On Criteria for Redistricting

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LAMPADEPHORIA

ON CRITERIA FOR REDISTRICTING

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The one month effort to reapportion the legislative and congressional districts of the State of Washington[1] did not provide an extensive opportunity to probe either the logical human bases for or methods of reapportionment. However, on the basis of the redistricting experience and subsequent analysis and reflection, an appraisal of the generally accepted criteria for reapportionment is appropriate.

Since the constitutional requirement for periodic redistricting on an approximate one-man-one-vote basis is now well established,[2] the major remaining issue is the selection of criteria to implement that standard. The most frequently cited criteria have been[3] (1) equal population, (2) compactness, or lack of irregularity or sinuosity, and (3) use of counties and cities as building blocks. The following criteria also have been suggested:[4] (4) natural geographic boundaries, (5) integrity of cultural groupings, and (6) political balance (no systematic bias). As a geographer, I suggest that (4) and (5) would better be ex-

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1. The Washington State Legislature has the constitutional mandate to redistrict the state. WASH. CONST. art. II, § 3. A Seattle attorney, George Prince, filed suit in the Western Washington District Court requesting that the court appoint a Master if the Legislature had not acted by February 25, 1972. The court accepted the request, and when the Legislature failed to meet the deadline, it selected the author from a list of possible Masters.

2. Reynolds v. Sims, 377 U.S. 533 (1964); Baker v. Carr, 369 U.S. 186 (1962). *See generally* R. DIXON, DEMOCRATIC REPRESENTATION: REAPPORTIONMENT IN LAW AND POLITICS (1968) [hereinafter cited as DIXON]; *Representation and Apportionment,* WASH. CONG. Q. (1966); Bonfield, *Baker v. Carr: New Light on the Constitutional Guarantee of Republican Government,* 50 CALIF. L. REV. 245 (1962); Silva, *Reapportionment and Redistricting,* 213 SCIENTIFIC AMERICAN 20 (Nov. 1965). The decisions were not accepted gracefully; an attempt to amend the Constitution to permit states to determine their own bases for representation was nearly successful. DIXON at 385-435.

3. DIXON at 217-27, 458-69, 490-99, 516-27; REAPPORTIONING LEGISLATURES: A CONSIDERATION OF CRITERIA AND COMPUTERS 16 (H. Hamilton Ed. 1966) [hereinafter cited as Hamilton]; Orr, *Congressional Redistricting: The North Carolina Experience* in STUDIES IN GEOGRAPHY (University of North Carolina 1970).

4. *See* note 3 *supra.*

pressed as a mandate for a seventh criterion—meaningful regions. The Western Washington District Court included the first five criteria in its Redistricting Order, specifically excluding all political considerations.[5] Legislators may add some less lofty political criteria: (8) minimization of the loss of incumbents, (9) minimum change in districts, and (10) achievement of partisan advantage.

While focusing on the application of these criteria to the Washington redistricting case, this article examines the merits and means of implementing these criteria and briefly analyzes the problem of selecting a state agency which can responsibly perform the task of redistricting.

The simple *equal population* criterion understandably has generated the strongest reaction and comment, since it undermined long-standing representational biases between urban and rural areas and lower and upper legislative houses.[6] Although use of the equal population criterion is now constitutionally required, arguments have been advanced in favor of disproportionate representation of sparsely populated rural areas.[7] Large rural areas may experience particular problems in constructing and maintaining highways, in providing health and education services or in managing public lands. They may lack significant internal cohesion, thus making it difficult for one representative to become familiar with his constituency. Such pleas, however, are refuted by the lack of objective evidence that rural areas actually have greater per capita needs than urban areas.

In addition, a seemingly strong and intuitively appealing case against total reliance on the equal population criterion has been advanced on the federal analogy that counties are to states as states are to nations. Since each state, regardless of size, is equally represented in the United States Senate, why not have equal county representation in

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5.   Prince v. Kramer, Civil No. 9668 (W.D. Wash., Feb. 25, 1972). For a summary of earlier redistricting experience in Washington State, *see* Baker, *The Politics of Reapportionment in Washington State,* in CASE STUDIES IN PRACTICAL POLITICS (1960). *See also* R. Teshera, The Territorial Organization of American Internal Governmental Jurisdiction, 194-296, 1970 (unpublished thesis no. 18656 in University of Washington Library) [hereinafter cited as Teshera]; DIXON at 343-46.

6.   Baker, *Implementing One-man, One-vote: Population Equality and Other Evolving Standards of Lower Courts,* in NAT'L MUNICIPAL LEAGUE, CONFLICT AMONG POSSIBLE CRITERIA FOR RATIONAL DISTRICTS (1969).

7.   Israel, *Non-population Factors Relevant to an Acceptable Standard of Apportionment,* 38 NOTRE DAME LAW. 499 (1963); T. O'ROURKE, REAPPORTIONMENT: LAW, POLITICS, COMPUTERS (1972) [hereinafter cited as O'ROURKE]; Teshera at 79-85.

state senates? States, however, have rarely applied the analogy[8] which is fundamentally spurious since the federal government was created by the original sovereign states, the smaller of which exacted the Great Compromise as the price for ratifying the United States Constitution.[9] In contrast, counties are mere administrative creatures of the states which may be altered readily by the states. Thus, the equal population criterion must be utilized.

Nevertheless, use of the equal population criterion need not preclude county representation—counties could be given fractional votes.[10] Under such a plan, a small county entitled by population to one-fourth of a senator would elect one man with one-fourth of a vote. Although mathematically sound, such a plan is generally interpreted to violate the precept of equal representation, since, despite voting differentials, the many legislators from small counties may exert undue influence.[11]

Since reliance on the equal population criterion is constitutionally required, ascertaining the acceptable degree of deviation is essential. This is of real technical importance in the actual demarcation of districts, as well as of conceptual significance in the interpretation of equal representation.[12] Over the last decade permissible departures gradually have been narrowed from about 20 percent to the 1 percent allowed in the 1972 redistricting of Washington State.[13] Although the apparent precision of the United States Census suggests that the 1 percent limit should be achieved easily, it was rather difficult in the Washington case to meet that requirement because many of the smallest census units (enumeration districts in rural areas; superblocks in urban areas) had as many as 2,500 people. The indivisibility of the census units resulted in districts with undesirable, irregular shapes, and often required the division of counties and cities into more than

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8. DIXON at 82-90, 217-29; McKay, *Federal Analogy and State Apportionment Standards,* 38 NOTRE DAME LAW. 487 (1963).

9. *See* note 6 *supra.*

10. Banzaf, *Weighted Voting Doesn't Work: A Mathematical Analysis,* 19 RUT-GERS L. REV. 317 (1965); DIXON at 503-26.

11. WMCA v. Lomenzo, 238 F. Supp. 916, 923 (S.D.N.Y. 1965). Although several plans involving fractional voting have been disallowed, there has been no precise ruling on fractional voting.

12. DIXON 439-55, 535-43; O'ROURKE at 31-32; Teshera at 123-55; Kirkpatrick v. Preisler, 394 U.S. 526 (1969).

13. Prince v. Kramer, Civil No. 9668 (W.D. Wash., Feb. 25, 1972). The 1 percent maximum deviation allowed in the 1972 Washington redistricting order permitted a variation of only 684 people between districts.

one district.[14] Aside from such inconveniences, this requirement is excessively stringent for four convincing reasons: (1) the census itself is not generally considered to be accurate within 1 percent; (2) as much as 15 percent of the population moves every year; (3) the population eligible to vote varies by up to 20 percent from the total population; and (4) within a few months of the census, long before a redistricting plan is even accepted, the population of many of the census units changes by more than 1 percent.[15] Due to the prevalence of census units with populations in excess of 1,000 people, uneven census accuracy, and the high rate of mobility in the American population, I would recommend that a 3 percent (or even a 5 percent) deviation is more realistic and in accordance with the requirement of equal representation. Forming districts of precisely equal population requires accuracy and stability of census data that simply does not exist.[16] Had the margin of error been 3 percent, the redistricting plan for Washington could have been esthetically improved, enabling more regular and compact districts as well as fewer divisions of cities or counties. Further, state legislative districts with precisely equal populations are not constitutionally required.[17]

A *compactness* criterion generally is regarded as a major and necessary safeguard against the practice of gerrymandering.[18] The partisan plans presented in the Washington State Legislature (a Senate Demo-

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14. Blocks and enumeration districts are the smallest areas for which data are collected. Many of these areas are shaped irregularly, and the population distribution within many districts is not known.

15. BUREAU OF THE CENSUS, CURRENT POPULATION REPORTS, Series PC 25 (1971-72); BUREAU OF THE CENSUS, MOBILITY FOR STATES AND THE NATION (1972); BUREAU OF THE CENSUS, PROCEDURAL REPORT ON THE 1960 CENSUS OF POPULATION AND HOUSING 137-46 (1963); DIXON at 535-43; O'ROURKE at 31-32. For example, in the years 1967-69, King County may have grown at the rate of 5-7 percent per year, while between 1969 and 1971 it may have declined about 2 percent per year.

16. The impermanence of the population distribution does not justify *prospective* districts, however, as our ability to forecast population changes is simply not good enough. The problem of indivisible units (*see* note 14 and accompanying text *supra*) does not make it difficult to meet a 1 percent deviation requirement in forming congressional districts.

17. The United States Supreme Court, in a Virginia redistricting case announced February 21, 1973, upheld a plan in which districts varied by as much as 16 percent, stating that the precise equality required for congressional districts by the Court in Kirkpatrick v. Preisler, 394 U.S. 526 (1969), was not meant to apply to state legislative districts. Mahan v. Howell, 93 S. Ct. 979 (1973).

18. The deliberate arrangement of districts to preserve incumbent representation and enhance partisan interests is discussed in: Bunge, *Gerrymandering, Geography and Grouping*, 56 GEOGRAPH. REV. 256 (1966); Sauer, *Geography and the Gerrymander*, 12 AM. POL. SCI. REV. 403 (1918); Vickrey, *On the Prevention of Gerrymandering*, 76 POL. SCI. Q. 105 (1961).

cratic plan and a House Republican version) had sufficiently elegant and classic examples of the gerrymander to warrant the Court's prohibition of unnecessary "deviations or sinuosity."[19] Some proposed districts crossed virtually half the width of the state,[20] while others consisted of discontiguous or marginally connected regions of the state and were ingeniously designed to place two incumbents of the same party in one district.[21]

The compactness or regularity of districts can be evaluated by a few simple measures relating area, perimeter, and maximum and minimum dimensions.[22] But while it may be necessary to prohibit grossly irregular districts, I would strongly argue against a simple and mechanical application of a compactness criterion. Requiring circular, hexagonal or square districts (the most compact forms) is meaningless if the reality of the transportation network makes travel easier and faster in a district of a different shape. Thus, a rectangular district three times as long as it is wide may be the shape which minimizes travel time for a particular population.[23] Similarly, some irregularity of shape may be justified because of the irregularity of topography and population distribution, or in order to maintain community of interest to ensure representation of ethnic or racial minorities. Further, compactness alone does not preclude gerrymandering because uniformly compact districts could be systematically arranged to waste

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19. Prince v. Kramer, Civil No. 9668 (W.D. Wash., Feb. 25, 1972). The Legislative proposals were an engrossed house bill, H.B. 747, 42d Wash. Legis., Reg. Sess. (1972) (the Republican plan), and a senate amendment to the house bill (the Democratic plan). The inability of the Legislature to reach a compromise evidently was tied to incompatible arrangements in Spokane and north Seattle. The House plan, for example, concentrated Democratic strength in one inner city district, while the Senate bill created a set of districts extending from city to county.

20. For example, in the Senate amended bill, the 13th District stretched from suburban Seattle in the west to beyond Moses Lake in the east, and the 8th District extended from Longview to east of Pasco.

21. In House Bill 747, for example, the 13th District, which combined Grant and Franklin counties, and the 39th District, which barely connected parts of Whatcom, Skagit and Snohomish counties, both placed incumbents of the opposition party together.

22. Roeck, *Measuring Compactness as a Requirement of Legislative Apportionment*, 5 MIDWEST J. POL. SCI. 70 (1961); Schwartzberg, *Gerrymanders and the Notion of "Compactness*," 50 MINN. L. REV. 443 (1966). A requirement of contiguity would constrain partisan manipulation and effective disenfranchisement. Yet theoretically it can be argued that some discontiguous areas with a common characteristic, such as a predominant Indian population, should be grouped together to assure some minority representation.

23. For example, in Washington State, population and transportation are often linearly arranged along certain rivers (as the Yakima, Lewis, and parts of the Columbia). Seattle's black population is likewise distributed in an oval-shaped, north-south pattern.

one party's votes by concentrating them in a few districts.[24] Although it has limitations, a compactness criterion nevertheless may be desirable where used to avoid unnecessary or unreasonable irregularity and to provide a safeguard against partisan manipulation.[25]

The third criterion, which strives to avoid dividing counties or cities, is unpopular with those who desire ideal, compact, distance-minimizing districts and recognize that their goal is frustrated by adherence to existing political boundaries. Following county and city boundaries clearly makes partisan gerrymandering difficult by restricting freedom to combine small census units. Further, preserving the integrity of counties is a real convenience[26] since much of the population strongly identifies with cities or counties and elections and the structure of voter precincts are normally county functions. However, inasmuch as the population of larger counties or cities rarely is divisible into an even number of districts, and since many city boundaries and populations are changing rapidly, strict adherence to the criterion is impractical.[27] On balance, the criterion is reasonable if expressed as a preference rather than a rigid requirement.

A geographer might be expected to be happy with a criterion that requires district boundaries to follow *natural geographic barriers* such as mountain ranges or major bodies of water.[28] Such a criterion, however, should not be rigidly applied. A river may be a unifying force within its basin rather than a barrier, and bridges across water bodies may be evidence of strong community of interest. Showing sensitivity to these factors in the Washington redistricting case, the court noted the barrier effect of both the Cascades and those parts of Puget Sound which are not linked by ferries or bridges.[29]

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24. DIXON at 458-99; A. HACKER, CONGRESSIONAL DISTRICTS (1966); Teshera at 178-86. For example, in a three-district region where party strengths are equal, one party could dominate two seats by arranging the districts so as to control 60 percent of two districts while letting opposition control 70 percent of the third district.

25. *See* text accompanying note 35 *infra*.

26. Hamilton at 16; Teshera at 85-92.

27. In the Washington redistricting case, the strict requirement of a maximum 1 percent deviation forced the division of several counties which could have remained intact in one district if there had been a 3 percent or 4 percent leeway. For example, the division of Pacific, Columbia, Grant, and Whitman counties would have been unnecessary.

28. Orr, *supra* note 3; Teshera at 69-78.

29. Prince v. Kramer, Civil No. 9668 (W.D. Wash., Feb. 25, 1972). The engrossed Senate bill, S.B. 747, 42d Wash. Legis., Reg. Sess. (1972), contained several districts which crossed the crest of the Cascade Mountains as well as unbridged bodies of water.

The criterion of *maintaining the integrity of cultural. groups* receives some support from geographers, sociologists, and political scientists, since these social scientists recognize the meaningfulness of cultural identification.[30] Although we might desire a more effective melting pot, many minority groups—blacks, Chicanos, Puerto Ricans, and to a lesser extent some ethnic groups—perceive spatial concentration and group solidarity to be an effective means of gaining political leverage. Deliberate dilution of such bloc voting on grounds of cultural integration would create a risk of severe frustration and unrest. However, in implementing this criterion by creating a district that is 55 percent black, one is in a crude sense disenfranchising the 45 percent who are white. Nevertheless it is important to remember that the larger portion of most minority populations are sufficiently dispersed so as not to constitute a voting majority in their districts, however the districts may be drawn.[31]

A desire to assure minority representation raises the more general question of whether districts should be more than arbitrary geometric collections of people, instead possessing some unity, meaning, or reality in the eyes of the resident. Recognizing that geographers have long been concerned with identification of objectively distinct regions,[32] it seems reasonable to suggest as a general criterion that each district should constitute the most meaningful region possible for those included therein. Unfortunately, this rational proposition currently is frustrated by two somewhat contradictory concepts of the proper definition of meaningful regions. The first, adopting the integrity of cultural groups criterion, holds that a region should be homogeneous or uniform with respect to factors such as income, occupational structure, land use, and racial or ethnic composition.[33] The second, generally preferred by political and economic geographers, argues that regions should possess functional unity:[34] for example, a region should encompass a small city as well as its economic hinterland or trade area; it should embrace both a large shopping center and the section of a city that it serves. Districts of homogeneous social

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30. Hamilton at 47-48; Orr, *supra* note 3, at 75-90; Teshera at 92-100.
31. Examples include American Indians, Japanese-Americans, and, except in the largest cities, blacks.
32. Grigg, *Regions, Models, Classes,* in MODELS IN GEOGRAPHY (R. Chorley & P. Haggett eds. 1967); Teshera at 18-49, 101-17.
33. Orr, *supra* note 3, at 75-90; Teshera at 19-36, 92-117.
34. *Id.*

and economic character tend to embody a community of interest which stimulates homogeneous voting patterns. Considered to be safe, such districts usually have long-term incumbents who presumably reflect the views of the majority of the constituency and offer an arguably desirable stability of representation. Districts of a functional character tend to be more economically and socially diverse, although united by strong patterns of interaction. Such districts are considered to be swing districts which elect few long-term incumbents. To maximize responsiveness to the voter, one may argue that it is desirable to create as many swing districts as possible. Attempts to create districts which are both functional and culturally homogeneous areas arguably should produce regions which are fairly meaningful to the residents while providing a mix of safe and swing districts.

As indicated above, it is theoretically possible to form districts which meet equal population and compactness criteria yet reflect systematic bias in favor of one party by concentrating opposition strength in as few districts as possible. The history of gerrymandering suggests that a criterion of *political balance* is plausible.[35] Simple tests of imbalance are available, such as comparing a party's portion of the total vote with that party's proportion of elected representatives.[36] Given observed concentrations of party loyalty,[37] achieving political balance in Washington would mean that perhaps as much as one-half of the available seats are likely to be consistently partisan, while the others are likely to be swing seats of inconsistent and uncertain political complexion. However, the court in *Prince v. Kramer*[38] was wise in not formally recognizing the political balance criterion. To do so would have increased tremendously the effort of redistricting due to the need to analyze several sets of election returns for areas generally incompatible with census population units.[39] Any person is free to at-

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35. DIXON at 485-99; Hamilton at 30-31.
36. Another test is comparing the coefficients of concentration, which measure the degree of divergence from equal or proportional strength within districts.
37. For example, in Washington State, although party loyalty is rather weak, inner city districts and rural areas dependent on forest products tend to be safely Democratic districts, while suburban areas and rural areas with large-scale agriculture tend to be safely Republican.
38. Civil No. 9668 (W.D. Wash., Feb. 25, 1972).
39. Precinct boundaries rarely correspond to census enumeration district boundaries. The Senate Amended House Bill, H.B. 747, 42d Wash. Legis., Reg. Sess. (1972), extrapolated precinct populations and had to be redefined in terms of census units.

tack a redistricting plan believed to be systematically partisan.[40] If all political variables are proscribed, however, as in the Washington case, then the expectation is that districts constructed on the basis of population and location will turn out to be politically balanced—that is, an equal number of districts will be biased in each direction. This expectation was fulfilled by the new Washington apportionment.[41]

The question of who should carry out reapportionment raises some problems of a different sort.[42] Although ideally the Washington court should not have been compelled to be responsible for reapportionment nor should one person have prepared the plan, extreme urgency compelled imposition of severe constraints.[43] Nevertheless, although it is absurd and unfair to expect a body like a legislature to redistrict itself easily or objectively, the Washington State Constitution gives this responsibility to the legislature.[44] One solution would be for the Legis-

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40. While some state courts have granted relief from obviously partisan plans, the United States Supreme Court has never done so. Systematic disenfranchisement on the basis of race, however, has been disallowed. Fortson v. Dorsey, 379 U.S. 434 (1965); Wright v. Rockefeller, 376 U.S. 52 (1964). *See* DIXON at 510-20.

41. The Washington plan was attacked on the basis of political imbalance. For example, a Spokane city district tended to concentrate Democratic strength. However, the redistricter had no knowledge of this concentration when the plan was drawn, and it appears there was an equal number of districts for each of the two parties. The obvious political goals of minimizing loss of incumbents and achieving partisan advantage can hardly be avoided when the Legislature undertakes to redistrict itself. If the task becomes the responsibility of the judiciary or an independent commission, then these criteria are inappropriate. However, arguably, some effort should be made to minimize changes in districts once they have been established. To the degree that voters identify with a given district and participate in the political process with respect to issues of significance to that district, it may be desirable to avoid unnecessary alteration of the political map.

42. DIXON at 363-79; Hamilton at 49-55. It is possible to argue that human bias can be avoided by reliance on a computer, but some bias is unavoidable in programming the computer and selecting the data. Although a computer may have been able to provide fairly good plans for congressional districts (only seven exist in Washington), it could not produce a comparable plan for state legislative districts (forty-nine in Washington). As a specialist in precisely this kind of computer programming, I believe that the computer should be viewed mainly as an aid to a solution rather than as the solution itself. Since very few local variables can be considered by an operational computer program, computer solutions tend to be too simple. *See* DIXON at 527-34; Gearhart & Liittschwager, *Legislative Districting by Computer,* 14 BEHAVIORAL SCI. 404 (1969); Hamilton at 96-124; Hess & Weaver, *Nonpartisan Political Redistricting by Computer,* 13 OPERATIONS RESEARCH 998 (1965); Nagel, *Simplified Bipartisan Computer Redistricting,* 17 STAN. L. REV. 863 (1965); O'ROURKE at 73-98; Savas, *A Computer-based System for Efficient Electoral Districts,* 19 OPERATIONS RESEARCH 135 (1971).

43. Familiarity with the State of Washington enabled me to redistrict Washington within the one month allotted for the actual redistricting effort. Out of state consultants, although perhaps unbiased, would have had great difficulty in forming districts which were meaningful to the residents within the time available.

44. WASH. CONST. art. II, § 3.

lature to delegate this responsibility to a commission, reserving for itself only the power to accept or reject the plan or suggest modifications. More drastically, the task could be assigned to the state supreme court or a special outside bipartisan commission perhaps appointed by the Governor or the state supreme court. It could consist of four members, evenly split between the parties, and might include one geographer, one political scientist, one sociologist/demographer and one planner: the first, for his professional concern with regions and familiarity with maps and census material; the second, for his general knowledge of political behavior; the third, for his concern with social grouping and population characteristics; and the last for his experience with practical applications of theories and principles. Requiring these four to agree unanimously on any plan would, I think, guarantee a quality plan.[45]

To summarize, I would recommend (1) a slight relaxation of the equal population criterion to perhaps 3 percent (at least for legislative districts); (2) retention of compactness, integrity of counties and cities, and natural geographic barrier criteria to be applied without excessive rigidity; (3) a meaningful region criterion, again avoiding inflexible application; and as a lesser priority, (4) a minimization of unnecessary changes in present district form.[46] A political balance criterion is reasonable in evaluating a plan, but is impractical in preparing a plan.

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45. A few bills were introduced into the 43d Legislature in 1973 suggesting a bipartisan redistricting commission, which would act either initially or after a defined period in which the Legislature could consider redistricting. S.J. Res. 125; H.B. 709; H.J. Res. 23, 43d Wash. Legis., Reg. Sess. (1973).

46. See note 41 supra. In redistricting Washington, I sought to minimize the number of voters switched to new districts. This objective was obviously hindered by the dramatic changes in population between 1960 and 1970 which required the shifting of two legislative districts from eastern to western Washington, elimination of two districts in the central city of Seattle, and creation of four districts in the suburban areas surrounding Everett, Seattle, and Tacoma.