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## DRAGONS, BACON STRIPS AND DUMBBELLS—WHO'S AFRAID OF REAPPORTIONMENT?

ROBERT J. SICKELS†

THE Supreme Court in 1964 forbade state legislatures to manipulate the size of congressional districts to help one party or another.<sup>1</sup> But a close look at districting from the end of World War II until the Court's decision proves that variations in size have been of narrower significance than is generally supposed and that other kinds of gerrymander have had far more to do with the outcome of congressional elections. In the great majority of states with congressional gerrymanders, unequal district size either has not affected the gerrymander or has made it less effective than it would have been had the districts been equal. Whatever its other effects, then, *Wesberry v. Sanders* will not seriously curtail the power of state legislative majorities to draw district lines to maximize the election of fellow party members to Congress.

### THE EFFECT OF THE GERRYMANDER ON CONGRESSIONAL ELECTIONS

Majority parties in state legislatures gerrymander congressional districts as a matter of course. The electoral maps of many states, particularly the larger ones, are intricate jigsaw puzzles. But inspection of electoral maps for the presence of gerrymanders is hit or miss at best. Dragons, bacon strips, dumbbells, and other strained shapes are not always reliable signs that partisan (or racial or ethnic or factional) interests are being served, while the most regularly drawn district may turn out to have been skillfully constructed with an intent to aid one party. The safest and most direct indication of gerrymandering is a state-wide calculation of results.

A partisan gerrymander may be defined in terms of the relation of votes cast to seats won in a state by the party responsible for drawing the district lines. Gerrymanders can be measured and compared by holding either factor constant. According to this definition, the party with more seats for a given percentage of votes within the entire area encompassed has gerrymandered with greater success. If a party wins 70 per cent of a state's congressional representation with 60 per cent of the two-party

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1. *Wesberry v. Sanders*, 376 U.S. 1 (1964).



alyzed and all appropriate states were considered.<sup>2</sup> Figure I depicts two dimensions of partisan success in the larger states—the percentages of votes and of seats won—arranged to contrast elections in which parties with the majority of votes had been in a position to gerrymander with elections in which they had not.<sup>3</sup> The party with the power of gerrymander is defined as the one in control of the state legislature at the normal post-census time for redistricting, prior to the 1942, 1952, and 1962 elections respectively and in the few additional instances in which redistricting actually occurred at other times. The measure of the relative effectiveness of gerrymandering appears here as a vertical difference between the two sets of data in the diagram. In the range of 50 to 55 per cent of the popular vote where close comparisons are available, the average pay-off in these states for parties with the power of gerrymander is 16.9 and the median 14.5 percentage points higher on the 0 to 100 pay-off scale than for parties whose popular majority has been distributed among districts composed by the opposition.<sup>4</sup> It can be seen that among state parties with a given level of popular vote, those with the power of gerrymander have won a greater proportion of seats in Congress in nearly every case.

The difference between average pay-off for gerrymandering and non-gerrymandering parties in the states as a whole in the 50 to 55 per cent range<sup>5</sup> is somewhat less than in the larger states alone. Table I shows the contrast. The difference between median pay-offs is greater when the smaller states are included.

The deviant cases, in which the party which drew the lines won a smaller percentage of the vote than their popular vote showed them to

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2. 216 state elections of a total of 488 form the basis of this study. States with a single seat in Congress were eliminated as not subject to a gerrymander, and those also were set aside in which it was impossible to describe a total congressional vote for the state (because one or more seats were uncontested) or a state legislative majority (because control was divided between parties or the legislature was nonpartisan). States with all elections at large were also omitted (not because they were devoid of electoral manipulation, but because of the need they posed to build in assumptions about the comparability of data in districted and undistricted states. Here and elsewhere it seemed better to keep the data as free of assumptions and interpolations as possible).

One adjustment of the data was made for the few states with congressional districts and a Congressman at large: the vote cast at large was not scored, but all seats were included in the tabulations of party ratios of seats won and lost.

3. See *AMERICA VOTES* (Scammon ed. 1956-59 and 1962-64); 23 *CONGRESSIONAL QUARTERLY WEEKLY REPORT* 468-512 (1965); and U. S. CONGRESS, *CONGRESSIONAL DIRECTORY*, 82D CONG., 1ST SESS. 273-79 (1951).

4. In Figure I the lines of regression will be seen to continue more or less parallel beyond the 55 per cent point, but the number of comparative cases is insignificant.

5. Percentages of votes are rounded to the nearest whole number for Tables I and II.

TABLE I. *Percentage of Congressional Seats Won by State Parties Gaining 50 to 55 Per Cent of the Total Congressional Vote, With and Without Responsibility for Districting*

	All States		10 or More Districts			
	Mean	Median	Mean	Median		
Party had power of gerrymander	69.8	(N = 69)	67.0	66.1	(N = 28)	64.0
Party did not have power	58.0	(N = 49)	50.0	49.2	(N = 20)	49.5
Difference	11.8		17.0	16.9		14.5

deserve, shed light on the strategy of gerrymandering. Figure I shows Missouri Republicans in 1946, who won 69 per cent of the state's seats with 52.2 per cent of the vote, and Indiana Democrats in 1958, with 73 per cent of the seats and 53.5 per cent of the vote, to have done abnormally well without having controlled the state legislature. In these two states, where neither party's membership is highly concentrated, the gerrymander at times works so well as to leave the minority party a single congressional seat. But the usual margin of victory is slim and fairly evenly distributed about the state, so that when the majority changes in one district it is likely to change in most. As Charles Merriam wrote of the gerrymander in 1922, "The shifts in party vote make it a dangerous practice, which sometimes recoils on the heads of those who undertake it."<sup>6</sup> The party drawing congressional district lines has a choice of maximizing its return in the long or the short run. It may choose to capture fewer districts and maintain wider margins in each. Because of the role of seniority in Congress, a state party's influence is likely to depend in part on hedging against an uncertain future in this fashion and counting consistency as an ingredient of success in gerrymandering.

#### THE RELATIVE EFFECT OF MANIPULATION OF DISTRICT SIZE

In the larger competitive states during the last two decades, the gerrymander (including all devices active and passive, accidental and deliberate) accounted for an average advantage of three seats to the party favored in the state legislature. The extent to which the control of district size has contributed to this advantage must be computed in order to project the future of gerrymandering under the new constitutional rules.

Several procedures exist for drawing district lines for maximum party

6. MERRIAM, *THE AMERICAN PARTY SYSTEM* 110 (1922).

advantage. As far as possible, votes of the opposition party should be put in districts that can be won by the gerrymandering party, taking care to leave a margin of safety. In areas where it is clear that the opposition party is so strong that it must win one or more seats, lines should be drawn to concentrate its votes and create as large a margin of victory as possible. It might still be practicable in such an area, as a variation on this theme, to construct a district for one's own party by stringing together pockets of strength. Finally, districts conceded to the opposition could, prior to *Wesberry*, be made far more populous than the rest.

The difficulty in turning these familiar rules into prescriptive formulas is illustrated by Hacker's 1963 study of congressional districting which characterizes the votes in any district as "wasted," "effective," or "excess."<sup>7</sup> The losing party's votes are described as wasted. The winner's are effective to the extent needed to overcome the opposition and excess beyond that point. According to this study, a measure of a party's success in gerrymandering is the proportion of its state-wide total of votes that can be classed as effective. But this satisfactory description of votes in a single district turns out to be a troublesome beginning for state-wide analysis. It is possible for a party holding its complement of seats constant to increase its effectiveness score by decreasing its total vote, and also, with a constant number of votes, to increase its "effectiveness" by reducing the number of congressional seats won.

Consider first a party which wins by a bare majority in every district. Its votes are 100 per cent "effective," and any additional votes lower the score. And so in a one-party state a winning party with no opposition scores zero in effectiveness. Second, because the formula has the effect of weighting excess and wasted votes differently, a party can improve its score by reducing its proportion of excess votes even in the act of losing seats. In a three-district state the vote might be:

	Party A	Party B
District 1	90,000	30,000
District 2	—	120,000
District 3	20,001	20,000

Party A's effective vote is 30,001 in District 1, none in District 2, and 20,001 in District 3, or 45.4 per cent (50,002/110,001), with which it wins two seats. But if it redistricts in the following way and obtains a

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7. HACKER, CONGRESSIONAL DISTRICTING 47 (1963).

higher score, Party A will lose a seat in Congress with the same popular vote:

	Party A	Party B
District 1	60,001	60,000
District 2	50,000	70,000
District 3	—	40,000

In this case Party A's effective vote is concentrated in District 1: 60,001 or 54.5 per cent. The formula gives the higher effectiveness score to the less productive districting because Party A's excess votes have been reduced from 59,999 in the first illustration to none in the second.

A redefinition of "effective" votes as those constituting a simple majority in any district would improve Hacker's formula by eliminating its bias in favor of one kind of gerrymander. But a more exact test of the manipulation of district size is available to show the relative impact of this and other forms of gerrymander—a test, furthermore, that unlike the approach of Hacker, allows comparisons to be made between the more and the less competitive states.

The measure I suggest of the size factor in gerrymandering uses total vote rather than population as the index of district size and consists of two operations. First, the total state vote of Party X is divided by the total two-party vote cast for congressional candidates to arrive at X's percentage of the state total. Second, Party X's percentages of the vote in the districts severally are averaged, in effect eliminating the differences in size from district to district. The disparity between the results of the two calculations can be understood as the advantage (or disadvantage) conferred by district size. For example:

	Party X	Party Y
District 1	60,000 (60%)	40,000 (40%)
District 2	55,000 (55%)	45,000 (45%)
District 3	25,000 (17%)	125,000 (83%)
Totals	140,000 (40%)	210,000 (60%)

Party X wins 40 per cent of the total state congressional vote. The average of its district percentages (60, 55, and 17) is 44 per cent. It would require 44 per cent of the total vote or an additional 4 per cent to achieve the same proportion of votes in each district if the districts all had the same number of voters. Practically, Party X has won in the smaller districts, Party Y in the larger district, and as a result X has the size advantage.

This average-percentage analysis can be used to measure the part size plays in a gerrymander by rerunning the original tabulation (Table I), substituting the average district vote of the party for its actual state-wide percentage throughout. If the manipulation of size is generally effective as a gerrymandering device, the differences between the means (and the medians) in the second tabulation will be significantly smaller, in a proportion that can be taken as a measure of the

TABLE II. *Percentage of Congressional Seats Won by State Parties Gaining 50 to 55 Per Cent of the Average Congressional District Vote, With and Without Responsibility for Districting*

	All States		10 or More Districts			
	Mean	Median	Mean	Median		
Party had power of gerrymander	69.1	(N = 69)	67.0	66.3	(N = 29)	64.0
Party did not have power	59.8	(N = 45)	50.0	50.1	(N = 17)	50.0
Difference	9.3		17.0	16.2		14.0
Table I difference	11.8		17.0	16.9		14.5

relative importance of this gerrymandering technique. Table II makes it clear that control of size has not had such an impact on the congressional gerrymander during the period studied.<sup>8</sup> Table II is not signi-

TABLE III. *Per Cent Advantage and Disadvantage Attributable to District Size, 1946-1964*

←disadvantage					advantage→				
0	6	8	30	90	43	22	12	5	0
-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Mean = .365 per cent									
Median = 0									
N = 216									

ficantly different from Table I. It is reasonable to conclude that the constitutional limitations on variation in size will not have much effect on the drawing of district lines for the benefit of the party in control of the state legislature.

The reason for the negative outcome is that productive and counter-productive differences in district size nearly cancel out within and among the states. As Table III indicates in summary form, the "ad-

8. The elections considered in Tables I and II differ marginally—a few fall between 50 and 55 percent by one formula but not by the other.



vantage" of the average-of-percentages over the actual state-wide percentage of votes won by the gerrymandering party is on the whole about nil (median 0, mean .365 per cent),<sup>9</sup> but the range is substantial, from minus three to plus four per cent. Dahl has furnished a rough guide to the meaning of such margins: ". . . a net shift of 1 per cent of the electorate from one party to the other will result in a net gain of about 2.5 per cent of the House seats for the benefited party . . ." <sup>10</sup> The highest product moment correlation of this advantage and pay-off in seats has a coefficient of .53, in the case of gerrymandering parties in the 50 to 55 per cent vote range among states with ten or more districts, significant at the one per cent level. In other words, successful manipulation of district size is associated with a high gerrymander score, but most diversity in district size is not successful from the viewpoint of the party with responsibility for districting. It is either neutral or unsuccessful.

Some states have been on the minus and some on the plus side with fair consistency during the two decades. New York and New Jersey have had negative or counterproductive size patterns,<sup>11</sup> for example, and Maryland, Oklahoma, and South Dakota positive patterns augmenting their gerrymanders. One of the benefits of this measure as a diagnostic tool is the easy comparisons it allows through time as well as between states. Hacker's study of 1962 elections in three states—Michigan, New York and California—rests on what prove by this measure to be atypical cases. The effect of size manipulation was at a peak in Michigan and New York, while California, offered by Hacker as an illustration of the neglect of size manipulation, in fact scores a creditable plus two in 1962.

The widespread practice of gerrymandering is on the whole not dependent on control of district size. Even if the permissible variation in district size were reduced to nothing, instead of the 30 per cent contemplated in some proposals of members of the 89th Congress or the 15 per cent imposed by some courts, state legislatures would be free to adjust the party balance of their districts to increase substantially

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9. There is little difference between elections occurring within ten years after redistricting (median 0, mean .421; N = 83) and the rest (median 0, mean .330; N = 133). In elections immediately following redistricting the average advantage is fractionally larger (median 0, mean .695; N = 23).

10. DAHL, A PREFACE TO DEMOCRATIC THEORY 147 (1956), referring to the membership of the House as a whole.

11. The extent to which these patterns are deliberate can be explored state by state. See, e.g., THE POLITICS OF REAPPORTIONMENT (Jewell ed. 1962), generally and with respect to New Jersey in particular on pp. 15 ff.

the number of seats they are likely to win. In 1965 and 1966, court-ordered redistricting was viewed as an invitation to compensate for the loss of one tool of gerrymandering by the sharpening of others. In Kansas, for example, the legislature redrew district lines to reduce the variation in size to 14 per cent, but it simultaneously increased the margin of safety in two competitive districts to make it likely that the gerrymandering party would win all five congressional districts with only 54 or 55 per cent of the state-wide vote.<sup>12</sup> It would probably be even more difficult for the courts to fashion rules to prohibit manipulation in district drawing than for it to outlaw malapportionment, but if the *effects* of state legislative manipulation constitute the evil to be prevented, the courts have no choice but to become involved in this thorny problem.

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12. 24 CONGRESSIONAL QUARTERLY WEEKLY REPORT 2048 (1966).