Under plurality rule, presidents may be elected with narrow support whenever there are more than two “serious” candidates. Even under majority-runoff rules, the eventual winner may have received the backing of only a small minority in the first round. This article shows that majority runoff rules tend to be associated with an “effective” number of presidential candidates greater than three. The effective number for plurality is, on average, less; however, a nontrivial share of such elections have resulted in close multicandidate races. The article proposes an alternative “double complement rule,” which is derived as the arithmetic average of majority runoff and plurality criteria. This rule stipulates that a front-runner with less than a majority of the votes wins without need of a second round if the shortfall of the runner-up from a majority of votes is more than double the leading candidate’s shortfall from a majority. Possible effects and desirable conditions of this rule are assessed in light of the existing debate about electoral methods.

PLURALITY VERSUS MAJORITY ELECTION OF PRESIDENTS
A Proposal for a “Double Complement Rule”

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Several new democracies have adopted in recent years constitutions providing for the popular election of a president. Therefore, an important question for comparative politics is what electoral method to use for presidential elections. Among older regimes with directly elected presidencies, the plurality rule is more common, whereas the trend among the newer regimes has been to favor the majority-runoff method instead. This trend has been especially prevalent among those regimes that previously had presiden-

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cies elected by plurality, but then lapsed into a period of authoritarianism. The appeal of majority runoff stems largely from a desire to avoid what we might call the "Allende syndrome": the election of a rather radical president by a narrow plurality of the vote, leading to a military dictatorship. Majority runoff is favored by many countries nowadays precisely because it seems unlikely to produce such narrowly endorsed winners: The eventual winner after all must win a majority in order to take office. However, we shall review previous research, and present both conceptual reasoning and empirical evidence, all showing that majority runoff actually discourages the coalescence of partisan options and may even encourage fragmentation. Its successful use in the French Fifth Republic notwithstanding, majority runoff has certain disadvantages. On the other hand, the Allende syndrome is a serious danger inherent in plurality systems.

In this article we shall discuss various methods used for presidential elections. We present data that show the number of contenders associated with the several methods in actual use. We do so in light of a theoretical consideration of what goals one would want to maximize in choosing a method of presidential election. Choices may be evaluated in the sense of ideal, normative considerations, as well as in the sense of the real interests of those involved in making choices. With regard to the considerations of choice, this article presents an alternative method that is a compromise between the plurality and majority methods. We call this alternative the "double complement rule." This rule seeks to encourage the coalescence of partisan forces around broad coalitions, as usually happens with plurality, while avoiding the fragmented fields that usually happen under majority runoff. This rule does so by stipulating that the front-runner wins at the first round if the shortfall of the runner-up from a majority of votes is more than double the leading candidate's shortfall from a majority.

DEFINING THE DOUBLE COMPLEMENT RULE

The definition of the double complement rule starts from the simple definition of the two basic rules, plurality and majority runoff, in terms of the relation between the two top contenders' vote shares and then takes an average of the criteria. The criterion that defines plurality rule is that the vote

1. Given that the Chilean experience is often cited as reason for why presidents should not be elected by plurality—indeed, Chile is just one of several redemocratized or newly democratic countries to have adopted majority runoff in recent years—it is ironic that Chilean presidents actually were not elected directly, as will be discussed below.
share of the leading party \((v_1)\) must be greater than the vote share of the second largest party \((v_2)\):

\[ v_1 > v_2, \]

whereas the first-round condition that defines majority runoff is

\[ v_1 > 50\%. \]

The arithmetic average of the two conditions is

\[ v_1 > (\frac{1}{2})v_2 + 25\%. \]

We can rearrange this criterion algebraically and express it in terms of each party's difference from majority. We then have a \textit{double complement rule} that requires the following:

\[ 50\% - v_2 > 2(50\% - v_1). \]

This rule thus stipulates that the front-runner wins at the first round if the shortfall of the runner-up from a majority of votes is more than double the leading candidate's shortfall from a majority. If the front-runner does not meet this requirement, then there is a runoff between the top two contenders. Figure 1 shows how this rule would work with a given distribution of votes between the top two candidates. For our purposes, only those cases below the diagonal that ends at the origin matter; any point below it is a situation in which \(v_1 > v_2\). Under plurality rule, any point in the lower right half of the figure represents a victory by the front-runner. The diagonal separating the regions marked I and II represents the margin needed to guarantee first-round victory under the double complement rule. To the left of this line, in Zone I, the race between the top two candidates is too close for a first-round victory under the double complement rule. To the right of the line, in Zone II, the first round is decisive under double complement rule, but not under majority rule. Under majority rule, only points in Zone III are decisive in a single round. The double complement rule thus eliminates a zone of very close election outcomes (Zone I) in which one round would be decisive under plurality rule—under double complement, these require a runoff—and also eliminates the runoff in a zone of elections in which the front-runner has a wide margin (Zone II). As shown by the figure, the margin by which a front-runner must surpass the closest challenger increases as the share of the total vote won by the front-runner decreases. The figure also indicates a difference between the double complement rule and another commonly advocated alternative: the forty-percent-runoff rule, under which a runoff is held in the event that the
front-runner is short of 40% of the votes. The subzone marked “Ia” represents the region in which a first-round victory would be achieved with the forty-percent rule, but in a race too close to be decisive under the double complement rule.

Although we believe that our proposal is worthy of adoption, we do not claim that it is flawless. Indeed, we present this alternative largely in the hope that it will spark discussion and debate among theorists and practitioners alike. Now let us consider the theory on presidential elections, especially the contributions of the social-choice literature.
THEORY ON PRESIDENTIAL ELECTION METHODS

Presidential elections may, of course, be seen as a subcategory of elections in single-member districts. There may be, however, some ways in which presidential elections are special. For example, in most systems that employ presidential elections, the position of the chief executive is unique in being the only office that is elected from a national constituency. This feature of presidential elections may have consequences for their operation, mainly in the greater expectations placed on them—whatever the reservations of many scholars—for providing mandates for policy directions on behalf of an entire nation. However, at least initially, we shall proceed as if such elections were simply identical to all other single-seat elections. Thus we shall review in this section some of the main theorizing that has been done with regard to voting methods for single-seat districts. In doing so, we highlight practical as well as theoretical problems that befall currently used or advocated methods.

In the literature in the social-choice tradition, there is a long record of analyzing the consequences of various voting methods. As summarized by Riker (1982), this literature notes that the method of simple majority among binary alternatives produces the most “fair” outcomes. Such elections obviously guarantee the choice favored by a majority of voters. They always produce a Condorcet winner, are immune to strategic manipulation, and satisfy various other conditions of fairness (Riker, 1982, p. 41-64). However, social choice tells us that, as soon as the number of alternatives is extended to at least three, there is no reliably fair method. All fail at least one test of fairness, whether because of vulnerability to cyclical majorities (Arrow, 1951), failure to produce a Condorcet winner even if there is one, or other paradoxes (Riker, 1982). One possible solution—to restrict the number of

2. Collegial executives, which consist of presidential elections in multiseat districts, are possible, but rare. Indeed, only Uruguay (1952-1966) would meet this criterion. The other empirical case of a collegial presidency, Cyprus (1960-1963) provided for two simultaneous executive elections among separate (Greek and Turkish) electorates. Thus each copresident was elected in a single-seat district.

3. Vice presidents, who are usually elected on a common ticket with the president and are politically subordinate to the latter, will not concern us here.

4. There are exceptions in some U.S. states, where the equivalent of the “national” constituency, that is, the statewide, may also elect other executive offices, such as attorney general or certain regulatory commissioners. At least two countries (Brazil 1945-1964) and the Philippines (currently) have elected their vice presidents separately. There is also the possibility of a nationwide constituency for the legislature, but such an election is still different in that there are multiple seats at stake in the latter, but only one office in the presidential election.

5. A Condorcet winner is one who could defeat each of the other candidates in a multicandidate field in separate head-to-head votes.
alternatives to two—cannot be justified on democratic grounds, because it requires the prior elimination of some alternatives that some voters may have favored. Thus a fundamental problem in the theory of elections for single-seat districts is how to cope with multicandidate races.

The two most common rules are the plurality method and the method of majority runoff. Plurality is a rule that establishes winners on the basis of rank: With $M$ seats at stake, the candidates with the $M$ highest vote totals win office. Thus, with $M = 1$, the candidate with the most votes wins, regardless of his or her actual share of the vote. Majority runoff, on the other hand, stipulates as its criterion for winning office a minimum share of the vote; that is, a threshold: The winner is that candidate who has surpassed 50% of the votes cast. However, even majority runoff contains a definition of success based on rank: If the initial election fails to produce a candidate who meets the rule's vote threshold, then a runoff (second round) is held between the candidates who ranked first and second in the preliminary election. In the runoff, then, the threshold and rank criteria are identical: The winner is the candidate that finishes first among two alternatives, that is, wins a majority.

The rank criterion of plurality rule means that, theoretically, a candidate can win with much less than a majority. In a multicandidate race, equilibria among candidates are either unstable or noncentrist (Cox, 1987). Thus it is not only possible but also likely that the winner will not be a centrist choice. It is probably not a controversial normative point to require that a good electoral method be one that does not make it likely that the winner will have been endorsed narrowly by substantially less than a majority of the electorate. Such a candidate may be extreme, rather than centrist, and may even be a Condorcet loser. Particularly damning for plurality rule in multicandidate elections is the rule's vulnerability to one type of manipulation: the decision of noncentrist candidates to enter precisely to upset the centrist equilibrium that would obtain with a two-candidate race. This can happen especially if early announcing candidates are not believed to have wide support; then other candidates may decide to jump into the race, knowing that a relatively small vote share (perhaps not even 30%) could be sufficient to produce victory.

6. Proportional representation (PR), requiring multisatellite districts, avoids many of the problems inherent in single-seat district methods, although no method of PR is flawless either.

7. There are variations on this method. For instance, in the absence of a candidate that meets the threshold criterion (majority) in the first round, the top three, rather than two, candidates may contest a runoff, in which the criterion is purely one of rank, that is, plurality. This was the rule in presidential elections in the German Weimar Republic. Another possibility is that, with no candidate meeting the majority threshold, the alternative to the rank criterion of two runoff contenders is another threshold for entry into a runoff in which rank (plurality) determines the winner. In France and Hungary, the threshold for entry into the runoff has been as low as 12.5% of the electorate.
Majority runoff at least prevents the eventual winner from having been narrowly endorsed by not requiring that a single round produce a winner. By definition, the winner will have been endorsed by a majority, because the decisive second round, if required, is a two-candidate race. A computer simulation of voting (Merrill, 1984) has shown that the majority-runoff method is far more efficient at producing Condorcet winners than is plurality, when there is a multicandidate field. However, such an approach takes the number of candidates running as a fixed parameter and therefore ignores the likelihood that more candidates enter under majority runoff (Wright & Riker, 1989). We might add as well that more candidates are taken seriously under a system in which two candidates “win” places in the runoff (cf. Greenberg & Shepsle, 1987). If the number of candidates gaining significant vote shares increases with majority runoff compared to plurality rules, then the Condorcet efficiency of majority runoff may actually be lower than that of plurality, when the number of candidates is taken to be an endogenous characteristic of the rules used (Wright & Riker, 1989). Given a wide field of candidates, it is debatable whether majority runoff even meets in a meaningful way the criterion of avoiding narrowly endorsed winners. As noted, the eventual winner is by definition endorsed by a majority. This is so, however, only because the second round is restricted to two candidates. If the first round was a multicandidate field, the two who placed into the runoff may each have received small shares of the vote and may not be centrists. The larger the field of candidates, the greater the risk that the Condorcet winner is some candidate who placed third or lower or that there is no Condorcet winner.

In fact, once we endogenize the number of candidates, plurality rule may meet the social-choice theorists’ criterion of simple majority selection better than majority runoff because of a dynamic process of “natural selection”: Over time, plurality generally discourages minority candidates from being able to appear as “real challengers” and thus maintains a two-party system (Riker, 1982; Wright & Riker, 1989). Still, a fundamental problem with plurality—as much political as theoretical—is that now and then a plurality-rule contest nonetheless produces a dispersed field of candidates in which the victor is only narrowly endorsed. This is a political problem in presidential systems because it raises the specter of delivering the head of the executive branch and commander of the armed forces into the hands of a minority force. It is a theoretical problem because it raises the challenge of other rules that might avoid the problems of both of the most common rules: the tendency to permit, under certain circumstances, narrowly endorsed winners.

8. By narrowly, we mean by less than a majority in a close race. Obviously, a candidate can also win a majority narrowly, as in the case of a 501-500 vote among 1,001 voters.
Perhaps the most promising alternative rule—one even dubbed "the election reform of the 20th century" by its leading advocate (Brams, 1980, p. 105)—is the approval vote. Under such a rule, a voter can cast votes for as many candidates of whom he or she approves. Each vote has equal value, each candidate's total approval votes are summed, and the winner is the candidate with the most votes. The main benefit of such a rule is that it is said to produce centrist equilibria (Cox, 1985) and to be free from strategic manipulation (Brams & Fishburn, 1978), although only under conditions that may be unrealistic in practice, according to Niemi (1984). The approval vote has won considerable support among some academics in the United States, especially for use in presidential primary elections, and at least one journal article has been published advocating its use in national presidential elections elsewhere (Anckar, 1984).

The primary disadvantage of approval voting for presidential elections, however, is its probable effect in proliferating the number of candidates (Riker, 1982). This drawback is serious even if Niemi's claims of the rule's vulnerability to strategic manipulation and undesirable outcomes are dismissed. One level of strategy that does not obtain under approval voting is the decision of some candidates to abstain from running. Many more would run, precisely because of the rule's most promising feature: its touted ability to produce centrist outcomes. Minoritarian candidates could enter—and voters could "safely" vote for them—without fear of helping a "lesser evil" among the majoritarian candidates. With more candidates, one of the principal advantages of presidential elections is obviated. That advantage may be termed, after Strom (1989), *identifiability*.

An election may be said to provide for high identifiability when voters can easily perceive the connection between their vote and their choice for whom they want to lead the government. Whether one accepts the basic "liberal" (Riker, 1982) theory of democracy as affording the opportunity to throw out bad leaders or the more demanding "mandate" theories by which voters can select a preferred policy package (Ranney, 1962), identifiability is an important feature of elections for single officials.

If voters are retrospective (Fiorina, 1981) and either confirm or deny reelection to the incumbent president or the candidate of the incumbent's party, then it follows that voters must be able to see clearly for whom they must vote if they want a change. In the extreme (and unlikely) case in which a majority of voters approved all candidates other than the incumbent, the liberal condition of rejection of the unpopular incumbent would be met. However, approval voting appears to fail this liberal test of democratic election methods under conditions that are likely to be quite common in multicandidate fields. Voters who wanted the incumbent out, but disliked
some challengers even more than they disliked the incumbent, would be unclear on which candidates to approve. Unless they have dichotomous preferences, voters would confront "multiple strategies and no obvious way to translate one's feelings into a vote" (Niemi, 1984, p. 958).

Identifiability is an especially important component of any theory of voting that calls for voters to be able to choose from among policy programs. One need not even go so far as the "responsible party" theory of democracy—which Riker (1982) equates with his inadmissible "populist" conception—to see the utility of presidential elections as means to gauge the sentiments of a broad spectrum of voters. For instance, even if we doubt that voters (in the aggregate) can confer mandates, it is justifiable to allow that an election for head of government ought to be able to provide at least a general sense of the direction in which the voters—that is, a majority of them—wish the country to be taken by its leaders.9 One does not have to grant any mystical properties to the electorate, such as claiming that a "popular will" can be determined from an election, to hold that presidential elections should at least permit voters to be allowed to choose one policy direction over another. If the choice is to be meaningful, one would want to be sure that the chosen candidate would be widely rather than narrowly endorsed.

Moreover, voter choice among competing policy platforms can also be a component of retrospective voting. As Powell (1989) notes, "the threat of possible retrospective sanctions should make leaders more attuned to possible citizen desires and encourage them to anticipate citizen preferences on issues that arise after they are elected" (p. 119). Note that this characterization of voting allows for voters' policy preferences to play a role in choosing a president: Leftist candidates can be expected to respond to different issues and with different responses than rightist candidates (see also Eulau & Prewitt, 1973), and even Fiorina (1981, p. 197) concedes that voters use assessments of past performance partly to attribute and pass judgment on candidates' likely future actions in office. Indeed, candidates' (future-oriented) campaign promises in one election (and their opponents' reminders of what those promises were) are one of the most useful resources voters have in exercising their retrospective vote in the next election.

Thus retrospective and prospective theories of voting are not sharply separated. Identifiability of choices is a crucial requirement for either to work, so that voters can see a connection between a desired outcome and what voting strategy best contributes to that outcome. With the above considera-

9. If nothing else, it is at least almost certainly the case that politicians who have programs that they wish to enact want elections to provide this kind of guidance. And, after all, politicians are the ones who choose voting methods.
tions in mind, then, we come to the conclusion that a presidential election method should have the following, partially contradictory, desirable properties:

1. It should provide for a broadly endorsed winner, preferably one with a majority.
2. It should discourage proliferation of the number of candidates much beyond two.

These desirable properties are partially contradictory because, as other work (reviewed above) has shown, (a) the most reliable way to get a broadly endorsed winner is to use simple majority among two alternatives, and plurality encourages a natural selection of two alternatives; but (b) plurality from time to time permits narrowly endorsed winners, because its only criterion for victory is rank rather than a threshold; and (c) using a threshold (i.e., majority) or else approval vote prevents this pitfall of plurality, but may encourage the proliferation of candidacies.

Would the double complement rule meet these criteria more satisfactorily? There is a good chance that it would. By requiring, in the event that no candidate wins a majority of the vote, a minimum gap between the two front-running candidates, the rule should accomplish both goals. Winners who did not get an outright majority would at least not be able to win narrowly without a runoff (and therefore an ultimate majority). The degree to which the front-runner eclipsed the runner-up would be greater the lower the vote share of the front-runner—a feature that was demonstrated graphically above. Moreover, the double complement rule would lessen the incentive for multiple candidate entries, because simply denying the front-runner a majority is insufficient to force a runoff and simply ranking second is insufficient to participate in a runoff.

Obviously there is no one perfect method. We share the claim of Riker (1982) that all methods introduce some measure of unfairness whenever there are more than two candidates. However, we will regard as preferable to existing methods an alternative that makes victory by a narrow margin in a multicandidate race less likely (or preferably impossible) than does plurality rule, without encouraging entry of "third" candidates to the degree of majority runoff rules. We now turn to analysis of outcomes in actual presidential elections under majority and plurality rules, as well as other rules that have been in use. Then we discuss the likely effects of our proposed double complement rule and discuss the question of the choice of rules by actual political actors.
EXISTING SYSTEMS

In this section we present data for existing plurality and majority-runoff systems, as well as for a few other variations in current or recent use for popular presidential elections. Table 1 presents two forms of data: the effective number of candidates and the vote shares of the first two candidates. We provide medians for each country and means for each category of electoral system.

The data confirm the greater tendency of plurality than majority to approximate the ideal of producing two-candidate races and widely endorsed winners. The average effective number of candidates\(^{10}\) is 2.7 under plurality, suggesting two serious candidates plus some nonserious challengers. Under majority runoff, the average effective number of candidates is 3.8.

On average, plurality presidential elections have provided for a winner’s vote share of 48.9\%, whereas the average for the majority-runoff systems is only 40.0\%, using first-round votes. Plurality comes closer to achieving the goal of two-candidate competition than majority by either of our measures. Under plurality, the average for the second candidate is 34.2\%, whereas the second candidate under majority runoff is at 25.3\%. Thus the gap between the top two finishers under plurality is, on average, 14.7\%, and these two candidates combine for 83.1\% of the total vote. Under majority runoff, the gap between the two main candidates is about the same as under plurality, 14.7\%, but these two candidates account for only 65.3\% of the vote. Before evaluating these findings, let us consider briefly some other methods that have been used to elect presidents. There are two other classes of rules that are shown in Table 1 for the sake of comparison, the forty-percent-(as opposed to majority) runoff rule and indirect methods.

FORTY-PERCENT-RUNOFF RULE

Instead of a first-round threshold of a majority, the criterion for first-round victory can be to attain a threshold of 40\% of the votes. If the threshold is not met, a runoff is held between the two highest ranked candidates. In its actual use in Costa Rica, a runoff never has been required, probably because the lower threshold, compared to majority runoff, lessens the prospects that a third candidate can force a runoff (see Shugart & Carey, 1992: Appendix A). The median share of the vote for the front-runner has been an absolute

10. This measure is defined as \(N = (\sum p_i^2)^{-1}\), where \(p_i\) is the share of votes won by the \(i\)-th candidate. \(N\) is a transformation of Rae’s index of fractionalization: \(N = 1/(1 - F)\). See Taagepera and Shugart (1989).
Table 1

*Median Effective Number of Candidates and Major Candidates Vote Shares Under Different Electoral Rules*

<table>
<thead>
<tr>
<th>Country and Time Period</th>
<th>Number of Elections</th>
<th>Effective Number of Candidates&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Median Percentage Votes for Four Highest Vote-Winners&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Plurality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil (1945-1960)</td>
<td>4</td>
<td>2.6</td>
<td>48.5</td>
</tr>
<tr>
<td>Colombia (1930, 1946, 1974-1990)</td>
<td>7</td>
<td>2.7</td>
<td>47.4</td>
</tr>
<tr>
<td>Dominican Republic (1962, 1982, 1992)</td>
<td>3</td>
<td>2.7</td>
<td>46.5</td>
</tr>
<tr>
<td>Nicaragua (1990)</td>
<td>1</td>
<td>2.2</td>
<td>54.7</td>
</tr>
<tr>
<td>Philippines (1946-1969, 1992)</td>
<td>8</td>
<td>2.1</td>
<td>50.4</td>
</tr>
<tr>
<td>Venezuela (1958-1988)</td>
<td>7</td>
<td>2.6</td>
<td>49.2</td>
</tr>
<tr>
<td>Mean of all plurality elections</td>
<td>30</td>
<td>2.7</td>
<td>48.9</td>
</tr>
<tr>
<td>(Standard deviation)</td>
<td>(0.9)</td>
<td></td>
<td>(10.4)</td>
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<tr>
<td>Majority runoff</td>
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<tr>
<td>Brazil (1989)</td>
<td>1</td>
<td>5.3</td>
<td>30.5</td>
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<tr>
<td>Chile (1989)</td>
<td>1</td>
<td>2.6</td>
<td>55.2</td>
</tr>
<tr>
<td>Ecuador (1978-1992)</td>
<td>4</td>
<td>5.2</td>
<td>28.2</td>
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<tr>
<td>France (1965-1988)</td>
<td>5</td>
<td>4.0</td>
<td>43.9</td>
</tr>
<tr>
<td>Peru (1985-1990)</td>
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<td>3.4</td>
<td>42.9</td>
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<td>Poland (1990)</td>
<td>1</td>
<td>3.9</td>
<td>39.6</td>
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<tr>
<td>Portugal (1976-1986)</td>
<td>3</td>
<td>2.3</td>
<td>56.4</td>
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<tr>
<td>Mean of all majority elections</td>
<td>17</td>
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<td>40.0</td>
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<tr>
<td>(Standard deviation)</td>
<td>(1.1)</td>
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<td>(11.5)</td>
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Other methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Mean</th>
<th>Median</th>
<th>Standard deviation</th>
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<tbody>
<tr>
<td>Forty percent threshold on first round</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Costa Rica (1953-1986)</td>
<td>9</td>
<td>2.2</td>
<td>50.3</td>
</tr>
<tr>
<td>(Standard deviation)</td>
<td></td>
<td></td>
<td>(0.4)</td>
</tr>
<tr>
<td>Electoral college</td>
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<tr>
<td>Argentina</td>
<td>2</td>
<td>2.6</td>
<td>50.6</td>
</tr>
<tr>
<td>United States of America (1912-1988)</td>
<td>21</td>
<td>2.2</td>
<td>53.5</td>
</tr>
<tr>
<td>(Standard deviation)</td>
<td></td>
<td></td>
<td>(0.3)</td>
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<tr>
<td>Congressional selection if no</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>popular-vote majority</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chile (1931-1970)</td>
<td>9</td>
<td>2.7</td>
<td>50.5</td>
</tr>
<tr>
<td>(Standard deviation)</td>
<td></td>
<td></td>
<td>(0.7)</td>
</tr>
<tr>
<td>Estonia (1992)</td>
<td>1</td>
<td>3.1</td>
<td>42.7</td>
</tr>
</tbody>
</table>

a. Median value for each country; mean over all elections for each method of election
b. Median values may add up to more than 100% in some cases.
majority, 50.3%, with the runner-up receiving a median share of 41.2%. The rule in the one case for which we have data to report\textsuperscript{11} appears to have a desirable property of producing majority winners and healthy two-candidate competition. Indeed, it must be taken seriously, as it is often proposed by those who advocate replacing the American electoral college by a direct vote.

However, in Costa Rica there has been one close election in which the candidate who won 40% almost surely would have lost a runoff had one been held.\textsuperscript{12} Moreover, the rule does not prevent narrowly endorsed winners, for example, 44% to 43%. Also, as under majority runoff even a fragmented field of challengers can prevent a first-round victory if a third candidate siphons off enough of the front-runner’s votes to hold the front-runner to less than the rule’s stipulated threshold. Under double complement rule, a fragmented field of challengers may not be sufficient to prevent a first-round victory; multicandidate competition must squeeze the margin between the top two candidates.

**INDIRECT METHODS**

There are also indirect rules in which presidential candidates nonetheless campaign as if it were a direct election.\textsuperscript{13} Argentina and the United States both use an electoral college, with a majority being required there for victory. In the absence of an electoral-college majority, in Argentina a joint session of congress selects the president from among the two highest electoral vote winners, whereas in the United States, the lower house of congress makes the selection from the top three candidates. The data in Table 1 imply that these rules are quite efficient at producing two-candidate races. In the Argentine elections shown in Table 1, proportional representation was used for allocating electors. Therefore, two-candidate races in both cases may be a product of the decisive majority requirement in the electoral college, and not, as is often assumed, of the block plurality (winner-take-all) rule used in most U.S. states for the allocation of electors.\textsuperscript{14}

\textsuperscript{11} The 40% provision is used in some local elections in the United States, but these are outside the scope of this article, given its concern with presidential elections. Still, this rule deserves more study by theorists of election methods (see Bullock & Johnson, 1992).

\textsuperscript{12} In 1958, the dominant PLN split and a faction presented its own candidate, who won 10.4% of the vote to 41.3% for the official PLN. The center-right candidate won with 44.8%.

\textsuperscript{13} This criterion leaves Finland aside, because voters vote directly for electors, presidential candidates historically have not conducted campaigns for popular votes, and the electoral college is deliberative, unlike the American and Argentine.

\textsuperscript{14} It is plausible, however, that if congress could choose from among the top three in the event the electoral college is not decisive (as in the United States) and minority candidates could win electoral votes proportionally (as in Argentina), then failure to get decisive results in the electoral college would be more common.
Finally, we have systems in which there is a direct popular vote, but in the absence of a majority winner, it is the legislative assembly that selects the president. In Chile, despite the famous Allende victory with only 36% in the 1970 election, Table 1 shows that the median share for the front-runner was 50.5%. Given the congressional runoff, what matters most in the calculations of candidates and parties is the likelihood of winning a vote in congress in the event that a majority is not achieved in the popular vote. If a coalition of political forces does not expect to win a popular majority, it may be able to put together a majority in the assembly. So, it may run a candidate of its own, hoping to prevent a popular-vote majority and make the assembly vote operative. In the Chilean case, the congress that would take the vote was a congress that had been elected at least a year before the presidential election. Thus information on coalition possibilities in congress was already known at the time that presidential candidacies were being contemplated.

Indirect methods appear to meet our criteria only if a coalition of supporters of nonfront-running candidates does not expect to be able to form a majority in congress to block the front-runner. Indirect rules also raise the possibility of a candidate’s being selected who was not the choice of a plurality of the electorate. Such an outcome is widely recognized as illegitimate (e.g., Peirce & Longley, 1981).

15. In the fateful 1970 election, the Christian Democrats, who controlled a plurality of seats in congress, expected their presidential candidate to finish first or second. Either rank would have been sufficient for him to be chosen by congress. However, he placed third. The Christian Democrats, after considerable bargaining, voted to ratify the electoral plurality of the Socialist Allende rather than deliver the presidency to the conservatives, the arch rivals of the Christian Democrats for hegemony over the nonsocialist portion of the electorate. See Shugart and Carey (1992, pp. 85-87).

16. One of the authors of this article, Rein Taagepera, was such a candidate in the Estonian presidential election of 1992. He placed third, and his supporters in parliament joined with those of the runner-up to block the front-runner, who was a holdover from the era of Soviet rule. See Table 1.

17. There is another case of congressional selection in the event a popular-vote majority is not obtained: Bolivia, where congress chooses from among the top three vote-winners. We have excluded this case because voters are not permitted to split tickets between president and congress, so it is impossible to separate the effects of the presidential election method from those of the congressional electoral system. As it happens, congress rarely selects the front-runner. See Shugart and Carey (1992, pp. 81-87).

18. Even so, reversals of popular-vote pluralities have been rare in the cases cited. In Chile, when congress was called on to choose, it always selected the front-runner, although perhaps only because, with the exception of 1970, either the front-runner had a wide lead or else the second candidate was clearly unacceptable to a majority in congress. In the United States, the one-time congress made a choice in a multicandidate field in 1824, and the runner-up was selected. Reversals of the popular-vote plurality occurred in the electoral college in 1876, 1888, and, according to some accounts, 1960. See Peirce and Longley (1981).
EVALUATING THE DATA ON DIRECT PLURALITY AND MAJORITY ELECTIONS

The following two features may be considered characteristic of plurality elections:

1. The tendency for the formation of a broad base of support behind the front-runner.
2. The tendency to coalesce the opposition behind one principal challenger.

For majority runoff, we can conclude that more candidates receive votes, presumably in the hope of either (a) making the runoff themselves and thus winning the support of those candidates who failed or (b) enhancing their own bargaining position with one of the two candidates in the runoff, perhaps exchanging support for policy or office concessions.

These features are consistent with theoretical expectations, including Duverger's law, and the findings of Wright and Riker (1989). Two comments need to be made with regard to this conclusion, however. First, it may not be unusual for individual elections to violate these tendencies, for example, for fragmented fields to appear under plurality rule. Second, even though the two major candidates under plurality rule are well ahead of the rest of the field, about 16% of the vote, on average, is being garnered by minority candidates who may at times be playing the role of "spoiler.”

We now evaluate three aspects of the data that concern the clarity of winners and losers under the two main rules: by considering how common are extremely fragmented fields under plurality, by looking at the ratios between the shares of winning and losing candidates, and by graphing first and second-round votes of the two leading candidates in runoffs.

FRAGMENTED FIELDS UNDER PLURALITY

Table 2 shows data from cases in which there was an extremely fragmented field: one in which the winner had less than 40% of the vote, whereas the runner-up was within a margin that would have triggered a runoff had the same votes occurred in an election under the double complement rule.

There are five cases of extreme fragmentation among our 30 plurality elections, or 16.7% of all cases. Additionally, there have been many other cases with winners under 45% and significant third-party support, as is implied by the standard deviations reported in Table 1. Extreme fragmentation, as defined here, constitutes a nontrivial share of all plurality presidential elections.
Table 2

*Extremely Fragmented Fields in Plurality Presidential Elections*

<table>
<thead>
<tr>
<th>Country and Date</th>
<th>Shares of Four Top Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Brazil 1955</td>
<td>35.6</td>
</tr>
<tr>
<td>Dominican Republic 1992</td>
<td>35.1</td>
</tr>
<tr>
<td>Philippines 1992</td>
<td>24</td>
</tr>
<tr>
<td>Venezuela 1963</td>
<td>32.8</td>
</tr>
<tr>
<td>Venezuela 1968</td>
<td>29.2</td>
</tr>
</tbody>
</table>

**LOSER'S SHARES**

Returning to the overall data, if we generalize Duverger’s law, we would expect the first loser to dominate the second loser. There may be some uncertainty about which of two candidates are in the running for one seat or which of three are in the running for the two runoff positions, but lower ranked candidates should have been also-rans. Cox (in press) has termed this the “M + 1” rule: The number of candidates winning significant votes should be as great as the magnitude, plus one. The one is the first loser; all other losers should trail far behind. If we think of the first round as a two-seat district—provided, of course, that no candidate wins a first-round majority—then we should expect three main candidates winning significant votes, plus some residual. 19 We can break down the value of effective number of candidates for plurality into one component for the number of serious candidates, 2, and one for the residual shares, 0.7. The residual reflects the vote shares of irrepressible minorities who are running for some other reason besides winning (Greenberg & Shepsle, 1987). Then for M = 2 (runoff) we would expect N = 3.7, approximately. This is almost exactly the actual result: 3.8.

Table 3 displays the ratios between the last winner and first loser and between the first and second losers for each country. “Last winner” is, of course, the one winning candidate in a plurality election. Under majority runoff, the term refers to the runner-up in the first round. Following the M + 1 rule, we should expect that, for both rules, the last winner-first loser ratio should be lower than the first loser-second loser ratio. Indeed it is. Both methods’ average last winner-first loser ratios are less than 1.5, and the standard deviations on both figures are low.

19. Perhaps the value of M should be seen as effectively 1.5 or some other intermediate figure, given that ultimately only one seat is won.
Table 3
Median Ratios of Last Winner to First Loser and First Loser to Second Loser, According to Different Electoral Methods (first round in case of majority system)

<table>
<thead>
<tr>
<th>Country</th>
<th>Last Winner to First Loser</th>
<th>First Loser to Second Loser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plurality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>1.53</td>
<td>1.57</td>
</tr>
<tr>
<td>Colombia</td>
<td>1.54</td>
<td>3.35</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>1.28</td>
<td>3.73</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>1.34</td>
<td>-</td>
</tr>
<tr>
<td>Philippines</td>
<td>1.23</td>
<td>2.54</td>
</tr>
<tr>
<td>Venezuela</td>
<td>1.33</td>
<td>7.20</td>
</tr>
<tr>
<td>Mean</td>
<td>1.46</td>
<td>3.97</td>
</tr>
<tr>
<td>(standard deviation)</td>
<td>(0.37)</td>
<td>(3.43)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Majority</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>1.04</td>
<td>1.43</td>
</tr>
<tr>
<td>Chile</td>
<td>1.91</td>
<td>-</td>
</tr>
<tr>
<td>Ecuador</td>
<td>1.24</td>
<td>1.87</td>
</tr>
<tr>
<td>France</td>
<td>1.43</td>
<td>3.00</td>
</tr>
<tr>
<td>Peru</td>
<td>1.68</td>
<td>2.20</td>
</tr>
<tr>
<td>Poland</td>
<td>1.28</td>
<td>1.97</td>
</tr>
<tr>
<td>Portugal</td>
<td>1.22</td>
<td>1.89</td>
</tr>
<tr>
<td>Mean</td>
<td>1.47</td>
<td>2.24</td>
</tr>
<tr>
<td>(standard deviation)</td>
<td>(0.41)</td>
<td>(1.00)</td>
</tr>
</tbody>
</table>

There is some difference between the two methods regarding the first loser-second loser ratio, which is almost 4 under plurality and just over 2 for majority runoff. Particularly in the case of plurality, however, the standard deviation is quite high. In part, this reflects the occurrence of some fragmented fields under plurality. On average, plurality rule provides greater clarity than majority runoff between the candidate who just misses winning (or qualifying for the runoff) and the next loser. However, many plurality elections result in significant third challengers, and such elections exhibit a smaller ratio between the first and second losers. The data in Table 3 are generally consistent with the M + 1 rule, but the lower ratio between first and second losers in majority-runoff elections suggests that the larger field of candidates associated with this rule (see Table 1)—and probably also the tendency of this rule to encourage candidates who enter mainly to bargain with the two runoff contenders between rounds—makes for somewhat less clarification of the field.

20. If we were to exclude the five elections identified in Table 2, the ratio would increase to 4.7, but the standard deviation would be barely changed: 3.5.
CHANGE IN SUPPORT FROM FIRST TO SECOND ROUND

Besides the shares of votes that are won by the various contenders and the effective number of candidates under plurality and majority runoff rules for electing presidents, another question that arises is what patterns of alliances occur within the electorate between rounds of a majority system. How often does the front-runner in the first round go on to lose the runoff? Does a commanding lead in the first round make the runoff a foregone conclusion?

When the initial leader goes on to lose, we might conclude that identifiability is quite low. This would be especially so if the gap between the second and third candidates is less than that between the first and second candidates. In such cases, voters who sought to vote for a candidate who could defeat an acknowledged front-runner in a runoff might find it difficult to determine which candidate was their best option. Indeed, the data in Table 3 show that the average ratio between the vote shares of the second and third candidates in the first round of majority-runoff elections (1.47) is close to that between the winner and first loser under plurality. Not shown in Table 3 is the ratio between the two winners—that is, the two who advance to the runoff. That ratio is greater: 1.64 (standard deviation, 0.61). Thus the real race in the first round tends to be for that second runoff position, with the front-runner substantially ahead. Even so, as we shall see, victory by the first-round runner-up is not rare, despite the substantial lead that is typical for the front-runner.

On the other hand, victory by the runner-up may indicate a beneficial feature of majority runoff: the ability of the opposition to a front-runner who is widely disliked to cooperate and engage in a common campaign to block the front-runner.21 If we find instead that front-runners with a wide margin are almost guaranteed victory, perhaps the 50% threshold is too high and the runoff entails unnecessary expense and uncertainty. To consider these questions, we have graphed the results of the 13 presidential runoffs from Table 1 (in four other cases, a runoff was unnecessary because the front-runner had scored a majority in the first round). The results are presented in Figure 2.

The figure shows us that, in 4 of the 13 runoffs (30.8%, or 23.5% of all our majority-runoff elections), the candidate who was eventually elected president had trailed in the first round. One first-round candidate even won over 45% of the vote yet failed to attract enough additional support to win the runoff. In Portugal in 1986, Diego Freitas do Amaral won 46.3%, or

21. Still the suspicion would remain that plurality rule might encourage the opposition not only to cooperate in electing whichever of its candidates happened to rank second in the first round when they must, by default, in order to win, but also to coordinate on a single candidate before the election.
almost the average share for front-runners in plurality elections. His nearest opponent had a first-round vote share, 25.4%, that is more typical of majority systems. This candidate, Mario Soares, nonetheless was elected president in the second round, 51.2% to 48.8%.

France in 1974 and 1981 shows some vagaries of majority runoff. The left forged a preelection coalition behind François Mitterrand and garnered 32.9% of the vote in the first round in 1974. The front-runner, Valery Giscard d'Estaing, had 43.3% in the first round. This election is one of the few cases in our sample of a majority-runoff field in which two contenders dominated
the first round so much as to resemble the typical plurality field (compare the country-by-country data in Table 1). The runoff proved superfluous, as Giscard d’Estaing won, although the margin was razor thin, 50.6% to 49.3%, thus nearly reversing the substantial plurality received in the first round by Giscard d’Estaing. With plurality, the Costa Rican forty-percent rule, or our double complement rule, Giscard d’Estaing would have won in one round, rewarding his significant preélection coalition-building success.

In the French presidential election of 1981, the French left went to the first round divided and Mitterrand won only 25.8%, second to the mere 28.8% won by the incumbent, Giscard d’Estaing. However, Mitterrand won the runoff, 51.8% to 48.2%. The lesson from this exposition is that majority runoff systems are difficult to predict. Sometimes a candidate successfully creates a near-majority coalition yet must face a runoff and possible defeat; sometimes a second-place finisher in a fragmented field goes on to win. Even when one candidate wins a majority, the rest of the field may be divided (see Table 1), as two or more candidates vie for the opportunity to be the one who makes the hoped-for runoff, with the hope of pulling off an upset such as that engineered by Soares.

**PROSPECTS FOR THE DOUBLE COMPLEMENT RULE**

By far the two most common methods that have been used for electing presidents have been plurality and majority runoff. Other possibilities, such as electoral colleges, congressional selection (in the event of no popular-vote majority), and the forty-percent rule, have been used far less often. The approval vote, warmly endorsed by some members of the political science profession, has found no takers among national political systems. In this article, we have proposed an alternative, the double complement rule, as a compromise between the two widely used alternatives, plurality and majority runoff. We now conclude by assessing this rule in the light of our theoretical and empirical investigation of the existing systems.

Plurality rule theoretically makes two-candidate races more likely, and therefore makes the choice of Condorcet winners more likely. However, elites who design new constitutional rules are increasingly unwilling to use plurality. There are at least two possible reasons for this dislike of plurality for electing presidents. The first, already mentioned, is fear of the so-called Allende syndrome. Although close multicandidate races in highly fragmented fields are not the norm—there are only 5 in our sample of 30 plurality presidential elections—the threat of such elections is certainly on the minds of political leaders crafting new democracies. One such presidency might be
a regime's last democratic presidency, if the victor is an extremist whose policies in office (or mere prospect of his taking office) leads others to take up arms or prompts a military coup. As noted in our review of theoretical literature, plurality rule among multiple candidacies is likely to generate noncentrist equilibria—that is, candidates are more likely to stake out minoritarian positions when a race is expected to be decided by considerably less than a majority.

A second, more practical, reason for regime designers being frequently unwilling to adopt plurality rule is that those who control the votes necessary to adopt a presidential election rule may not be confident of being able to survive the natural selection process that contributes ordinarily to two-candidate equilibrium under plurality rule. If several minority forces exist at the time of adoption of a rule, each may feel more secure with majority runoff, as that rule will allow at least three serious political forces to remain contenders for the presidency. The runoff provision thus serves the interests of nonmajority parties, which favor it for increasing their chance for victory as well as for the enhanced opportunity to make deals in exchange for delivering electoral support to one of the runoff contenders in the second round.

However, as we noted, the majority-runoff method has some flaws from the perspective of our criteria. We suggested that a presidential election method should encourage broadly endorsed winners and discourage the proliferation of candidates much beyond two. Plurality rule meets these criteria more reliably than does majority runoff. We found the average winner under plurality rule to win with just under 50% of the vote and the effective number of candidates to be 2.7. Both of these figures suggest an approximation of our criteria on average. However, our data also indicate that plurality rule leads in numerous cases to the election of presidents with less than a majority of the vote and in fields with significant third and lower-ranked candidates. These data are a reminder that candidates may enter a race for reasons other than to win (Greenberg & Shepsle, 1987). Such minor candidacies at times can have a major effect on the outcome of the race between the top two contenders. Thus it is desirable to have a system that admits the possibility of a runoff when the leading candidate does not meet the criterion of being widely endorsed, or when the number of candidates is considerably greater than two, yet does not encourage as dispersed a field of candidates as does majority runoff. For these reasons we have advanced the notion of a double complement rule.

We have referred to data that suggested that the Condorcet efficiency of majority runoff was greater than plurality, holding constant the number of candidates (Merrill, 1984). When the number of candidates is endogenized,
the Condorcet efficiency of plurality improves (Wright & Riker, 1989). How would the double complement rule perform? The rule is an exact arithmetic average of the plurality and majority criteria; therefore, it can be expected to have a Condorcet efficiency that is also between those of the more common methods. Where the rule would be most valuable is in controlling the effect of minor candidates that enter. If third candidates become less important under the double complement rule, then the Condorcet efficiency of the rule should be no worse than that of standard methods. As Wright and Riker (1989, p. 170) note, both standard systems control the number of “relevant” candidates. Majority runoff does so by “mechanically” eliminating all but the top two candidates. Plurality does so by deterring entry through preelection negotiations and calculations of support. Let us briefly speculate on candidate decisions to enter under the double complement rule.

We can assume that, other things being equal, the average effective number of candidates under the double complement rule would be an average of the figures for plurality and majority runoff. Such an average would be 3.4. It is misleading, however, to infer from this that three-candidate races are likely to be common. Consider the shares of the two front-running candidates. If we assume that they would be averages of the shares under plurality and majority, the results are 44.5% and 29.8%. These shares are well within the criterion for first-round victory. We could then expect that most elections would be decided without a runoff. Indeed, the conditions under which third candidates can force a runoff are more restricted under double complement than under majority, where it is sufficient merely to deprive the front-runner of more than 50%. Under double complement rule, additional candidates entering the race lead to a runoff only if one of the following conditions is met:

1. The race between the top two candidates is close anyway—in such a case, a runoff may be desirable to ensure that a very narrow victory cannot result unless the winner has an absolute majority.
2. Additional candidates draw more potential votes from the front-runner than from the runner-up, thereby narrowing the gap between them.

If some third candidate draws more from the front-runner, then the front-runner will win the runoff anyway, as would be the case under majority runoff. If, however, some third candidate draws more from the runner-up, he thereby increases the margin by which the front-runner eclipses his closest rival. Under the double complement rule, then, the chances of a first-round victory in such a case are increased. This could be a very beneficial consequence of the rule. Anticipation of the effect of fragmenting the opposition to an incumbent—an effect that makes the incumbent’s victory more rather
than less likely—could encourage coalescence of the opposition, much like plurality. Majority runoff in such situations provides much weaker incentives to coalescence—and even some incentive to fragment. Yet the double complement rule guards against the possibility, inherent under plurality rule, of a narrow plurality victory should the front-runner’s margin be reduced.

One can imagine objections to the rule on the grounds of complexity. Its definition of victory is not as immediately understandable as “the candidate with the most votes wins” or “it takes a majority in today’s election, with a runoff next month if no one gets a majority.” Still, the basic idea that a candidate needs either a majority or a significant margin over his closest rival—and that the required margin increases as the front-runner’s plurality decreases—is not really so complex. It should not be difficult to justify. Certainly the rule is less complex than the electoral systems used by many countries for their parliaments. It is arguably far less complex than the American procedure.

CONCLUSION

The double complement rule, unlike the others discussed herein, expresses the threshold that must be achieved for victory not only in terms of the front-runner’s share of votes but also in terms of the gap between that candidate’s share of the votes and the vote share of the runner-up. A further appealing feature of the rule is that it has an almost self-enforcing elegance. Although theoretically a candidate could win with 30% or a lower share of the vote, there is no reason to attach a minimum share (such as 35% or 40%) in addition to the provision of the double complement rule. If the largest share won by any competitor were to be 30% and, further, if that candidate were to have met the provision of the double complement rule, the runner-up could have no more than 10% of the vote. In such an imaginary field of competitors, there would have to be, in addition to the leader, at least seven candidates,

22. Shugart proposed the double complement rule in a briefing paper prepared for an adviser to the president of Argentina in late 1993. As a result, the two main Argentine parties included a modified version of the rule in an agreement on constitutional reform, scheduled for ratification in mid-1994. It will allow an outright first-round win if the front-runner has at least 45% of the vote. It will require a runoff if the front-runner has less than 40%. If the front-runner falls between these two boundary conditions, he or she will require a 10% margin over the runner-up to avoid a runoff. This example serves to make two points: (a) At least in Argentina, the double complement rule was not judged to be too complex, as the agreed-upon rule is more complex and (b) the concept of a minimum margin, rather than a minimum share of votes, to avoid a runoff can have appeal as the basis for electoral reform.
each with no more than 10%. Such a field is highly unlikely, but were it to occur, the candidate who had won the 30% would almost appear to have a mandate (and would be a likely second-round winner anyway).

By requiring a minimum winning margin, rather than a minimum winning share, the double complement rule guards against the greatest dangers of other methods: narrowly endorsed winners. No rule is a panacea, but we urge theorists and regime designers—and their advisers—to consider the possible merits of our proposal.

REFERENCES


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