*) of a party (*lema*), headed by a particular presidential candidate, but are pooled at the party level. Thus, what Uruguayans term the 'double simultaneous vote' applies to the whole electoral system, and not just to the presidential election. The incentive such a system generates for factional leaders to cultivate personal support among voters is the same as that under open list with a single vote.

23. A question that arises here is why there would be multiple lists if candidates nominate themselves and therefore party leaders do not control the label. The reason is that the decision of candidates to form an alliance must be mutual. Thus a renegade may be denied—not by the party organization, but by other prospective candidates who are committed to the party. However, like-mined candidates may form an alliance of dissidents using the same party label. That this practice is so rare is testimony to the salience of party labels, which stems from factors other than the electoral formula. Still, 'the campaign is carried out in a highly individualistic fashion' (Törnudd, 1968, p. 58), as our model would predict.

24. This provision is known as *candidato nato*, literally 'birthright candidate' (Mainwaring, 1991). Those who lose under the party label are not guaranteed future list positions, nor can first-time candidates gain access to the party list without approval of a local party organization. Thus, the score of 2 on BALLOT applies to incumbent politicians in Brazil.

25. In its actual use in Japan, the majority party is able to act more coherently than its low ranking in Table 1 would imply because of another factor that is outside the scope of our scoring system: Japan's parliamentary system and the incentives that maintaining a cabinet gives to building a party reputation. Still, the salient feature about Japanese elections from the standpoint of this model is that legislators maintain their own personal campaign organizations (*koenkai*). See Curtis, 1988; Ramseyer and Rosenbluth (1992).

26. Cox and Niou (forthcoming) state that the SMD plurality system is identical to SNTV, with district magnitude as the only aspect that is varying. We agree that this is a meaningful characterization. However, in our scoring system, SNTV requires a single vote *below* the party level (and no pooling). If a party nominates only one candidate in a single-member district—as it will if it controls the use of its label—then the formula in question by definition cannot take a value of 2 on VOTES.

27. We would not go so far as to claim that pork-barreling cannot be a means of cultivating a personal reputation even in very-high-magnitude systems. After all, one way in which members cope with intraparty competition is by carving out bailiwicks, which are *de facto* sub-districts within the large allocation district. Members then provide pork to their personal bailiwicks. See Ames (1992) and Katz (1980). Such behavior seems to be characterizing Colombian senators since that nation moved to a single nationwide district for its senate.

28. Except for the M = 1, the values on the horizontal axis are left undetermined. There is no theoretical maximum for M. We cannot simply use the number of seats in the total legislature (*S*) as the maximum in a model intended to apply cross-nationally. For a country with a single nationwide district, where M = *S*, assembly size is indeed that country's maximum value, but there is no reason why the value of personal reputation for any given allocation formula would be greater when a given M is the whole legislature versus when it is just one district among several. (Recall that we are only estimating the value of personal reputation at the district level.)

29. We are somewhat less adamant about the second claim, and welcome comments.

30. We would expect campaign finance provisions to be partly endogenous to the electoral rules, as rules giving candidates incentives to cultivate a personal vote would also lead them to prefer to raise their own funds, rather than be dependent on central party leaders. However, we recognize that politicians may nonetheless opt to delegate campaign finance decisions to a central authority within the party, so this variable must be seen as at least partly independent.

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