The Two-party System and Duverger's Law: An Essay on the History of Political Science

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Science involves the accumulation of knowledge, which means not only the formulation of new sentences about discoveries but also the reformulation of empirically falsified or theoretically discredited old sentences. Science has therefore a history that is mainly a chronicle and interpretation of a series of reformulations. It is often asserted that political science has no history. Although this assertion is perhaps motivated by a desire to identify politics with belles lettres, it may also have a reasonable foundation, in that political institutions may change faster than knowledge can be accumulated. To investigate whether propositions about evanescent institutions can be scientifically falsified and reformulated, I examine in this essay the history of the recent and not wholly accepted revisions of the propositions collectively called Duverger's law: that the plurality rule for selecting the winner of elections favors the two-party system. The body of the essay presents the discovery, revision, testing, and reformulation of sentences in this series in order to demonstrate that in at least one instance in political science, knowledge has been accumulated and a history exists.

One defining characteristic of science as distinct from belles lettres, criticism, and philosophic speculation is the accumulation of knowledge in the form of more or less verifiable propositions about the natural world. In the conventional view of science, propositions are verified deductively when they are inferred indisputably from an axiom system and verified empirically when they have survived repeated attempts at falsification (Popper 1963). In practice, however, scientific propositions are typically neither so theoretically indisputable nor so empirically unfalsifiable as the conventional view suggests. Rather, most reported tests of propositions involve either discrediting a theory or successful falsification. The triumphant scientist then replaces the proposition he or she has falsified with a revised one, which passes the test that the initial proposition failed. When I speak of a more or less verified proposition, therefore, I mean the one that is the current end point of a series of revisions and that is, at least provisionally, accepted by the relevant portion of the scientific community (Riker 1977). By the phrase "accumulation of knowledge" we mean not only that the corpus of propositions is growing, but also that each one of the series of revisions is more general or more precise than its predecessor.

In this view, every branch of science has a history which is a chronicle of the marginal revisions of propositions leading up to the currently accepted ones. This is what Thomas Kuhn (1970) calls "normal science." Political science, which is my concern in this essay, has, however, often been said to have no history, which is of course merely a way of saying that it contains no accumulation of knowledge and that it is therefore not a branch of science. Many political scientists have been persuaded to believe this assertion, so that in despair they are inclined to abandon the search for scientific generalizations. (This despair is, I believe, the root of the movement toward phenomenology and hermeneutics and other efforts to turn political science into a belles-lettristic study.)

The rationale for the assertion that political science lacks a history is that political institutions, the main topic of generalizations in the field, are themselves so evanescent that the subject and predicate classes of scientific propositions change more swiftly than the propositions can be perfected. It is indeed true that in comparison with the physical and biological sciences, which deal with the unchanging properties of matter, and even in comparison with psychological sciences, which deal with the relatively more plastic properties of the human psyche, the habits and institutions studied in the social sciences are swiftly changing. But generalizations are neither so hard to come by nor so hard to perfect as this criticism

This history was written largely at the instigation of students in my course on the scope of political science, where I have used this history to illustrate what I believe Thomas Kuhn (1970) meant by "normal science." I have, of course, benefitted greatly from their comments as well as from the comments of my colleague, Harold Stanley. This paper was presented in an earlier form to the American Association for the Advancement of Science, Washington, D.C., 1982, on a panel assembled by Steven Brams and to the International Political Science Association, Rio de Janeiro, 1982, on a panel assembled by David Apter.

implies. Many of the propositions of social science involve an interplay between permanent psychological characteristics of humans and institutional structures. This feature implies some degree of permanence for the subject and predicate classes of generalizations in social science. For example, the law of demand in economics—that, with appropriate qualifications, demand curves do not slope upward—is mainly psychological in character and is indeed a better formulated and more thoroughly verified law of behavior than any to be found in the science of psychology itself. Even when the psychological component is smaller and the institutional component is larger than in the law of demand, as is typical in political science, lasting generalization is still possible because many institutions (e.g., voting and decisions by forming coalitions) are, when abstractly described, at least as old as written history.

It should be the case, therefore, that political science, like any other science, has a history, even if it has not heretofore been chronicled. My intention in this essay is to demonstrate that a history does exist, and my vehicle is a particular series of reformulations called Duverger's law. I am not undertaking this demonstration out of chauvinism, merely to claim for students of politics the name and privilege of scientists, but rather to show that the accumulation of knowledge is possible even when dealing with such fragile and transitory phenomena as political institutions (Riker 1977). This is also why I deal with Duverger's law, a not very well accepted proposition dealing with institutions of only the last two hundred years. If it is demonstrated that knowledge has accumulated, even in this not yet satisfactorily formulated "law" about an ephemeral institution, then I will have demonstrated at least the possibility of the accumulation of knowledge about politics.

I

Duverger's law proposes that "the simple-majority single-ballot system favors the two-party system." Duverger described this sentence by saying: "Of all the hypotheses . . . in this book, this approaches most nearly perhaps to a true sociological law" (Duverger 1963, p. 217). Related to this sentence is another, which Duverger did not elevate to the status of law: "the simple-majority system with second ballot and proportional representation favors multi-partyism" (Duverger 1963, p. 239). I will refer to the first proposition as the law and to the second proposition as the hypothesis. These propositions distinguish among three kinds of electoral systems, which, although far from a complete list of the systems in current use, are the only ones used widely enough to admit the observation of their relationship with the number of political parties:

(1) *Plurality voting*—rather misleadingly called the simple-majority, single-ballot system by Duverger—in which the unique winner is the candidate with the most votes. With two or fewer candidates, the winner has a simple majority of the votes cast; with three or more candidates, the winner may have only a plurality.

(2) *Run-off majority voting* among three or more candidates with two ballots, in which at the first ballot the winners are the two candidates with the largest and second largest number of votes, and, at the second ballot between exactly these two, the winner is the candidate with a simple majority. Coupled with the two-ballot system are various alternative vote methods in which counting, rather than voting, occurs twice, using the same definition of winning as in the two-ballot system.

(3) *Proportional representation,* in which the winners are those candidates who obtain some quota of votes, usually $v/(s+1)$ or $(v/(s+1))+1$, where v is the number of votes cast and s is the number of winners to be selected. Since $s>1$, some winners must have less than a plurality.

Although it is easy to clarify Duverger's terminology, it is not at all easy to straighten out the ambiguity in his statement of the relationship between electoral systems and the number of parties. Is plurality voting a necessary condition of the two-party system? or a sufficient condition? or both? or neither? The claim that the relation is "a sociological law" suggests causality or a necessary and sufficient condition, whereas the use of "favors" suggests the relationship is at best probabilistic, not deterministic. I suspect the formulation was deliberately ambiguous because the author was not himself entirely certain of what he wanted to claim. Just what the claim *ought* to be is not immediately obvious, so I will settle the question as I survey the present state of knowledge about Duverger's law.

II

Duverger's sentences appeared in print in 1951, but as is usually the case with scientific laws, similar propositions had already been widely discussed and reformulated with some increasing degree of sophistication.[1] Indeed, related propositions appeared in popular discussion almost as soon as methods other than plurality voting were

[1]It is customary to call the law by Duverger's name, not because he had much to do with developing it but rather because he was the first to dare to claim it was a law. The memorial honors, therefore, a trait of character as much as a scientific breakthrough.

proposed or adopted for legislative elections in which large numbers of people were expected to vote. By "large numbers" I mean an electorate of approximately 5 percent of the population, which in an era of primitive medicine and poor diet was perhaps 25 to 33 percent of the adult males. Such electorates were constituted in America in the eighteenth century and in Western Europe in the late nineteenth century. Once these large electorates existed, there also existed a motive for politicians to attempt to devise appropriate methods to manipulate outcomes in elections, and hence methods other than plurality voting were discussed and adopted. Naturally proponents and opponents of alternative methods also thought deeply about the consequences of alternative methods and thus began to discuss propositions related to Duverger's law.

These propositions were to be expected, and it is quite likely that there is indeed some demonstrable relation between electoral forms and the structure of the party system. Whatever their other ideological or programmatic functions, political parties serve to organize elections. (For a recent elaboration, see Katz 1980.) Politicians and candidates with some common interests—perhaps only a common desire to win or perhaps also a common ideology or a common identification with a group—appeal to voters under a common banner, and thereby generate political parties. Since one motive for the common appeal is the desire to win, it is not surprising that the constitutional definitions of winning have an effect on the parties thereby generated. If winning is defined as the most votes, that is, as a plurality, then one might reasonably expect a two-party system owing to the necessity under this definition of maximizing votes. Since the best way, in the long run, to get the most votes is to get more than half, each of two parties might be expected to structure a coalition in the hope, *before the election,* of getting a majority. Alternatively, if winning is defined as more than half the votes at a runoff election, candidates do not necessarily have to maximize votes at the initial election—the second most votes initially may be enough to win in the end. And if winning is defined as the achievement of some number of votes less than half (as is necessarily the case under proportional representation), then the necessity of maximizing disappears entirely. In short, when the definition of winning forces candidates to maximize votes in order to win (as in plurality systems), they have strong motives to create a two-party system; but when the definition of winning does not require them to maximize votes (as in runoff and proportional systems), then this motive for two parties is absent.

The twin conditions of a large electorate and proposals for methods other than plurality voting were met in Europe in the latter half of the nineteenth century, but general public discussion on the subject did not appear until the 1850s. In 1856 Denmark, which then had a small electorate, adopted a form of proportional representation for over half the members of its unicameral legislature, and at about the same time, Lord John Russell's unsuccessful reform bills provided for what the British called "three-cornered" constituencies, a rudimentary form of representation of minorities in which each voter has two votes in a three-member constituency. In 1859 Thomas Hare in *The Election of Representatives* set forth an elaborate method of proportional representation, the single transferable vote, and in 1861 John Stuart Mill popularized it in *Considerations on Representative Government,* which contained a philosophical justification of Hare's method. Mill believed Parliament should contain "not just the two great parties alone," but representatives of "every minority . . . consisting of a sufficiently large number," which number he defined precisely as the number of voters divided by the number of seats (Mill 1910, p. 263). Mill argued that the Hare method would bring about this result, so from the very beginning of the discussion, there was some dim appreciation of Duverger's hypothesis, although not necessarily of Duverger's law. The appreciation was quite dim, however, because in the parliamentary debate on cumulative voting in 1867, Mill expressed himself in a way that clearly indicated that he thought proportional representation would not upset the two great parties:

> The right honorable gentleman said one thing that perfectly amazed me. He said that . . . it was wrong that the representation of any community should represent it only in a single aspect, should represent only one interest—only its Tory or Liberal opinion; and he added that, at present, this was not the case, but that such a state of things would be produced by the adoption of this proposal. I apprehend that then, even more than now, each party would desire to be represented . . . by those men who would be most acceptable to the general body of the constituencies fully as much, if not more, than they do now (Hansard 1867, 3rd series, vol. 188, pp. 1103-04).

Clearly Mill expected the proposed system would produce Tory free traders and Tory corn law supporters without upsetting the two-party system.[2]

About the same degree of appreciation was

[2]Leys (1959) has said that Mill understood Duverger's law, although what Leys and I have discussed relates to the effect of proportional representation (Duverger's hypothesis), not to the effect of plurality voting (Duverger's law). In any event, Leys's remark is highly anachronistic. To say that Mill understood Duverger's

shared by the opponents of change. Disraeli, for example, when speaking in the same debate against cumulative voting (which was, however, adopted in the form of the "limited vote" or two votes per voter in three-member constituencies) said:

> I have always been of the opinion with respect to this cumulative voting and other schemes having for their object to represent minorities, that they are admirable schemes for bringing crochetty men into this House—an inconvenience which we have hitherto avoided, although it appears that we now have some few exceptions to the general state of things; [N.B.: John Stuart Mill then sat on the other side of the House] but I do not think we ought to legislate to increase the number of specimens (Hansard 1867, 3rd series, vol. 188, p. 1112).

Quite recently Duff Spafford sent me what he and I believe is the earliest known explicit statement of the law. Henry Droop, an English barrister, advocate of proportional representation and inventor of the Droop quota, wrote in 1869 about plurality voting:

> Each elector has practically only a choice between two candidates or sets of candidates. As success depends upon obtaining a majority of the aggregate votes of all the electors, an election is usually reduced to a contest between the two most popular candidates or sets of candidates. Even if other candidates go to the poll, the electors usually find out that their votes will be thrown away, unless given in favour of one or other of the parties between whom the election really lies.

Droop was apparently influenced by an observation in an address by Ernest Naville, president of the Geneva Association for Reform, which Droop translated as follows: "When the majority alone [i.e., Naville meant "by the plurality rule"] chooses the representatives of all, the electors inevitably group themselves into two camps because, to arrive at representation, it is necessary to obtain the majority." Naville did not apparently believe that this force was sufficient for the two-party system, and Droop's position in 1869 is ambiguous. But by 1881 he was prepared to argue "these phenomena [i.e., two-party systems] I cannot explain by any theory of a natural division between opposing tendencies of thought, and the only explanation which seems to me to account for them is that the two opposing parties into which we find politicians divided in each of these countries [United Kingdom, United States, etc.] *have been formed and are kept together by majority voting*" [emphasis added; Droop means, of course, plurality voting].

This is the earliest explicit statement of Duverger's law that I have seen. By 1901 it was a commonplace. In the controversy over proportional representation for the new Australian constitution, in their preface to *Proportional Representation Applied to Party Government: A New Electoral System,* Ashworth and Ashworth (1901, pp. vii-viii) set up their problem thus:

> The claim that every section of the people is entitled to representation appears . . . so just that it seems intolerable that a method should have been used . . . which excludes the minority. . . . But in view of the adage that it is the excellence of old institutions which preserves them, it is surely a rash conclusion that the present method of election has no compensating merit. We believe there is such a merit—namely, that *the present method of election has developed the party system* [emphasis in original; the party system referred to is, of course, dual]. Once this truth is grasped, it is quite evident that the Hare system would be absolutely destructive to party government. . . . The object of this book is to suggest a reform, which possesses the advantages of both methods and the disadvantages of neither.

Needless to say, the Ashworths failed to achieve this goal, but they do deserve credit for their clear enunciation of both Duverger's law and Duverger's hypothesis.

III

In the previous section I reported a gradual development culminating in a clear and unambiguous statement of both Duverger's propositions twenty years after Hare and seventy years before Duverger. In the succeeding half century scholarly support became quite general, so that it was indeed reasonable for Duverger to call one of them a law. The general theme of this development is that of an initial skepticism followed by increasing acquiescence.

A. Lawrence Lowell, whose books on comparative politics dominated the field at the turn of the century, thought that the two-party system was essential for effective parliamentary government. He attributed this system in Great Britain to the historical experience of the English people, but he also thought that the absence of it in France was owing to the majority system and the second ballot (Lowell 1896). Thus, in effect, he accepted Duverger's hypothesis but not Duverger's law. Other prominent scholars of that period were less clear. Ostrogorski, for example, was so eager to do away with political parties by his own pet

law is about like saying that the child with burnt fingers understands the chemical principles of combustion.

reforms that he never quite diagnosed the causes of structural features of parties (Ostrogorski 1908, vol. 2, p. 705). Practical publicists, excited by the controversy over proportional representation, which was considered or adopted in most European countries between 1900 and 1925, tended to favor proportional representation if they belonged to parties without a majority and to oppose it if they belonged to parties with the majority or close to it. Implicitly, therefore, they behaved as if they agreed with Duverger's law. One author who explicitly stated this belief was J. Ramsay MacDonald, later a Labour prime minister, who wrote frequently against proportional representation and clearly explained the forces involved in Duverger's law (MacDonald 1909, p. 137). As a socialist he thought the plurality system was a good discipline for new socialist parties like the Labour party, and furthermore, when his party won, he wanted it to win the whole thing—His Majesty's Government—not just a chance at a coalition. On the other hand, most minority publicists were not so frank; when they favored proportional representation, they typically denied Duverger's hypothesis (on the effect of proportional representation) and pointed out that countries without proportional representation often did not have two-party systems. (For an example, I quote J. Fischer Williams, "In France, Italy, and Germany, there are more parties than with us [Great Britain]. . . . But this is not the result of proportional representation" (Williams 1918, p. 68). Conversely, those opposed to proportional representation were not quite sure. The authors of the *Report* of the Royal Commission on Electoral Systems remarked in puzzlement: "It is asserted by some that small parties would spring up like mushrooms when the repressive influence of the majority [Note: they meant plurality] method was removed; by others that the two-party system would survive any change of mechanism whatever" (Royal Commission on Electoral Systems 1918, p. 31).

Two strands of intellectual development removed the doubts. One was the spread of dissatisfaction in the 1930s with proportional representation; the other was an increased scholarly examination of the origins of the two-party system that characterized the successful American polity. Since the dissatisfaction with proportional representation relates to Duverger's hypothesis (that proportional representation caused multiple parties, the lesser of Duverger's two propositions), I will skip over most of that debate, which was especially aimed at identifying the reasons for the initial successes of the German National Socialist Party. An excellent example of the effect of that experience is observable in the two editions of a Fabian Society tract by Herman Finer, a prominent student of comparative politics. In the initial edition (1924), he criticized proportional representation in much the same way as had MacDonald fifteen years earlier, that is, as a system that confused responsibility. In the second edition (1935), however, he added a postscript in which he blamed proportional representation in Italy and Germany for increasing the number of political parties. Then he attributed the weakness of executives and the instability of governments to the multiplicity of parties, and he explained the rise of Mussolini and Hitler as a reaction: "people become so distracted by fumbling governments, that they will acquiesce in any sort of dictatorship. . ." (Finer 1935, p. 16). Hermens's *Democracy or Anarchy: A Study of Proportional Representation* (1941) constitutes the most elaborate indictment of this electoral system for its encouragement of National Socialism, and although not published until 1941, its evidence had been widely circulated for several years before that. Although many now recognize that Finer and Hermens had made too facile an attribution and inference, still they were frequently quoted, and the collection of evidence on this subject by Hermens and others (e.g., Mellen 1943) had, I believe, a significant persuasive effect in support of Duverger's hypothesis.

The scholarly study of the two-party system tended to increase the evidence for and scholarly certainty about Duverger's law. Arthur Holcombe, a prominent American political scientist in the first half of the century, affirmed Duverger's law as early as 1910: "the tendency under the system of plurality elections toward the establishment of the two-party system is . . . almost irresistible" (Holcombe 1910). Although in a popular textbook published as late as 1919 W. B. Monro attributed the two-party system to the "practical capacity of the Anglo-Saxon race" (Monro 1919, p. 329), and although authors of other popular textbooks of the next decade, e.g., Charles Merriam, E. M. Sait, and Frederic Ogg, avoided the subject entirely, by 1933 the notion was well established that plurality voting for executives generated the American two-party system. Arthur MacMahon argued: ". . . centrifugal tendencies [i.e., for many factions] have been offset by the fact that in the face of the necessity of choosing a single candidate, the alternatives open to electorates have been sharply narrowed" (MacMahon 1933). This example of presidential and gubernatorial elections proved extraordinarily convincing, and within a decade the more general form of Duverger's law was enshrined in popular American textbooks. Thus Carl Friedrich observed that the "single member district with plurality elections . . . forces the electorate to make up its mind between two clear-cut alterna-

tives" (Friedrich 1937, p. 290), and E. E. Schattschneider wrote that the "single-member-district-system-plus-plurality-elections . . . discriminates *moderately* [emphasis in original] against the second party, but against the third, fourth, and fifth parties the force of this tendency is multiplied to the point of extinguishing their chances of winning seats altogether," a force that thereby guarantees exactly two parties (Schattschneider 1942, p. 75). V. O. Key, Jr. (1949) even applied the idea of the law to the superficially one-party system of the states of the old Confederacy, observing that where primary elections in the one main party were conducted with the plurality rule, there was bifactionalism, and where conducted with the runoff majority rule, there was multifactionalism. However, Key was uncertain about the effect because he thought also that the main force for bifactionalism probably was the existence of a serious Republican opposition.

Scholarly acceptance of both Duverger's law and Duverger's hypothesis was therefore quite general by the time he formulated them. Duverger's own contribution was twofold: First, he distinguished sharply between the law and the hypothesis, which previously had often been mistakenly interpreted as duals of each other. (Since plurality and proportional systems are only two out of many, the absence of one does imply the presence of the other.) Second, he collected and systematically arranged a large amount of historical evidence in support of both sentences so that their full significance was apparent.

IV

Of course, acceptance and utterance do not make statements true. The history of these sentences in the next thirty years consists mainly in collecting evidence for and against their truth and revising their formulation and adjusting the rational choice model within which they fit. Since it is just exactly this activity that constitutes the daily life of science, the fact of a substantial amount of testing out and reformulating of Duverger's hypothesis and law is evidence of the accumulation of knowledge I am trying to describe.

I start with Duverger's hypothesis (that proportional representation and majority systems favor multiparty systems). Clearly Duverger himself was uneasy about the hypothesis, did not call it a law, and asserted it only as a probabilistic association, not a deterministic one.

The earliest attack on the hypothesis was, however, entirely misdirected. Grumm asserted that the causal direction in the hypothesis was reversed, that proportional representation did not cause multiparty systems but rather that multiparty systems caused proportional representation (Grumm 1958). His evidence was that five continental governments that adopted proportional representation had more than two parties when they did so. Presumably they acted to preserve the balance among existing parties. But at the time of adoption, all those governments had either majority systems (i.e., second ballot) or a history of earlier proportional representation or no experience with democracy. Since Duverger coupled the majority system with proportional representation as a cause of multiple parties (as, indeed, had Lowell (1896) and Holcombe (1910)), it is entirely to be expected from the hypothesis that multiparty systems occur in the five countries at the time they actually occurred, that is, before proportional representation. So Grumm's evidence supports rather than refutes the hypothesis.

(Incidentally, the few European countries that changed from plurality to proportional representation also changed from a two-party system to a multiple-party system (Polyzoides 1927).)

Entirely apart from Grumm's error, however, there are numerous counterexamples to Duverger's hypothesis. For a long time Australia has had the alternative vote, which can be interpreted either as a rudimentary form of the Hare system or a version of the majority system. Its parties have indeed increased from two to three, and there the number has stabilized. If the hypothesis were true, however, the number should continue to increase. It has not, and indeed the third party is effectively an appendage of one of the two main parties. Austria has maintained both proportional representation and a two-party system since the end of the Second World War. There is no apparent feature of the electoral system that accounts for this fact, so it seems a true counterexample. Despite partial proportional representation, since 1945 Germany has developed a system with two major parties and a third small party allied continually with the same major party. This is not a good counterexample, however, because the proportional system also has a plurality feature intended by its authors to minimize the number of parties in excess of two. Finally, Ireland provides a devastating counterexample. Despite the use of the Hare system, its parties have decreased sharply in number since a high point in 1927, when there were seven parties plus fourteen independents. In 1969 there were three parties, one of them very small and one independent. This result was substantially reproduced in 1973 and in 1977, when one party obtained an absolute majority of the votes. Not unreasonably, one student of Irish elections who initially seemed to accept Duverger's hypothesis (O'Leary 1961), has now specifically rejected it (O'Leary 1979, pp. 112-13). Katz (1980, p. 40) tried to discount the

force of this counterexample by calling the Hare system a modified form of the plurality rule (because voting is for individual candidates, not parties), and by predicting then (p. 61), from Duverger's hypothesis, that the number of parties in Ireland should be more than the number in Britain (with the unmodified plurality rule) and fewer than the number in Italy (with the party-list system of proportional representation). This is, however, too easy a way out. The Hare system is indubitably proportional, and it lacks entirely the main feature of the plurality rule, namely the force encouraging parties to maximize votes.

Since there appears to be nothing in common among these four counterexamples, it seems impossible to save the hypothesis by modifying it, and that is the lesson to be learned from Rae's more general analysis of the cases (Rae 1971). He has shown very neatly that for the development of a successful new party, proportional representation is neither a necessary condition (see, for example, the British Labour party in a plurality system) nor a sufficient condition (see the absence of successful third parties in Austria). Instead, Rae offered a list of seven variables, one of which is the presence of proportional representation, that may be associated with successful new parties (pp. 151-58). Altogether Rae made an extremely strong case that the hypothesis, at least as it related to proportional representation, cannot be more than a probabilistic association.

The empirical evidence is not so conclusive in the case of the two-ballot majority. No one, aside from Duverger, has devoted much attention to party systems associated with this rule. Most continental governments used it before they adopted proportional representation, and, as has already been remarked, Lowell (1896) and later some advocates of proportional representation (e.g., Williams 1918) believed that the multiparty system developed as politicians' rational response to this rule. Canon (1978) conducted the most impressive test of the relationship. He was inspired mainly by Key's (1949) uncertainty about the application of the hypothesis to the multifactionalism in southern states. Canon used as data the presence of bifactionalism from 1932 to 1977 in the Democratic gubernatorial primaries in sixteen southern and border states. Ten of these states use the runoff primary with a majority required for nomination at either the first or second ballot. The other six use the plurality method with just one primary. Although factionalism is not easy to measure, a reasonable index of it showed in fairly close approximation of Duverger's hypothesis that factionalism in all but one of the plurality primary states was lower—often much lower—than in all the runoff primary states. For the one anomaly, West Virginia, the index was only slightly higher. Furthermore, the percentage of the primary vote for the top candidate (and for the top two candidates) was much greater in the plurality states than in the runoff states, which is exactly what one would expect if the two-ballot system encourages multifactionalism. Still, longitudinal averages cover up significant deviations. Canon also noted that Alabama, a runoff state, has in the last decade developed something close to bifactionalism, whereas West Virginia, a plurality state, still had fairly evident multifactionalism in the earlier part of this period. Since these two exceptions are not fully explained at present, the case is strengthened that Duverger's hypothesis is no more than a probabilistic association.

This is, I believe, what a theoretical interpretation, in terms of rational choices by politicians, would suggest. The rational choice theory, standing implicitly behind the hypothesis, is that proportional representation and the second ballot runoff both offer politicians an incentive for the formation of new parties and do not give them any disincentive. The incentive is that, given particular configurations of potential coalitions, these systems sometimes permit new parties (and heretofore-excluded politicians) to get a bit of political influence with relatively few votes. That is, in these systems a new party does not have to get the most votes to win, merely some indefinite number less than the most. Under proportional representation, the candidate or list with the second most votes can always win seats and sometimes so can candidates with the third or fourth most votes. Indeed the purpose of the system is to encourage this result. In the runoff majority system a candidate who initially has the second most votes can ultimately win, provided the supporters of eliminated candidates vote for her or him at the second ballot. Hence, if a group of politicians can see a chance to come in second or third, it is often worthwhile to form a new party. In the plurality system, on the other hand, this positive incentive is turned into a disincentive because it is rare for the prospective builders of a new party to see a chance to come in first past the post. This system, then, constitutes a real disincentive because the leaders of the new party are likely to be regarded as politically irrelevant. This disincentive is absent from proportional representation and runoff systems, however, because even leaders of failed parties are welcome in expanded coalitions of continuing parties. Neither feature of this incentive system is strong enough to permit one to say for certain that these electoral systems favor multiple parties. The incentive is weak because it operates only when people want to form new parties for other reasons. However, there are surely many configurations of potential coalitions, configurations lasting

through many elections, that do not render it likely that new parties will come in second (probably the case in Austria) or even third (probably the case in Ireland). Similarly the absence of a disincentive for new parties within the system of proportional representation itself is not very important. Although the existence of proportional representation prohibits the direct use of the disincentive inherent in plurality voting, there are other kinds of efficacious disincentives that can be combined with proportional representation, as has been done in Germany and perhaps Austria. So the incentive is not sufficient and the disincentive is not necessary. Hence the hypothesis cannot be deterministically valid, although doubtless there is a fairly strong probabilistic association between proportional representation or runoff elections on one hand and the multiparty system on the other.

V

We can therefore abandon Duverger's hypothesis in its deterministic form (although it is still useful for practical life) and proceed to the more interesting question of Duverger's law, relating plurality elections and two-party systems. The difficulties with the law are less formidable. There are indeed counterexamples, but not, I believe, definitive ones, so that the law may possibly survive with appropriate revisions. If we can also fit it to an adequate theory, it may even be persuasive.

The two most pressing counterexamples to Duverger's law are in Canada and India, where despite plurality elections there are distinctly more than two parties. In Rae's study of 121 elections in 20 countries, 30 elections were conducted under plurality rules and seven of these—all in Canada —resulted in more than 10 percent of the votes for a third party. Rae attributed the Canadian deviation to the fact that, geographically, local parties survive as the main parties in some provinces while they are third parties nationally. Doubtless this situation derives from the extreme decentralization of Canadian government, wherein the chance of provincial control is of itself enough to motivate political action.

On the basis of the Canadian exception, Rae reformulated Duverger's law from "the simple-majority, single-ballot system favors the two-party system" to "plurality formulae are always associated with two-party competition except where strong local minority parties exist" (Rae 1971, p. 95). Rae commented that his revision produced a "much less dramatic proposition" (Rae 1971, p. 96), although when he came to write about the long-range effects of plurality formulas, he concluded by reaffirming Duverger's proposition. After noting the Canadian exception, Rae said, "insofar as the electoral law exerts a controlling pressure, the single-member district is likely to press the system toward two-party competition" (Rae 1971, p. 143), which is almost exactly Duverger's sentence, with the verb structure "likely to press the system toward" rather than "favors."

The reason Rae fell into this logical trap of both denying and then affirming Duverger's law is that like Duverger himself, he could not decide whether the law was deterministic or probabilistic. So Rae's restatement of it is deterministic, but his actual use of it is probabilistic. I suspect the reason for his ambivalence is his belief that the revised deterministic law was less dramatic and less useful, but attaching conditions to a law is, to my mind, unexceptionable. The elementary form of the law of demand is "demand curves do not slope positively," but to state this law accurately, one must say: "holding other prices, income, and tastes constant, demand curves do not slope positively," perhaps less dramatic—if drama is what one wants from science—but certainly more useful because it is more accurate. Similarly Rae's revision involves greater accuracy and greater utility.

The Indian counterexample is more difficult to deal with. India began plurality elections about the same time Duverger formulated his law, and only once has something approaching a two-party election been held. Congress, the party of Nehru and his daughter, Indira Gandhi, has been dominant during most of the thirty years since 1951, even though Congress candidates have never obtained as much as 50 percent of the vote. Because of the large number of candidates in many constituencies under this genuine multiparty system, Congress has usually translated an electoral minority into a majority of legislative seats. It is an interesting puzzle why the numerous minor parties do not disappear or consolidate; they have decreased in number since 1951, but there are still at least four or five significant parties. One wonders why it is taking so long for Duverger's law to work.

Two explanations have been offered for the delay. Weiner (1957, pp. 223, 262-64) argued that the minor parties were social groups providing emotional satisfaction to activists, entirely apart from the goal of winning elections. Since activists presumably maximize the pleasures of membership rather than the rewards of office, in Weiner's theory it is not to be expected that they reduce the number of political parties other than accidentally. Although I think that Weiner was on the right track in looking at the motivation of politicians rather than of voters, it was a serious mistake to lump all politicians together. Certainly the

leaders of the main parties besides Congress behave as if they are intensely motivated by the chance of office. To attribute to them a group loyalty that prevents them from doing what is necessary to win is to describe them as truly irrational. I suspect, however, that they are just as rational as western politicians, and so I reject Weiner's explanation, except as it applies to very small and politically irrelevant parties.

On another occasion (Riker 1976), I have offered a different kind of explanation. I believe that because Congress, the largest party in India, includes the median of the voters arranged on an ideological spectrum, Congress has most of the time been the second choice of many voters on both its right and its left. Hence, the party has probably been a Condorcet winner most of the time, although it has never obtained an absolute majority.[3] Congress has been clearly defeated only when the opposition has been so consumed with intense popular hatred of Mrs. Gandhi or with intense elite lust for ministerial office that politicians and voters alike could put aside their ideological tastes and act as if they ordered their preferences with Congress at the bottom of the list. When they have done so, they have defeated Congress in both state and national elections. Then, typically, coalitions of each end against the middle (like Janata in 1977-79) have dissolved and Congress has won again, presumably as the Condorcet choice. With these thoughts in mind, I constructed a model in which, with rational participants who wished to maximize political satisfaction, i.e., for office and ideological tastes, a multiparty equilibrium was consistent with plurality elections. The essence of this model was that some party in the multiparty system was regularly a Condorcet winner. Utilizing this feature, it is possible to revise Duverger's law further, incorporating Rae's revision, to account for both of the apparent exceptions, Canada and India.

In my revision the law reads:

> Plurality election rules bring about and maintain two-party competition except in countries where (1) third parties nationally are continually one of two parties locally, and (2) one party among several is almost always the Condorcet winner in elections.

Note that this formulation is deterministic—an attempt to avoid the ambiguity of Duverger and Rae. The law asserts that, with the exceptions noted, the plurality rule is a sufficient condition for a two-party system. It is not, however, an assertion of a causal relation, inasmuch as the plurality rule clearly is not a necessary condition (vide, Austria).

VI

The revised law is entirely consistent with our knowledge of the empirical world, accounting both for the long history of two-party competition in Anglo-American countries with plurality voting and for the apparent exceptions like Social Credit in Canada, the Irish in Britain in the nineteenth century, the multiparty grouping around Congress in India, and the few third parties in the United States that have survived more than one election. But the law itself is entirely empirical, the record of observations. It explains nothing and tells us nothing about why it works. It is the task of science to explain the law by incorporating it as a necessary inference inside a theory. Thus it is appropriate to look at the theory that subsumes the law.

Duverger offered two theoretical explanations for why the plurality rule destroys third parties: (1) a "mechanical effect" of underrepresenting losing parties and (2) a "psychological factor" in that voters do not want to waste their votes on losers. Both these reasons derive (implicitly) from a view of both politicians and voters as rational actors, i.e., expected utility maximizers. The mechanical effect gives politicians an incentive to abandon parties that win even less than they might be expected to; the psychological factor gives voters, observing wasted votes and even votes that, being wasted, indirectly contribute to the victory of least-liked parties, an incentive to vote for their second choices. If both these propositions are correct, they can be combined, as they were by Duverger, into a theoretical explanation of the operation of the law.

The existence of the mechanical effect was disputed by Grumm on the basis of a modest bit of evidence (Grumm 1958). But Rae showed definitively by an empirical comparison that plurality rules gave a greater relative advantage to large parties over small ones than did proportional representation rules (Rae 1971, pp. 88-92). Sprague (1980) carried Rae's analysis quite a bit further by calculating precisely how much plurality systems are biased against third parties. An unbiased system is, of course, one in which a party

[3] A Condorcet winner is a candidate who can beat any other in a pairwise contest. Such a winner, even with only a plurality, is surely in a stronger position than a plurality winner who would be beaten in pairwise contests because supporters of second, third, fourth, etc. candidates would combine to defeat him. In the Indian example, Congress has probably been a Condorcet winner; that is, it probably would have been able to defeat rightists in a pairwise contest because leftists would vote for Congress rather than rightists, and similarly it would have been able to defeat leftists in a pairwise contest because rightists would vote for Congress rather than leftists.

gets the same proportion of seats in a legislature as it gets proportion of votes, regardless of the size of the party's vote. In nearly all systems parties with a small proportion of votes get an even smaller proportion of seats (a negative bias), and parties with a large proportion of votes get an even larger proportion of seats (a positive bias). Building on Tufte (1973), Sprague defined an exactly unbiased threshold point, *B,* of the proportion of the vote, through which a party would pass, as its vote increased, from suffering a negative bias to enjoying a positive bias. Using Rae's data, Sprague calculated *B* for plurality systems to be 0.32 and for proportional systems to be 0.12; that is, third parties in proportional systems get a fair or positively biased proportion of seats if they get one-eighth or more of the vote, whereas in plurality systems they get a fair share only if they get one-third or more of the vote. This comparison demonstrates quite vividly how severely Duverger's mechanical effect discourages the formation of third parties in plurality systems.

The main dispute is about the validity of the psychological factor, which Downs bluntly described thus:

> A rational voter first decides what party he believes will benefit him most; then he tries to estimate whether this party has any chance of winning. He does this because his vote should be expended as part of a selection process, not as an expression of preference. Hence even if he prefers party A, he is "wasting" his vote on A if it has no chance of winning, because very few other voters prefer it to B or C. The relevant choice in this case is between B and C. Since a vote for A is not useful in the actual process of selection, casting it is irrational (Downs 1957, p. 48).

What Downs describes has come to be called "sophisticated" voting, by which is meant that the voter takes account of anticipated votes by others and then votes so as to bring about the best realizable outcome for himself, regardless of whether or not his vote is sincere, i.e., for his preferred alternative.

In the election of single executives, if sophisticated voting occurs, it always works against third parties. (Indeed, early statements of Duverger's law in the United States, e.g., by MacMahon (1933), emphasized the special importance of the elected executive in bringing the psychological factor into play.) In the election of members of a legislature, however, which of the several parties is weakened by sophisticated voting depends on conditions in the constituency. If the third party nationally is the weakest locally, then sophisticated voting by its supporters weakens it. However, if the third party nationally is one of the two larger parties locally, then sophisticated voting by supporters of the weakest party (i.e., one of the two larger parties nationally) strengthens the third party. This latter effect is probably what has kept alive the Liberal party in Britain and some Canadian third parties. Because third parties remain third parties, however, the main force of sophisticated voting must work against third parties.

Given the significance of sophisticated voting in the explanation of why Duverger's law works, one very important question is: Does sophisticated voting occur? That is, are ordinary voters clever and bold enough to vote against their true tastes?

Shively (1970) made the first attempt to discover sophisticated voting. He interpreted Duverger's law (rather too broadly, I think) as the sentence: "Where the likelihood that a party can win . . . is low, voters are less likely to continue voting for it, or . . . to begin voting for it." For a test, he created an index of the likelihood of winning and regressed the change of a party's proportion of the vote in two consecutive elections on this index. He expected a positive association, i.e., low likelihood linked with decline in share of votes, but he got a negative one. This result led him to further statistical manipulation and a reinterpretation which he believed supported the law, though only weakly. Hence he concluded that the psychological factor had "a trivial impact on election outcomes."

Given the empirical strength of Duverger's law at the institutional level, these results from electoral data were, to say the least, perplexing. Since Shively's form of the hypothesis and his method were far too gross to study the truly relevant behavior, however, other scientists have looked more precisely at voters' desertion from third parties. These investigators have found a relatively large amount of sophisticated voting in Britain, Canada, Germany, and the United States, as described below.

Britain. Spafford (1972) observed that Shively's hypothesis involved no discrimination between situations in which sophisticated voting would or would not be efficient, but in fact one would expect more sophisticated voting as the chance increases to affect the outcome between one's second and third preferences. That is, if the race is close between the major parties, then third-party supporters are more likely to desert their party at the polls. Spafford tested this for 104 constituencies with Liberal candidates in both the 1964 and 1966 elections and found a highly significant, positive association between the Liberal share of the vote in 1966 and the share of the vote of the winning party in 1964. For example, lower Liberal shares went with lower shares for the winning party in the previous election, which means that, with

a greater chance to influence the outcome, more Liberals deserted. Clearly sophisticated voting occurred in this instance.

Lemieux (1977) elaborated on this analysis by comparing the effect of the Liberal vote in all constituencies with its effect in marginal constituencies (i.e., those in which the margin between Conservative and Labour was less than 15 percent) for all seats that Liberals contested and for each pair of elections from 1959 to 1970. Categorizing constituencies according to the Liberal strategy (to contest in both elections, or the second only, or the first only), Lemieux found that the Liberals had a significant effect on the Conservative share of the vote in five of the nine possible cases when considering *all* the constituencies in the category. Considering just the marginal constituencies for these five cases, the Liberals' effect was also significant but of the opposite sign and just about the same absolute size, which means that, for the marginal seats, the incentive for the Liberals to desert their party is extremely great. Lemieux remarked, and I agree, that these results indicate a large amount of sophisticated voting (Lemieux 1977, p. 177).

In a study of third-party voters in Britain, Cain (1978) examined the matter with the use of election results and then survey responses, both from 1970. Since the results from the latter confirm results from the former, we have yet another confirmation of the existence and significance of sophisticated voting. First, Cain regressed third-party vote shares in constituencies on Closeness (i.e., the difference between major-party shares) and on Abstention, a new variable in these discussions. His hypotheses were: (1) a positive association between Closeness and third-party share, i.e., as the race between the major parties becomes indeterminate—that is, as the difference between the major parties decreases—the third-party vote would also decrease, and (2) a negative association between Abstention and third-party share, i.e., as the proportion of nonvoters increases, the proportion of third-party votes decreases. The theory was strongly confirmed: both coefficients were the right sign and highly significant (Cain 1978, p. 645).

Given this promising discovery in macroanalysis, Cain then turned to survey responses for microanalysis. Relative to individual decisions, expected utility theory holds that the choice of the individual is a function of the utility, *U,* of the several outcomes, *i,* where outcome *i* is a victory for party *i, i* = 1,2,3, times the probability, P_i, that the voter can bring about these outcomes. Cain estimated the probabilities from data about actual outcomes in respondents' constituencies and the utilities from survey responses. Then he regressed the sincere (first choice) votes and the sophisticated (second choice) vote on expected utility, degree of political participation, and intensity of first preference. He found that the coefficient for expected utility was in the right direction for both categories of voters and statistically significant for sophisticated voters, that is, sincere voters had $P_1 U_1 > P_2 U_2$, whereas sophisticated voters had the reverse. Furthermore, the closer that sophisticated voters judged their first and second choices to be, the more likely they were to vote sophisticatedly, which supports the inference that the voters were in fact consciously sophisticated (Cain 1978, pp. 650-51).

Germany. In elections for the Bundestag, voters cast two ballots simultaneously, one for a candidate to be chosen by the plurality rule in single-member districts (*Erststimme*), and the other for a party list to be awarded seats by proportional representation in a statewide multimember district (*Zweitstimme*). Each party then gets its plurality-won seats plus the number of seats won by the proportional rule less the number of plurality-won seats. If sophisticated voting occurs, one would expect that the two major parties would get more *Erststimmen* (votes in plurality elections where voting for small parties is "wasteful") than *Zweitstimmen* (votes in proportional elections, where every vote for a small party can count) and vice versa for small parties. Fisher (1974) found this to be exactly and universally the case: In every state in every election from 1961 through 1972, Christian Democrats and Social Democrats had fewer *Zweitstimmen* than *Erststimmen,* whereas every minor party had more. The typical shift was 1 to 2 percent for the large parties and in 1972 up to 5 percent for the Free Democrats, then the only surviving minor party. More to the point, one would expect the shift to be especially large for minor parties, and this was exactly what Fisher found. In 1961, 1965, and 1969, the Free Democrats lost between 13 and 38 percent of its *Zweitstimmen* when their voters cast the *Erststimmen,* whereas the major parties never lost as much as 7 percent (Fisher 1974). This information enables us to estimate the sophisticated voting for supporters of Free Democrats at between one-tenth and two-fifths.

Canada. Black (1978, 1980) also used survey data to study individual decisions. Using preference orders from survey data and probabilities of affecting outcomes from actual outcomes in constituencies, for one test he categorized voters into (1) those for whom it would be advantageous to vote sophisticatedly, and (2) those for whom it would not be. For data from elections in 1968 and 1972, approximately 37 and 62 percent of the former (advantaged) and only 10 percent of the latter (not advantaged) actually did so. For another test, he categorized voters into marginal

(i.e., small preference for first over second choice) and nonmarginal (large preference). The marginal voters were found to be much more likely to vote sophisticatedly than the nonmarginal, and for those marginals for whom sophisticated voting was advantageous, actual voting for the second choice ranged between 50 and 100 percent. These two tests were repeated and confirmed in elaborate regression equations. Altogether they indicate a remarkable amount of sophisticated voting.

United States. The 1968 presidential election with a third-party candidate and national survey data about preference orders allowed Bensel and Sanders (1979) to estimate the proportion of sophisticated voting in that election. Comparing those for whom sophisticated voting was advantageous (mostly Wallace supporters) with those for whom it was not, they found that the 12 percent of the advantaged voted sophisticatedly, whereas only 4 percent of the not advantaged did. Since the electoral college breaks up the national electorate into fifty parts with different information about probable outcomes in each one, this allowed them to compare voters' calculations. If voting is sophisticated, it should be the case that where Wallace was strong (i.e., had more chance to carry the state), his supporters would be more likely to vote sincerely than where he was weak. The effect was striking: in strong Wallace states only 4 percent voted sophisticatedly as opposed to 17 percent in states where Wallace was weak.

VII

The evidence renders it undeniable that a large amount of sophisticated voting occurs—mostly to the disadvantage of the third parties nationally—so that the force of Duverger's psychological factor must be considerable. It seems initially appropriate and attractive, therefore, to construct a theory to explain Duverger's law out of the theory of rational choice. Nevertheless, we cannot do so blithely. In the first place, not everyone votes sophisticatedly, although the evidence collected here suggests that most people who "should" do so by reason of the expected utility calculus probably do so in fact. It is difficult, however, to build a theory on behavior that is not certainly universal, and even if it is universal, there remains a serious and unresolved paradox in the argument, which is that the expected utility calculus of voting may itself be irrational.

In Downs's statement of the theory, which I cited previously, the rational voter should expend his vote "as part of the selection process," not as "an expression of preference." Yet this statement may be indefensible because, as Downs himself pointed out (1957, pp. 36-50, 260-76) and as Ordeshook and I have elaborated (Riker and Ordeshook 1968), it may be impossible for an individual to influence the selection process. One interpretation of influence is the chance to make a tie or to break a tie that occurs in the absence of the individual's vote. This chance is, of course, extremely tiny in most elections in the modern state. Under this definition, it is objectively the case that one cannot expect to contribute much to the decision process. If so, the rational action may be simply to express a preference.

Ferejohn and Fiorina (1974, 1975) have suggested that individuals do not calculate their chance of influence but merely their satisfaction, minimizing thereby the maximum regret they would feel if an undesired candidate won. The debate over the relative merits of minimax regret and expected utility is extensive (Beck 1975; Mayer and Good 1975). Although the bulk of the evidence about the way people behave now seems to favor expected utility (Black 1978; Cain 1978; Aldrich 1976), still the fact that the minimax regret interpretation can be put forward plausibly suggests that some people may be interested merely in utility, not expected utility.

If the chance to influence is negligible, then energy spent on a calculus and sophisticated voting is wasted and irrational, whereas voting merely to express a preference may be entirely rational. Meehl (1977) has faced this problem squarely and has insisted that the "wasted vote" argument is at best meaningless and at worst a fraud. Voters' motivation is rational, he argued, only in terms of their sense of moral obligation. This obligation cannot involve a means-end calculation—for that is meaningless when votes are not influential—but must instead respond to a moral imperative. He acknowledged that moral imperatives might also lack meaning, in which case all justifications of voting are irrational. But if only the morally motivated vote is rational, then it is impossible to waste a vote (or to behave irrationally) by voting simply for one's first preference.

Granting some persuasiveness to Meehl's argument, the theoretical underpinning of Duverger's law is surely weak if behavior in accord with the psychological factor of individual voters' calculation of expected utility is itself irrational. It seems necessary, therefore, to find some new, or at least additional, theoretical explanation of why Duverger's law works.

The direction one must go, I believe, is to turn attention away from the expected utility calculus of the individual voter and to the expected utility calculus of the politician and other more substantial participants in the system. The groups and individuals who buy access and the politicians who buy a future have substantial interests, and it is

their actions to maximize expected utility that have the effect of maintaining the two-party system under plurality voting.

One especially interesting feature of politics under plurality rules is that minor parties regularly appear. The reason, I believe, is that quite reasonably not all voters vote sophisticatedly. Instead they are willing, like Meehl himself, to support a program that appeals to their ideological taste. Potential politicians are in turn often willing to experiment with and invest in new programs and platforms to form a possible winning venture. Since some of these win locally, they can remain in the system for a long time. In the United States there is the additional attraction to politicians in that we have a two-ballot majority system (rather than a plurality system) at the electoral college level, which encourages third parties because their leaders may convince themselves that they have a chance to throw the election into the House of Representatives (Bensel and Sanders 1979). Coupling the interest of potential leaders with the sincere behavior of many voters, one understands why there is an almost constant supply of third parties.

The interesting question about such parties is not why they begin, but why they fail. I believe the answer is that donors and leaders disappear. A donor buys future influence and access, and many donors are willing to buy from any party that has a chance to win. (In the United States, at least, many donors give to *both* parties.) But as rational purchasers they are not likely to donate to a party with a tiny chance of winning, and in a plurality system, most third parties have only that chance, because plurality rules give large parties a large relative advantage over small parties (Rae 1971, pp. 88-92, and Sprague 1980). Similarly a potential leader buys a career, and as a rational purchaser he has no interest in a party that may lose throughout his lifetime. So the answer to the question of failure is that third parties are rejected in the rational calculus of expected utility especially by leaders, though also in the calculus by many simple voters. Any adequate theory to subsume Duverger's law must, I believe, begin there, which is a task for scholars in the next decade.

VIII

I began this survey of the history of Duverger's law to demonstrate that a history existed. I think it is clear that in a forty-year period in which writers struggled to enunciate it, through another half century, when it was clarified until Duverger asserted it as a law, and in the succeeding thirty years, it has been examined with increasing scientific sophistication

- empirically: Counterexamples have been analyzed and the law revised to subsume them.
- theoretically: A theory of the behavioral forces involved has been enunciated and revised. From the first enunciation by Droop, the law has been implicitly embedded in a rational choice theory about the behavior of politicians and voters. This theory has been rendered more and more explicit, especially in the last two decades, so that recent empirical work consciously invokes the rational choice model.
- and as a source of hypotheses: Propositions inferred from it have been tested as, for example, the inquiry about sophisticated voting was undertaken because, if the law is valid and if the theory is appropriate, something like sophisticated voting must occur.

Of course, there is much yet to be done. If the theory is revised along the lines I have suggested, conditions to cover the counterexamples will doubtless be clarified and simplified. And there are more polities to examine. Recently Nigeria has adopted plurality voting, and its future experience with or without a two-party system will be another test of the law.

Although we are only part way along in this history, it still seems to me that the law is much more defensible than when Droop uttered it a century ago. Many—perhaps most—political scientists who specialize in the study of political parties now accept the law (e.g., Katz 1980, who, however, thought it applied particularly at the local level). Still, not all political scientists are convinced it is valid, and that is exactly as it should be, for skepticism about supposed truths is the heart of science. Still nearly everyone would agree, I believe, that there has been some accumulation of knowledge, and that is what I set out to demonstrate.

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