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Party Control and Partisan Bias in 1980s Congressional Redistricting

Janet Campagna
Bernard Grofman
University of California, Irvine

We estimate bias and responsiveness in 1980 and 1982 congressional elections for the nation as a whole and for states grouped according to control of the governorship and state legislature and according to legislative versus court control of the redistricting process. We find that in states where one party controlled the redistricting process, partisan bias moved in a direction favoring the party controlling the redistricting, but the effect was large only for states under unified party control. However, at the national level, redistricting was almost a wash, with a slight pro-Democratic bias in 1982 which was lower than that in 1980. These findings contradict views widely expressed in the national press about a strong pro-Democratic national gerrymander, and also contradict the findings of Abramowitz (1983) that partisan bias in 1980s congressional redistricting was important only in Democratic-controlled states. We show that Abramowitz's conclusions rest on an improper method of estimating bias, one that confounds bias and responsiveness (swing).

A number of political scientists have attempted to estimate the impact of redistricting on the seat and vote shares of political parties (Browning and King 1987; King and Browning 1987; Grofman 1990a; Niemi 1985; Niemi and Wright 1990; Owen and Grofman 1983; Tuftes 1973). Of particular interest has been the magnitude of the districting advantage, if any, to the political party controlling the redistricting process in a state (Abramowitz 1983; Ayres and Whiteman 1984; Basehart 1987; Born 1985; Cain and Campagna 1987; Erikson 1972; Glazer, Grofman, and Robbins 1987; Grofman 1985a, 1985b; King 1989; Sickels 1966). In this paper we confine our attention to congressional districting in the 1980s. Three published studies are of particular importance for purposes of comparison with our own work: Abramowitz (1983), Cain and Campagna (1987), and Ayres and Whiteman (1984).

Abramowitz (1983) makes the claim that states in which the Democratic party had complete control exhibit a much higher swing ratio after 1980s

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congressional redistricting than either the national average, that in states controlled by the Republican party, or that in states under split control. In addition, he claims that the increase in popular vote for the Democrats in the 1982 election was translated into a substantial increase in seat share only in such states, thus implying that the Democrats enjoyed an unfair advantage in those states in which they controlled the redistricting process and that Republican legislative control did not give rise to pro-Republican gerrymandering.

One limitation of the Abramowitz study is that he does not control for those instances where the redistricting process was not exclusively in the hands of the legislature because of court or Justice Department intervention. Unlike Abramowitz, Cain and Campagna (1987) do separate out legislative plans from those drawn by courts and commission. Their principal concern is to predict which states will engage in partisan districting.¹ Their principal finding is that partisan districting is more likely in states with a combination of a gain or loss of seats, majority rule in legislative voting, and clear partisan control.²

Ayres and Whiteman (1984, 311–12) classify 1980s congressional plans according to their dominant impact (incumbency preserving, partisan, racial, or ideological), and claim that “in contrast to our own expectations and those of earlier studies . . . states in which one party controlled the state government were no more likely to produce party-dominant plans than states with split control.” However, when they exclude the 13 cases in which there was active involvement of federal courts or the U.S. Department of Justice, they do find partisan plans slightly more likely to emerge in states with clear partisan control.³

Neither Ayres and Whiteman (1984) nor Cain and Campagna (1987) provide any measure of the *magnitude* of partisan bias.⁴ Rather each simply classifies states as partisan, bipartisan (incumbent oriented), or other. Our study

¹They do, however, examine the 1980–1982 change in the efficiency of distribution of partisan voting strength under partisan Republican and partisan Democratic plans. Here they find some evidence of increased partisan efficiency in the pattern of movement of voters across constituencies when one party controls the redistricting process.

²Cain and Campagna (1987) accept the *Congressional Quarterly's* determination of which are the partisan and nonpartisan plans.

³In the typology used by Ayres and Whiteman (1984, 312), incumbent-dominant plans accounted for 67% of the plans produced by split-control states (six of nine), compared to 57% of the plans produced by single-party states (eight of fourteen).

⁴Two other major studies of 1980s congressional redistricting yield findings not directly comparable to our own:

Gopojan and West (1985), although they do distinguish among states in terms of partisan control, look at changes in district marginality rather than at the seats-votes relationship. However, we are skeptical of their overall conclusion (1984, 1083) that there probably were limited “Republican advantages in the 1980 redistricting cycle.” Their measure of marginality is in terms of percentage points and not probability of victory. Thus, a five percentage point loss in voting

follows these authors in considering separately the effects of court and Justice Department intervention. Unlike these two studies, however, we offer a general method to measure the actual magnitude of partisan bias and to test whether it varies in a predictable fashion as a function of who controls the redistricting process. Our methodology also differs from that of Abramowitz (1983) in important ways. Abramowitz's results rest on his definition of the swing ratio, since he uses change in the magnitude of the swing ratio as his measure of the effects of partisan gerrymandering. His methodology, however, is doubly flawed. We show that his idiosyncratic operationalization of the swing ratio is inappropriate, and we also show that the swing ratio, however defined, is a poor measure of the effects of partisan gerrymandering. Because his is the only published study to attempt to estimate the actual magnitude of partisan bias in 1980s congressional redistricting, we focus on comparisons with his work.

Our approach is based on ideas in Tufte (1973), Niemi and Deegan (1978), and Grofman (1983). Our methodology is similar in spirit to the work of Gary King and his colleagues (see esp. King and Browning 1987; King forthcoming; King and Gelman 1989), with the exception that we, like most authors (e.g., Brady and Grofman 1988), use the Tufte (1973) logit specification of the seats-votes curve rather than the bilogit model introduced by King and Browning (1987).

The bilogit model introduced by King and Browning is of the form:

$$S = D \left[\frac{1}{1 + \exp \{-\ln(\beta) - \alpha \ln[V(1 - V)]\}} \right] \quad (1)$$

Where:

D: Number of districts

S/D: Seats

β : Responsiveness

α : Bias

which is equal to the logit specification we use for the case where $D = 1$. Note that $D = 1$ when there is only one district under study or when the analysis is aggregated over all districts, which is the case in this study.

A group controlling the districting process should be able to draw districts to advantage its own supporters by making use of a combination of dispersal and concentration gerrymandering techniques (see, e.g., Owen and Grofman

strength in a district is treated equivalently by Gopioian and West regardless of whether it has a real effect (a change, say, from 52% D to 47% D in votes) or an insignificant one (say, from 95% D to 90% D in votes).

Schwab (1985) also has findings about 1980 congressional redistricting not directly bearing on the impact of partisan control of the redistricting process on the partisan fairness of the resulting plans.

1988). We find partisan bias in 1980 congressional districting to exist in favor of the controlling party in all groups of states except those where the Democrats controlled two of the three elected branches of state government. In most cases, however, we find the actual magnitude of the effects quite small. Unlike Abramowitz we find bias present in Republican-controlled states, not just in Democratic-controlled states. Indeed, the change in partisan bias from 1980–1982, in favor of the controlling party, is largest in the completely Republican-controlled states.

THEORETICAL ANALYSIS

There is considerable consensus in the literature (Ansolabehere, Brady, and Fiorina 1987; Grofman 1983; King and Browning 1987; Niemi and Deegan 1978) that the swing ratio ought not to be regarded as a measure of fairness or bias.

Let us represent the seats-votes linkage as

$$\frac{S}{1-S} = \alpha \left(\frac{V}{1-V} \right)^\beta \quad (2)$$

Following Tufté (1973) we logarithmically transform equation (2) as below:

$$\log \left(\frac{S}{1-S} \right) = \log \alpha + \beta \log \left(\frac{V}{1-V} \right) \quad (3)$$

Here S represents seats share and V vote share, and β is an exponent.

It is convenient to define bias at $V = .50$ as

$$\frac{e^{\log \alpha}}{1 + e^{\log \alpha}} - 0.5 = \frac{\alpha}{1 + \alpha} - 0.5 = \text{bias}, \quad (4)$$

where e is the basis of natural logs and α is as in equation (2). When $\alpha = 1$, then $\log \alpha = 0$, and the expression in equation (4) becomes zero; i.e., when $\alpha = 1$, bias is zero (see Grofman 1983).

By defining bias in this way, the value of bias shown in equation (4) directly tells us how much more than 50% a party receiving a 50% vote share will get. That is, bias is the seat share above/below .50 earned by the Democrats if they receive exactly 50% of the votes (in a two-party contest). In other words, if the bias is found to be, say, $-.001$, this means that, with 50% of the votes, Democrats can expect to get only 49.9% of the seats. A positive bias favors Democrats; a negative bias favors Republicans.

Even if Abramowitz (1983) were correct that the *swing ratio* after 1980s congressional districting was higher in states under complete Democratic control (and, as we shall see, he is not), this would not prove anything about whether there was a *bias* against Republicans in those states. Bias needs to be calculated independently of swing. We can have high swing ratios and either low bias or high bias, and we can have low swing ratios and either high

bias or low bias. The swing ratio measures the *responsiveness* of the electoral system to changes in votes; the bias measure is a measure of the *symmetry* in the way in which each party is able to translate its votes into seats (see discussion below and Niemi and Deegan 1978; Grofman 1983; or King and Browning 1987 for further details).

Abramowitz's methodology is also flawed in that it uses an inappropriate measure of swing. Abramowitz determined the swing ratio by taking the increase in the Democratic percentage of *seats* from 1980 to 1982 and dividing it by the increase in the Democratic percentage of the *vote* over this same period.⁵ Niemi and Fett (1986), using historical data, provide a clear and convincing argument that calculating a swing ratio by taking the difference in votes divided by the difference in seats provides a misleading picture of the nature of the seats-votes relationship.

For present purposes we can simplify the exposition by focusing on the fact that, for any given seats-votes relationship, the difference method of calculating swing will yield an estimate of swing that depends upon the magnitude of the Democratic vote share *and* the degree of bias in the system (as defined in equation [4]). But states under Democratic control tend to have a high Democratic vote share, and states under Republican control will tend to have a low Democratic vote share. Thus, Abramowitz's way of measuring bias is inherently confounded with party control.

A difference-based measure of the swing ratio is equivalent to calculating the slope of the seats-vote curve at a particular range of the curve. The special case of this, for a pair of elections, as calculated by Abramowitz, is

$$\frac{\Delta S}{\Delta V} = \frac{S_t - S_{t-1}}{V_t - V_{t-1}} \quad (5)$$

where $t = 1982$, and $t - 1 = 1980$.

In the general case, equation (5) is equivalent to calculating the swing ratio as the total derivative of S (seats) with respect to (votes), i.e., as dS/dV rather than $\Delta S/\Delta V$. The seats-votes curve can be expected to be nonlinear (Theil 1969; Taagepera 1973; Grofman 1983; King and Browning 1987). A standard way of representing the seats-votes curve is in the form shown in equation (2). Thus, in general, the difference-based measure of the swing ratio ($= dS/dV$) can be expressed by taking the derivative of the expression in equation (2). Doing so we obtain equation (6). The problem is that dS/dV has two components, one measuring responsiveness and the other partisan bias. It is only the first of these that properly corresponds to what is customarily meant by the swing ratio.

⁵This calculation yielded a swing ratio of 2.6 in the democratically controlled states and swing ratio of less than one in all others. In comparison, Abramowitz calculated a national swing ratio of 1.33. Abramowitz interpreted the fact that the swing ratio was so much higher in Democratic-controlled states as evidence of successful gerrymandering by the Democrats in those states.

$$\frac{dS}{dV} = \frac{\alpha\beta\left(\frac{V}{1-V}\right)^\beta}{V(1-V)\left[1 + \alpha\left(\frac{V}{1-V}\right)^\beta\right]^2} = \begin{array}{l} \text{difference-based measure} \\ \text{of the swing ratio} \end{array} \quad (6)$$

When $V = .5$ and $\alpha = 1$, this expression simplifies to β . Thus, the exponent β in equation (1) can be taken to be the actual *swing ratio* at $v = .5$, for the special case *when there is no bias*. But when $V = .5$ and α is *not* equal to one, it is apparent from equation (5) that the difference-based measure of the swing ratio is a nonlinear function of both β and α . This treating this measure as *identical* to the swing ratio fails to recognize the importance of separating out the effects of β (which we will call the *responsiveness effect*) from the effects of α (which we will call the *bias effect*).⁶ Except under special circumstances, the total change in seats for a given change in votes (dS/dV) is a function of *both* swing ratio (responsiveness) and bias. This important methodological point is missed in Abramowitz's (1983) analysis.

EMPIRICAL ANALYSIS

Table 1 groups the states in 1980 according to the categories used by Abramowitz.

We show in table 2 swing ratio and bias for 1980 and 1982 calculated by using equation (2) to generate a (projected) seats-votes curve. We constructed the projected seats-vote curve by uniformly changing the actual vote share by increments of one percentage point.⁷ Although the assumption of uniform swing, which underlies these projections, has been criticized as unrealistic (King and Browning 1987) we argue that it appropriately models the types of change, i.e. partisan shifts, that we are interested in, as opposed to movements due to candidate specific variables. OLS is then used to estimate swing ratio and bias in the range of plus and minus 10 percentage points of the actual value of vote share in each year. The methodology we

⁶The same point about the interconnection of swing and bias is made for the bilogit form of representing seats-votes curves by King (1989). The present argument was independently derived.

⁷Specifying *the* Democratic share of the vote in any given election is a considerably more complex task than we might expect. We calculated three different measures, two discussed by Niemi and Fett (1986)—raw vote share and mean vote share and one proposed by Ansolabehere, Brady, and Fiorina (1987). One key issue is how to handle uncontested seats. For example, to avoid using 100% as the vote share for a party in an uncontested seat (which, for Congress, tends to bloat the national Democratic vote share) Ansolabehere, Brady, and Fiorina substituted the average (two party) vote share in the contested seats in a state as the vote share value for uncontested seats in that state. For an alternative approach see King (1989).

The mean vote share is used in the analyses that follow. Because the three measures of national Democratic vote share we calculated were quite similar (table omitted), which we use should matter little since we calculate a hypothetical seats-votes curve ± 10 points around observed vote and seat values.

TABLE 1
STATES BY PARTY CONTROL

Complete Republican Control 0	1	2	Complete Democratic Control 3
Indiana	*Alaska	Arkansas	Alabama
Iowa	Arizona	Louisiana	California
Nebraska	Colorado	Maine	Connecticut
*North Dakota	*Delaware	Michigan	Florida
Pennsylvania	Idaho	Minnesota	Georgia
*South Dakota	Illinois	Missouri	Hawaii
*Vermont	Kansas	Nevada	Kentucky
Washington	Montana	New York	Maryland
	New Hampshire	Oregon	Massachusetts
	Ohio	Tennessee	Mississippi
	Utah	Texas	New Jersey
	*Wyoming	Virginia	New Mexico
		Wisconsin	North Carolina
			Oklahoma
			Rhode Island
			South Carolina
			West Virginia

*States which elect a single congressional representative.

utilize was first made use of by Butler (1953). It has subsequently been used by Tuftes (1973) and Grofman (1983) among others. (Our restriction to plus or minus 10 percentage points around the actual seats-votes outcome in any year allows us to confine our attention to only those potential vote outcomes that might be regarded as within the realm of the possible.)⁸

We have provided in table 2 separate estimates for each of the four groups of states (grouped according to partisan control) used by Abramowitz (t^* values are shown in parentheses). We define party control in terms of the number of elected branches of state government (two houses of the legislature and the governorship) controlled by the Democratic party. The variable can range from 0 to 3.

⁸We remind the reader that, as previously observed, the swing ratio is not constant across an entire seats-votes curve, and that the swing ratios shown are at the point $V = .50$, as is standard in the literature. In particular, near the extremes, even large gains in votes may produce no gains in seats (there are 0 and 100 floor and ceiling effects). It is also important to recognize that bias can occur in seats-votes relationships even in the absence of political gerrymandering, simply because of differences in the geographic distribution of Democratic and Republican identifiers (Grofman and Scarrow 1982).

TABLE 2
SWING RATIO AND BIAS RESULTS BY PARTY CONTROL OF REDISTRICTING

	All States	Complete Republican Control 0	1	2	Complete Democratic Control 3
Swing Ratio 1980 "f"	1.62 (79.6)	2.18 (44.2)	1.11 (17.9)	1.47 (33.1)	1.8 (29.7)
Swing Ratio 1982 "f"	1.77 (62.8)	1.85 (30.4)	1.68 (20.3)	1.74 (30.6)	1.77 (50.1)
Abramowitz (1983) 1980-1982					
Swing Ratio α 1980	1.33 (28.7)	0.80 (14.7)	0.70 (-17.1)	0.90 (-0.29)	2.60 (0.22)
α 1982 "f"	.051 (4.2)	-.04 (-2.7)	-.235 (-10.8)	-.162 (-5.5)	.07 (3.8)
Bias* = $f(\alpha)$ 1980	.044	.045	-.068	-.001	.001
Bias* = $f(\alpha)$ 1982	.013	-.01	-.058	-.04	.017
Adjusted R^2 1980	.997	.990	.942	.982	.978
Adjusted R^2 1982	.995	.979	.954	.979	.982

* A positive bias favors Democrats. Bias may be interpreted as the estimated positive or negative increment to a .50 seat share for a party that received a .50 vote share.

Swing Ratio

We are now in a position to compare our results with those of Abramowitz (1983), which is the only one of the three published studies of 1980s congressional districting to report swing ratio figures.

According to Abramowitz, the swing ratio will be higher in the Democratic-controlled states than in the Republican-controlled states. As is apparent from table 2, contra Abramowitz's claim, the swing ratio is high *both* in Democratic-controlled and in Republican-controlled states (2.18 in Republican-controlled states in 1980, 1.85 in 1982; 1.8 in Democratic-controlled states in 1980 and 1.77 in 1982), and higher in the former than in the latter. It is lowest in states that are not single-party dominant (1.11 and 1.47 in such states in 1980, 1.47 and 1.74 in 1982). As common sense would suggest, states in Abramowitz's categories 2 and 3 have a heavy Democratic vote share, while, in contrast, states under Republican control (categories 0 or 1) have a much lower Democratic vote share (usually below 50% in 1980 and close to 50% in 1982).

Bias

The bias at $V = .50$ for each of the four sets of states (and overall) is shown in table 2 for both 1980 and 1982. As noted previously this is the actual bias at $V = .50$, as defined in equation (4), not the parameter, α , of equation (2), which is also given.

What to us is striking about the overall bias estimates in table 2 is how low they are. In particular, the national level bias is smaller in 1982 than in 1980, despite the fact that the Democrats gained votes from 1980 to 1982. Thus, for these two election years, there is no evidence to support the often-made claim (e.g., *Wall Street Journal*, editorial, November 6, 1987) that the preponderance of Democratic control of the redistricting process has significantly harmed Republican chances of controlling Congress.

We find that the only very large biases in both 1980 and 1982 are in the sets of states where Republicans control two of three branches of the state government. Nonetheless, change of control of even a few congressional seats is not trivial and may indeed have impacted the outcomes of some legislation, especially since it has been observed that several hundred votes in Congress each term are very close ones (Jon Fund, *Wall Street Journal*, personal communication, January 1989). In states where Republicans control two of the three branches of state government, category 1, we have a pro-Republican bias of 6.8 percentage points in 1980 and 5.8 percentage points in 1982. In states under complete Republican control, the bias was a pro-Democrat 4.5 percentage points in 1980 (perhaps because of population-induced shifts in district composition). That changed, as expected, to a pro-Republican bias in 1982 of 1.0 percentage point. For states under complete Democratic control, the 1980 bias was 0.1 percentage points in favor of the Democrats and increased to 1.7 in 1982. States with two of the three state-

wide bodies under Democratic control began in 1980 with a bias effectively indistinguishable from zero ($t = 0.63$), and actually shifted in a pro-Republican direction, with a 4.0 percentage point bias in 1982. Thus, two of the four shifts in partisan bias are in the direction favoring the party having the preponderance of control in the state, one shifted unexpectedly away from the direction favoring the controlling party, and the last is one in which a pro-Democratic bias is maintained.

In sum, although we believe Abramowitz's (1983) methodology to be flawed, our analysis reaffirms the view (see also Sickels 1966) that there is a link between statewide party control and the directionality of partisan bias. Our analysis strongly refutes, however, Abramowitz's claim that in this time period this link is found only in the Democratic-controlled states. Rather, it finds a much stronger link in the Republican-controlled states. Of course, it may still be the case that some of the strongest partisan bias in congressional districting came in a few Democratic-controlled states, e.g., California (Cain 1985; Grofman 1985c).

Before we can be confident about the conclusions we have reached from the data shown in table 2, however, we need to rerun Abramowitz's analysis to eliminate from consideration those states whose redistricting was not handled by legislative/gubernatorial action, since including these states may have been biasing our conclusions about the effects of partisan control. Clearly partisan control of the legislature may well be irrelevant if it is not the legislature that is doing the districting.

Commission-Drawn and Court-Drawn Plans

It is clearly appropriate to delete from our set of states those in which redistricting was performed by either the courts or by a commission. The presence or absence of partisan bias in districting plans in such states does not contribute to our detection of the effect of partisan control on partisan bias. To this end, we have reestimated the swing ratio and bias figures presented in table 1 after deleting four states: Colorado,⁹ Hawaii,¹⁰ Kansas,¹¹ and Missouri.¹² The results are presented in table 3.

Comparing the results in table 3 with those in table 2, it is apparent that, in both 1980 and 1982, the swing ratio remains high in both the Democratic-controlled and the Republican-controlled states. The figures for states under

⁹*Carstens v. Lamm*, 543 F. Supp. 68, 76 (D. Colo. 1982). The court concluded that there was an impasse in the redistricting process after the Democratic governor vetoed three plans drawn by the Republican-dominated legislature. There was a court-ordered redistricting plan.

¹⁰Hawaii had a commission-drawn plan which was overturned by a federal court. The court ruled that the use of registered voters as the population base was unconstitutional. *Travis v. King*, 552 F. Supp. 554 (D. Hawaii 1982).

¹¹*O'Sullivan v. Brier*, 540 F. Supp. 1200, 1203 (D. Kansas 1982). The court broke a deadlock between the Democratic governor, who vetoed two plans, and the Republican-dominated legislature.

¹²A three-judge district court drew its own redistricting plan. *Shaver v. Kirkpatrick*, 541 F. Supp. 922 (W.D. Mo. 1982).

TABLE 3
 SWING RATIO AND BIAS RESULTS BY PARTY CONTROL OF REDISTRICTING STATES
 WITH COURT OR COMMISSION-DRAWN PLANS DELETED

	All States	Complete Republican Control 0	1	2	Complete Democratic Control 3
Swing Ratio 1980 "f"	1.61 (77.3)	2.18 (44.2)	0.97 (15.8)	1.47 (27.7)	1.82 (29.7)
Swing Ratio 1982 "f"	1.93 (44.5)	1.85 (30.4)	1.82 (14.9)	1.60 (28.7)	1.79 (50.1)
α 1980 "f"	-.004 (77.3)	.179 (14.7)	-.301 (-19.3)	-.018 (-9.7)	.012 (.52)
α 1982 "f"	-.01 (-5.5)	-.04 (-2.7)	-.27 (-7.9)	-.141 (-4.8)	.08 (4.5)
Bias* = $f(\alpha)$ 1980	-.001	.045	-.074	-.005	.003
Bias* = $f(\alpha)$ 1982	-.002	-.01	-.067	-.035	.02
Adjusted R^2 1980	.997	.99	.925	.975	.978
Adjusted R^2 1982	.99	.979	.917	.976	.992

complete Republican control have changed not at all, since none of the deleted states fall into that category. In general, there were no significant changes in the swing ratio except in states where two out of the three branches were controlled by Republicans. Here we see a large increase in the swing ratio.

Even with states with court-drawn or commission plans deleted, the bias figures presented in table 3 remain strikingly low. The national level bias is barely distinguishable from zero, and, in fact, has decreased in 1982 in comparison with the figure in table 2. One important change in bias due to the elimination of the court commission states is that the states with complete Democratic control now show an increase in partisan bias, albeit, still a low level.

Although there were an additional 10 states in which the courts intervened in the 1980 redistricting process, we decided that it was not appropriate to eliminate these states from the analysis. In the first set of states, a set which includes Arizona,¹³ Georgia,¹⁴ Illinois,¹⁵ Louisiana,¹⁶ Mississippi,¹⁷ and Texas,¹⁸ the court intervention was due to racial, rather than partisan issues. The court changes, for the most part, dealt with limited areas of the state and did not represent major changes to the legislatively drawn plans. This group of states is comprised of a disproportionately high percentage of the Southern, heavily Democratic states, and we thought their deletion might skew the overall results. Nonetheless, when bias is reestimated without these states, little change is apparent, even in the category of states under Democratic control (table omitted).

The second set of states which might be excluded, a set which includes Arkansas,¹⁹ Michigan,²⁰ Minnesota,²¹ and South Carolina,²² is one where the

¹³The legislative-drawn plan split the San Carlos Apache tribe, diluting its strength. The tribe was returned to one district. *Goddard v. Babbitt*, 536 F. Supp. 538 (D. Ariz. 1982).

¹⁴*Busbee v. Smith*, 549 F. Supp. 494 (D.D.C. 1982).

¹⁵*Ryan v. State Bd. of Elections*, 661 F. 2d 1130 (7th Cir. 1981); *In re Illinois Reapportionment Cases*, No. 81 C 3915 (N.D. Ill. Nov. 23, 1981), *aff'd sub nom. Ryan v. Otto*, 454 U.S. 1130 (1982).

¹⁶*Major v. Treen* 574 F. Supp. 325 (E.D. La. 1983).

¹⁷After the state's plan was not pre-cleared by the U.S. Attorney General, a court-ordered plan was implemented which was similar to the legislative plan except for one district. *Jordan v. Winter*, 541 F. Supp. 1135 (N.D. Miss. 1982), vacated and remanded sub nom. 103 S. Ct. 2077 (1983).

¹⁸A three-judge court altered two districts after an objection by the U.S. Attorney General to the state's plan. *Seamon v. Upham*, 536 F. Supp. 931, 103 (E.D. Tex. 1982).

¹⁹The court implemented a redistricting plan originally submitted in the legislature with a lower population variance than the enacted plan. *Doulin v. White*, 533 F. Supp. 450 (E.D. Ark. 1982).

²⁰*Agerstrand et al. v. Austin*, Case No. 81-40256 (E.D., Mich., 1982).

²¹*LaComb v. Grove*, 541 F. Supp. 145 (D. Minn. 1982). A deadlock in the legislature led a three-judge district court to order the implementation of a plan similar to that proposed by the Democrat-Farm-Labor party.

²²*South Carolina State Branches Conf. of Branches of NAACP v. Riley*, 533 F. Supp. 1178

court chose a legislatively drawn plan to be implemented. Since it is reasonable to assume that plans drawn by the legislatures may have had a partisan bias, it again seems inappropriate to exclude these cases from the analysis. However, even when these states are eliminated, we find little change in the estimates of either bias or the swing ratio (table omitted).

In summary, we have shown that the swing ratio is an inaccurate measure of bias. When bias is estimated separately from swing it becomes clear that, in 1982, there was not a large degree of partisan bias evidenced at the national level.²³ Further, when states are divided according to party control, and bias is properly defined and court-and-commission-drawn plans are eliminated, the swing ratio shows little variation across cases and bias moves in the expected direction from 1980 to 1982 with the exception of states with Democratic control in two out of three branches. Abramowitz's claim that partisan bias is observed only in states under Democratic control is clearly falsified.

CONCLUSIONS

For the U.S. Congress, after population-based redistricting took place, the 1982 swing ratio was virtually identical across the four categories of partisan control. Moreover, swing went up from 1980 to 1982 at the national level and in most of our categories. This suggests that there are some general effects of redistricting that act relatively similar across all states and give rise to a slightly higher level of swing immediately after a redistricting has taken place. In a study of 15 state legislatures, King (1989) also finds such an increase in electoral responsiveness. These findings are puzzling because normally redistricting is thought to decrease political competition (Tufté 1973; Brady and Grofman 1990 forthcoming). However, the post-redistricting increase in swing may be reflecting changes in district boundaries required by population shifts and the fact that, in the congressional case, a number of states gain or lose seats. A gain in seats may require a more efficient distribution of voters across districts in order to attempt to capture these newly formed districts, while a loss in seats may lead to more competitive races immediately following a redistricting due to incumbents being forced to face another incumbent as a challenger (Cain and Campagna 1987). Further, or perhaps alternatively, a partisan gerrymander may be constructed in order to win a number of districts by small margins. Such a strategy increases the number of competitive seats and thus increases the swing ratio (Cain 1985; Gopoian and West 1985; Brady and Grofman 1990 forthcoming; King 1989).

(D.S.C. 1982). The court ordered the implementation of the plan adopted by the South Carolina House of Representatives.

²³This remains true regardless of which of several measures of national party vote share we use. See footnote 7.

Our approach to measuring bias may fail to show the effects of a partisan gerrymander if such effects are due primarily to the mechanism of incumbent replacement. However, partisan use of incumbent displacement was not a major issue in 1980s redistricting except in, at most, a handful of states (most notably California; see Cain 1985; Owen and Grofman 1988), and thus we can have reasonable confidence that the results reported above do provide a good indicator of the magnitude of partisan gerrymandering effects in congressional redistricting in 1982 in states where the redistricting process was under legislative control—namely, a minimal *net national effect*,²⁴ but significant effects in states under Republican control. Both findings contradict views frequently expressed in the national press and by Republican party officials, as well as the results reported in Abramowitz (1983).

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²⁴ King and Gelman (1989), in an important innovation, seek to estimate partisan bias after eliminating the effects of incumbency advantage, which in the post WWII era benefit the Democrats who control the House. They claim that, after incumbency advantage is subtracted, partisan bias in the House in the 1980s actually favors Republicans. A discussion of incumbency advantage is beyond the scope of the present note. However, King and Gelman (1989) do provide 1980 and 1982 estimates for overall partisan bias in Congress prior to eliminating incumbency related effects. Their estimates for the country as a whole are quite similar to our own for 1980—virtually undetectable Republican bias. However, in 1982 they find a miniscule Democratic advantage, while we find a slight Republican advantage. It would appear, not surprisingly, that for bias estimates near zero, differences in estimation procedure can change the estimated directionality of bias.

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Janet Campagna recently completed her doctorate in the Department of Politics and Society, University of California, Irvine, CA 92717.

Bernard Grofman is professor of political science, University of California, Irvine, CA 92717.