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IN THE SUPREME COURT OF THE STATE OF CALIFORNIA

JULIE VANDERMOST,

GEORGE RADANOVICH, ET AL.,

Petitioners,

v.

DEBRA BOWEN, SECRETARY OF STATE OF CALIFORNIA,

Respondent,

CITIZENS REDISTRICTING COMMISSION.

Real Party in Interest.

Filed Pursuant to Cal. Const., Art. XXI, § 3(b)(1)
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APPENDIX OF SECONDARY SOURCES

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TAB 1

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Yale Law and Policy Review
1991

Overview: Electoral Reform

*301 THE THIRD CRITERION: COMPACTNESS AS A PROCEDURAL SAFEGUARD AGAINST PARTISAN GERRYMANDERING

Daniel D. Polsby [FNd1]

Robert D. Popper [FNdd1]

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> The health of democracies, of whatever type and range, depends on a wretched technical detail—electoral procedure. All the rest is secondary. [FN1]

In the aftermath of the decennial census, reapportionment and its wayward stepchild gerrymandering have again become topics of the hour. In 1991 or 1992, based on the new census, state legislatures will establish new boundaries for congressional and state legislative districts. [FN2] In order to conform to the constitutional mandate that districts have equal populations [FN3]—"one person, one vote" [FN4]—states will have to redraw district lines to account for population shifts that have accumulated over the past ten years. Yet reapportionment, made necessary by fidelity to democratic principles, also will bring with it gerrymandering. Gerrymandering, broadly speaking, is any manipulation of district lines for partisan purposes. [FN5] There are different varieties of gerrymandering, including racial gerrymandering, [FN6] remedial racial gerrymandering, [FN7] and collusive bipartisan gerrymandering. [FN8] Partisan gerrymandering, the most common kind ***302** and the subject of this paper, is undertaken by the political party in control of a state legislature to help itself and injure its competitor.

It should not be surprising that redistricting is the occasion for so much gamey partisan brawling, for in the districting game legislators are fighting for their own political lives and that of their party, just as surely as in an election campaign, but with more durable results. Depending on how district lines are drawn, a party with only a minority of the popular vote can assert control over a majority of seats in the state assembly and over its state's delegation to the national House of Representatives. More typically, a party that enjoys only a small majority in popular support over its principal competitor will, through its control of the districting process, translate this popular edge into preemptive institutional dominance.

Potential remedies for gerrymandering, as Bernard Grofman has pointed out, come in two varieties: political and formal. [FN9] A political remedy, for example, might require that a redistricting plan satisfy a panel of bipartisan commissioners, or that it be adopted by a supermajority of the legislature. The remedy we propose is formal. In addition to adhering to criteria which mandate that representational districts be composed of contiguous territories and have equal populations, we suggest that those who define district boundaries must also be required to respect a third criterion, the constraint of compactness.

Without the ability to distend district lines so as to include or exclude blocks of voters whose political loyal-

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ties are known, it is not practically possible to gerrymander. The diagnostic mark of the gerrymander is the non-compact district. Anyone who eyeballs a few legislative district maps quickly will learn to recognize gerrymanders, although admittedly with imperfect accuracy. But one need not rely on seat-of-the-pants reckoning to find the sort of noncompactness that implies gerrymandering. A number of mathematical measures of compactness exist, some of which are no more difficult to apply than the "one person, one vote" standard of Reynolds v. Sims. [FN10] These measurements are useful because they correspond closely to a mapmaker's practical ability to gerrymander districts. One of these compactness measures, as we show in part III.D, is the best way to measure the kind of non-compactness that is required for a workable gerrymander.

***303** I. Gerrymandering and Politics

At the time of Elbridge Gerry, the eponymous gerrymanderer, [FN11] and for almost 200 years until Baker v. Carr, [FN12] abusive partisan districting was a relatively simple matter because there was no constitutional requirement that districts be equinumerous. [FN13] Malapportionment was so powerful a tool for diluting the opposition's votes that partisans needed no other. [FN14]

With the advent of "one person, one vote" and periodic reapportionment, the focus of partisan districting changed. Creative gerrymandering now has replaced the older strategy of malapportionment through legislative inaction. Although districts must be equal in population, they need not have any particular shape or character, and they still may be manipulated to suit partisan needs. Happily for partisans, the apportionment revolution coincided with technical innovations in computers and in market research that made modern gerrymandering both easy and effective. [FN15] Professional advice on effective gerrymandering is now a staple of the political consulting business. [FN16]

The techniques for gerrymandering are simple and widely understood. In single-member districts, only one legislator can win an election. Any support beyond fifty-percent-plus-one is therefore superfluous, or, from the party's point of view, "wasted." The partisan mapmaker seeks to draw lines which concentrate the opposition's electoral support in just a few districts (called "packing" or "stacking"), while at the same time creating many more districts ***304** where his own party commands a smaller, but still safe, majority ("cracking"). [FN17] The net result is that many more of the opposition party's supporters have their votes squandered by being thrown into contrived landslides. The gerrymandering party can thus win more seats in proportion to its electoral support than it would if the district lines were drawn without regard for partisan considerations.

In this section we show how gerrymandering is a real danger, an injury to the practice of constitutional democracy. As part of this project, we examine whether gerrymandering as an illicit activity really exists apart from the legitimate give-and-take of partisan politics. In the process, we are led to a definition of the intent to gerrymander.

A. Gerrymandering and Political Theory

Gerrymandering inflicts harm on democratic institutions, although this harm is easier to characterize than to prove. For example, while it is reasonable to suggest that constituents are not accurately represented by a gerrymandered legislature, those who believe this assertion (we include ourselves) must take it on faith, for we know of no way to prove it. Indeed, there is no generally accepted theory of how a legislature is supposed to reflect its constituents' interests and values. [FN18]

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There are better ways, however, to frame the political-theoretical argument against gerrymandering. Gerrymandering violates the American constitutional tradition by conceding to legislatures a power of self-selection. Self-constitutive legislatures, or self-constitutive governing institutions of any kind, make no sense under a Constitution whose most arresting innovation was the dispersion of power. Legislatures are legislatures not because they say they are (any "body" can make that claim) but because a constitution says they are. [FN19] To be sure, there is nothing specific in the Constitution that forbids gerrymandering, any more than there is specific language that forbids the excessive, unfair, or abusive exercise of any delegated power, but the very idea of democracy ***305** that is embedded in the Constitution certainly forbids legislatures from insulating themselves from the popular will. [FN20] The members of a partially self-constituted legislature depend to a degree upon one another rather than upon their constituents for their tenure in office. Whatever "representation" means, it cannot possibly mean that.

Thus Martin Shapiro has aptly described gerrymandering as a "pathology of democracy." [FN21] Gerrymandering introduces a chronic, self-perpetuating skew into the business of popular representation, no matter how the term is defined. A perversion of democratic procedure, the problem resists correction by democratic means. [FN22] Those in control of the districting process can gerrymander the opposition into electoral irrelevance. [FN23] In the final analysis, then, "the pathology of democracy problem is so overwhelming that—for most Americans of good will, including those who happen to be judges—it overcomes***306** judicial role and capacity problems. Gerrymandering is a bad, bad thing. And there is nobody around to fix it except the courts." [FN24]

Effective gerrymandering is a special threat to the Madisonian version of constitutional democracy because of the way it affects the system of single-member district representation. The strategies for electoral success in single-member districts are quite different from those that apply to multi-member districts. In a single-member district, the dominant strategy is to acquire the support of a majority of voters, those who cluster near the "middle" of the political spectrum. Multi-member districts, where a candidate can win by coming in second or fifth or twenty-fifth, depending on how many candidates may be elected from the district, allow the election of candidates whose views are on the fringe, even the extreme fringe of the electorate. The characteristic of single-member districts that gerrymandering seeks to defeat is the tendency of such districts to "center" the political debate.

In single-member districts, political factions that wish to be politically influential have an incentive to compromise their differences. Robert A. Dahl has summarized the Madisonian argument:

> If a faction consists of less than a majority, it can be controlled by the operation of [what Madison called] "the republican principle" of voting in the legislative body, i.e., the majority can vote down the minority ... [[[[while the] development of [a] majority faction can be limited if the electorate is numerous, extended, and diverse in interests. [FN25]

Generally, one-issue fanatics who do not move towards the political center will tend to be ignored. [FN26]

In contrast, a multi-member system amplifies local differences. Factions rather than coalitions will send representatives to the assembly, to struggle for their factious enthusiasms undiluted by the need for compromise. The political attitudes of the membership will have greater variance than a Madisonian assembly, and a greater potential for fragmentation and paralysis because of the wide gulf that will lie between the extremes. [FN27] Voters in multi-member districts have one advantage over their counterparts in single-member districts in that they are more likely to have the opportunity to vote for a candidate whose views, in priority and intensity, nearly approximate their own.

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A single-member district system that is gerrymandered, however, possesses the worst aspects of both Madisonian democracy and proportional representation. It is even less proportionally representative of the voters than an ordinary ***307** single-member district system, which always contains a natural skew against minorities. [FN28] At the same time, the beneficiaries of gerrymanders, less needful of forming local coalitions or making compromises to assure their success, are also less needful of being near the political center of their districts. They are, in brief, more likely to be ideologues. [FN29] The district system has always been something of a balancing act, seeking to afford minorities protection from the domination by the majority that occurs under statewide electoral systems, while also seeking to preserve the benefits of majority rule. [FN30] Gerrymandering strips minorities of the protections that districts were meant to provide.

Despite its apparent problems, gerrymandering has had defenders. Peter Schuck, although not quite a friend of the practice, has suggested that gerrymandering in some of its aspects could actually benefit democracy because it "reinforce[s] the majority party's capacity to govern alone, making it easier to attribute responsibility for political acts," and thus furthers the goal of party accountability. [FN31] Admittedly, governability and accountability are good things, but they cannot be defended without reference to fair process. It is no defense of rigged elections to say that at least they have decisive outcomes. Stuffing ballot boxes, or enlisting squads of goons to intimidate voters, also reinforces "the majority party's capacity to govern alone," and makes it "easier to attribute responsibility." Nor does it much advance the argument for gerrymandering to argue, as Schuck does, that the practice is hard to do effectively and that it may backfire. [FN32] True enough—and equally true of stuffing ballot boxes and ***308** hiring goon squads, as Ferdinand Marcos and Anastazio Somosa found out to their sorrow.

It is confusing to say both that gerrymandering may be a good thing, and that, luckily, it is rarely successful, but if gerrymandering is a pathology of democracy, either assertion is beside the point. Also spurious is the implication that the practice of partisan gerrymandering is somehow "fair" because both parties do it and thus, over time, its effects will wash. [FN33] Democratic ballot box stuffing in Chicago is not meaningfully cured by Republican ballot box stuffing downstate. Ballot box stuffing is contrary to democracy, whether or not it affects the outcome of this or that election and whether or not both parties practice it. If gerrymandering is similar, then the remedy can hardly be more gerrymandering.

Some commentators belittle the real-world impact of gerrymandering on American politics, [FN34] but if gerrymandering is an antidemocratic practice it should not matter that its impact is transient or cannot be firmly quantified. To be sure, a gerrymander's impact rarely can be segregated from the pull of countless other factors, such as personalities, local issues, current events, incumbency effects, and media leanings, that sway—or supposedly sway—elections. [FN35] But this point cuts both ways. Gerrymanders may well be more effective than we imagine. An effective gerrymander may discourage minority-party voters from even going to the polls. Further, a majority party, its power swollen by effective gerrymandering, controls legislative committee chairs and committee agendas, which can be manipulated to amplify its electoral dominance. A candidate who wins one election because of gerrymandering will thereafter enjoy the "non-gerrymander" benefits of incumbency and enhanced name recognition. [FN36] Thus, while gerrymanders as such may rapidly decay because of the mobility of the population, the fruits of gerrymandering may well decay much more slowly. Finally, it successfully forces opposition incumbents to run against one another in a newly merged district, a gerrymander may set off intraparty dissension that further debilitates the minority party at the polls.

***309** The question whether gerrymandering is good or bad democratic practice simply cannot be avoided, either by invoking the possibility that gerrymandering might not matter (because it also might) or by shifting the

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burden of proof to its detractors to quantify its harm. If gerrymandering is a pathology of democracy, polite electoral fraud, as we argue below, its friends must defend it as a good thing.

B. Gerrymandering and Partisanship

Most scholars who have noticed the gerrymandering problem argue that courts should not attempt to do anything about it. The arguments have two basic themes, although authors often interweave elements of both. One approach holds that there is no judicial antidote for gerrymandering for the most fundamental reason, namely that it has no independent existence, but is merely a sore loser's epithet for a redistricting argument that he lost. Another approach concedes that gerrymandering exists and is a problematic activity, but argues that the intent to gerrymander is indistinguishable from the intent to obtain partisan political influence or power generally.

No one seriously doubts that gerrymandering, and plenty of it, has been going on for years. Politicians most likely gerrymander whenever they can, and they are often disarmingly unselfconscious about admitting it. [FN37] They hire the most clever consultants money can buy, who well understand the game they are playing and the risks and rewards of playing it. [FN38] The dispute over the existence of gerrymandering is concerned with a deeper problem, which cannot be dismissed without analysis. It is possible to characterize gerrymandering as an optical illusion, something in the eye of the beholder that, upon deeper ***310** appreciation, does not really exist. It is, on this argument, unrealistic to speak of "fair" or "neutral" political ground rules. Such rules are never neutral; in a hackneyed evocation, everything is politics. Thus Professor Michael Moore's suggestion that gerrymandering may be like Gertrude Stein's Oakland: "there's no there there." Judge Abner Mikva found a familiar way to encapsulate this sort of skepticism when he said that gerrymandering is "somewhat like pornography. You know it when you see it but it's awfully hard to define." [FN39] Just as there are some liberated (or libertarian) souls who claim never to have seen "pornography," there are people who claim never to have seen gerrymandering.

Robert Dixon once remarked that "all districting is gerrymandering." [FN40] As he said elsewhere:

> The key concept to grasp is that there are no "neutral" lines for legislative districts. Whether the lines are drawn by a ninth-grade civics class, a board of Ph.D.'s, or a computer, every line drawn aligns partisan and interest blocs in a particular way different from the alignment resulting from putting the line in some other place. [FN41]

It is not just that the choice of one districting plan over another is necessarily partisan. Equally partisan are choices concerning districting methods or criteria, because these always tell something about the choice between plans. Every districting method helps someone at least to the extent of hurting someone else. Because districting criteria are inevitably "non-neutral" in the sense that someone will always benefit, it is naive at best to try to segregate gerrymandering from other ways of drawing district lines.

Daniel Lowenstein and Jonathan Steinberg have taken this argument to its logical extreme. "[T]here are no coherent public interest criteria," they say, "for legislative districting independent of substantive conceptions of the public interest, disputes about which constitute the very stuff of politics." [FN42] In other words, every "neutral" criterion overtly or covertly imports a view about who ought to exercise power. Any set of rules regarding any part of the conduct of elections will necessarily dispose toward a particular set of winners and losers.

It is mistaken to assert that a "neutral" rule must disregard outcomes. Rules are neutral, as most people understand that term, even though their application determines a winner. (The rules of baseball are neutral in this

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sense, although ***311** they favor the teams with the "best" players.) A rule that calls the person who gets the most votes in an election the "winner" is ordinarily thought of as neutral, even though it favors popular over unpopular candidates. "Neutral," as applied to districting rules, as well as the other rules governing elections, means according to generally accepted ideas of procedural fairness—in other words, that the person who did win, should have won, with "should" drawing its meaning from precisely the democratic ideas that are instantiated by holding elections in the first place. The fact that we will never fully define terms like fairness or neutrality does not diminish their utility. [FN43] As Martin Shapiro has noted, "decision makers often do, and indeed often must, move away from a wrong position without being able to specify precisely what ideal position they are moving toward." [FN44]

Lowenstein and Steinberg's own argument shows how difficult it is to hide from the legitimate power of "neutral" rules. They have some of their own, though they change the name to protect their innocence. What other people might call "neutral" procedural rules, they call "pre-political." By this term they mean "to describe procedures and values that govern the democratic system within which substantive political conflicts occur and are worked out." [FN45] But if it is conceded that a set of pre-political ground rules exists, why should the rules of districting be in principle excluded from it? [FN46]

Peter Schuck makes the case that gerrymandering is like any other "victory bonus" conferred upon a majority party by winning at the polls. [FN47] In this view, gerrymandering should be no more offensive than such "bonuses" as "patronage, logrolling opportunities, the opportunity to organize the legislative chamber, the financial and other advantages of majority status," all of which create a "power-enlarging effect." [FN48]

Gerrymandering, however, is a victory bonus with a difference. All of the other "bonuses" that accrue to the victor serve a purpose other than pure electoral aggrandizement. Patronage, for example, is one of two methods for organizing a bureaucracy (the other is via an independent civil-service organization) and the patronage system has the advantage of ensuring some level of responsiveness. Officials who can be removed at will have an extra incentive to please their bosses, who in turn have an incentive to please the constituents who elect them. Similarly, it is hard to imagine an alternative, legitimate method to organize the legislative chamber apart from majority vote. Each of ***312** these activities, unlike gerrymandering, is necessary to conducting legislative business. [FN49]

A more general problem with Schuck's categorization is that it wrongly groups together "victory bonuses" which differ widely with respect to costs, benefits, and the potential for cure. All "victory bonuses" are not created equal. Even parties entitled to the "victory bonus" of patronage appointments are bound by the rule in Elrod v. Burns, [FN50] which forbids the patronage-motivated dismissal of non-policymaking government employees. Nor can one doubt that if a majority party sought to reap its "victory bonus" by barring members of the minority party from all committee assignments, or from a franking privilege thitherto enjoyed by every member, or from collecting travel expenses when members of the majority were entitled to do so, courts would probably, and rightly, find a rationale for intervening. [FN51]

The single-member district system itself is Schuck's most vivid example of a "non-justiciable victory bonus." As has long been recognized, this system inflates the majority party's influence in the legislature beyond what its popular support warrants, by a factor inversely proportional to the size of its margin of victory. [FN52] According to Schuck, it "is difficult to see how one can maintain a fair representation argument against partisan gerrymandering without at the same time challenging single-member/plurality-vote districting.... Like a partisan gerrymander, [it] rejects proportionality in favor of a victory bonus for the majority party." [FN53]

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Again, Schuck avoids any realistic cost/benefit analysis of the "victory bonus" at issue. The choice of a single-member district system can be defended ***313** on grounds independent of the current content of partisan politics. A district system protects minority parties from the domination of statewide majorities that can occur in at-large elections. [FN54] This principle may not embody the spirit of pure populist democracy, but it is an easily defensible goal in structuring a democracy. [FN55]

Nevertheless, it is even possible that this issue could become justiciable if, for example, a legislature shifted back and forth between multi-member and single-member districts for no apparent reason other than frustrating the minority party. There is a pronounced difference between the decision to continue to maintain a single-member district system on the one hand, and the decision to gerrymander a legislature on the other. Most legislators probably support the single-member district system because they prefer it as a democratic form. Perhaps they support it only because things have always been done that way and, while they have not thought about it much, they vaguely suspect that good democratic reasons could be educed to uphold it. But they support gerrymandering for a different reason altogether: to spare themselves (and their party) the burden of having to win elections by winning over voters.

C. The Undemocratic Intent to Gerrymander

How may gerrymandering be described so as to distinguish it from legitimate partisan activity? Gerrymandering cannot be described purely by its manifestations. A district map may look gerrymandered, but its wandering district lines may have a nonpartisan explanation. They may even have been drawn by the most outcome-disregarding criterion imaginable, the random walk of a computer program. Nor may illicit districting be defined solely in terms a disparity between votes cast and seats obtained, or in terms of "wasted" votes, as these phenomena are common to all elections.

The additional element that gives gerrymandering its illicit character is intent. It is one thing for a phenomenon to exist by necessity, and quite another for someone to distribute or redistribute it selectively. For example, we know that in any election a certain number of ballots will be lost, miscounted, or spoiled, but that is no justification for someone intentionally miscounting or spoiling ballots. The element of intent turns a misfortune into a crime. The same is true when a legislature arranges for someone's vote to be wasted.

The crux is thus to define the intent to gerrymander in a way that distinguishes it from unobjectionable partisan aspirations like the intent to win ***314** elections or to form a legislative majority. Such a distinction emerges from considering how gerrymandering works. A gerrymanderer sets out to waste the votes of the opposing party, [FN56] in other words, to render ineffectual the votes of certain voters in an election. Voters are selected, based on how they have voted in the past and how they are likely to vote, for inclusion in a minority bloc within a district. The gerrymanderer's sole purpose in doing this is to increase his party's odds of electoral success.

The desire to be elected is harmless enough, but how one gets elected is hardly a matter of indifference, any more than one is indifferent whether a student's high mark on an exam was the product of hard study or cheating. In a democracy, parties are supposed to gain political power by persuading voters to vote for them. Paradigmatically, such persuasion takes the form of non-coercive, rational appeals to the public interest and common welfare. Everyone appreciates that this paradigm is far from reality, that appeals to the electorate are often selfish, sometimes downright unpleasant, and that few voters pay much attention to the larger demands of republican consciousness. Still, persuasion is, and should be, the preferred method of getting elected. Indeed, the ex-

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tent to which any other method is used is the extent to which the process is undemocratic. To elect, after all, means to choose.

Gerrymandering is a purely mechanical manipulation guided by the probabilistic choice tendencies of given cohorts of voters. It is thus opposite in spirit and in practice to the "rational persuasion" paradigm of getting votes. Gerrymanderers engage in no appeal of any kind; indeed, their purpose is to eliminate the need for any appeal. In a democratic society, at least of the American variety, intending to gain power by some method other than appealing to voters is prima facie wrong.

Thus, intent to gerrymander is the intent to do something undemocratic. [FN57] Indeed, it takes an heroic obtuseness to view gerrymandering in any other light. "Gerrymander" belongs to the class of terms which William Safire calls "attack words," and is always used polemically as a way to discredit the ***315** opposition. [FN58] Ordinary voters believe that gerrymandering is one of the ways that scheming politicians frustrate the popular will. [FN59]

Ordinary voters are right. The most obvious purpose of a gerrymander is to diminish the political efficacy of certain voters' votes. The minority party's votes are that much less likely ever to influence elections. Politicians have that much less need to pay attention to the views of voters whose franchise has been attenuated. A person ought to be entitled to complain, for the sake of the political community, if not for the integrity of one's own vote, if someone has manipulated the lines on a map in order to make the outcome of an election a foregone conclusion.

Any voter's vote is asymptotically meaningless, in the sense that virtually never can one say that an individual's vote changed the outcome of an election, but this fact does not show that gerrymandering is harmless. [FN60] A vote cannot be valued according to its probability of determining the outcome of an election. As Paul Meehl has argued, a vote is not an economic or utilitarian object because it is extraordinarily unlikely that any person's vote will ever determine the outcome of an election—indeed, it is morally certain that it will not. [FN61] "Nobody is going to pay any attention to the last digit in a six place number for the state of Minnesota's popular vote for the President, especially as we all know that the voting machines and tabulations will contribute error larger than that." [FN62]

In that case, why bother to vote? [FN63] The justification for voting cannot (in Meehl's terminology) be "act-prospective egocentric," that is, utilitarian self-interested. [FN64] Rather, it must be "axionomic and sociotropic," that is, a gesture embodying a statement of preference about a way of life based on a purely ethical norm. [FN65] A vote is a form of self-expression, a means to affirm the philosophy of popular sovereignty. It is a symbolic act of power. That is ***316** why we ought not feel foolish casting a vote for a candidate we are sure will lose. [FN66]

A gerrymander not only decreases the actual power of voters, making their votes that much less of a "live" threat to public officials, but more importantly, it muffles the expression that a vote embodies. Because that is their aim, gerrymanders become potent symbols in their own right. To the extent that gerrymandering is accepted as a sanctioned part of partisan politics, it is a public declaration that it is proper for the legislature to manipulate the constitutive rules by which legislatures themselves are defined.

II. Gerrymandering as a Constitutional Violation

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Even if we concede that gerrymandering exists and that it is probably a bad thing, we still must address the issue of the propriety of judicial intervention. Commentators who oppose the justiciability of gerrymandering argue that the difficulties involved in identifying it make curing it impractical; or that even if gerrymandering can be identified, fixing it would only bring worse evils in train, such as requiring judges to perform a crucial regulatory function at the heart of the political process. [FN67] Others doubt that gerrymandering can be said to violate any constitutional right. [FN68]

These objections to implementing an antigerrymandering principle will be familiar to students of constitutional law, for the objections track the arguments made by Justice Frankfurter in Baker v. Carr. [FN69] Although this opinion recorded one of the most compelling arguments ever made against judges entering political thickets, it was a dissent, and as a matter of constitutional doctrine, it has been left far behind. Ironically, a number of scholars who accept the "political thickets" argument with respect to gerrymandering reject that same argument in connection with malapportionment and agree with the holding of Baker. Yet as we shall see, the distinction between malapportionment and gerrymandering is neither conceptually nor practically great. Indeed the apportionment cases provide the ideal conceptual framework for defining gerrymandering as a constitutional violation. A consideration of these issues begins with the Supreme Court's first attempt to deal with the problem.

***317** A. The Standard of Davis v. Bandemer

In Davis v. Bandemer, the Supreme Court held that claims of partisan gerrymandering are justiciable as violations of the Equal Protection Clause of the Constitution. [FN70] The court relied on the notion advanced in Reynolds v. Sims [FN71] that a denial of "fair representation" can be a basis for a constitutional claim, and on Gaffney v. Cummings, [FN72] in which the Court reached the merits of a claim that the Connecticut legislature had constructed a bipartisan gerrymander. [FN73] Six justices in Davis joined the holding that gerrymandering claims were justiciable. [FN74] Regarding the specific claim that Indiana's House of Representatives had been gerrymandered, a plurality held that the appellees, Indiana Democrats, had failed to make the required showing of discriminatory vote dilution. [FN75] The Court reached this conclusion in the teeth of some fairly incriminating evidence, both circumstantial and direct, that pointed to discriminatory intrigues: although Democratic candidates received almost 52% of the vote statewide in House races in 1982, they only won 43 of 100 seats; and in two counties where Democratic candidates won 46.6% of the vote, they won only 3 of 21 House seats. [FN76]

In assessing the claim of political gerrymandering, the plurality applied a standard which originally had been used in race-based challenges to multi-member districts. [FN77] In those cases, a constitutional cause of action arises where there is harm to an excluded group's "opportunity to participate" [FN78] in the "political process as a whole." [FN79] Under Davis, justiciable gerrymandering claims include those brought by members of a political party as well as by members of a minority race. [FN80] The plurality made it clear that a claim of gerrymandering must be based upon more than a mere lack of proportional representation: "a finding of unconstitutionality must be supported by evidence of continued frustration of the will of a majority of the voters or effective denial to a minority of voters of a fair chance to influence the political process." [FN81]

***318** There can be no quarrel with the proposition that a lack of proportional representation is not, without more, an adequate basis for judicial intervention in the districting process, but the plurality's approach to gerrymandering is flawed as a matter of Fourteenth Amendment law, and, partly as a result, is unworkable in practice. The problem is in how the plurality sought to adapt the law of racial discrimination to gerrymandering cases. In Fourteenth Amendment race cases, complainants must establish the discriminatory intent behind the practice that they challenge. In order to make proof of discrimination realistically possible, the Court has permitted evid-

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ence of the discriminatory "effect" or "impact" of a practice to serve, not as an independent basis for finding a violation, but as indirect evidence of discriminatory intent. [FN82]

Yet in Davis v. Bandemer, the Court made a threshold showing of discriminatory "effect" an independent, required element of a constitutional claim of gerrymandering. [FN83] By altering the traditional secondary role of effects evidence, the Court turned its Fourteenth Amendment jurisprudence almost upside down, and at the same time made a constitutional violation practically impossible to prove. The plurality seemed painfully aware of the innovation: "Although this opinion relies on our cases relating to challenges by racial groups ... nothing herein is intended in any way to suggest an alteration of the standards developed in those cases for evaluating such claims." [FN84] And elsewhere: "We do not contemplate that a similar requirement would apply to our Equal Protection cases outside of this particular context." [FN85] Justice Powell separately wrote that the effect standard had always been used as a proxy: "The plurality wholly ignored the basic problem underlying ... prior [equal protection] decisions, namely, that the plaintiffs came into court with no direct proof of discriminatory intent." [FN86]

***319** The plurality compounded the problem for plaintiffs by failing to supply a definition of the apparently critical term "effects." The Court dismissed as mere evidence of intent, factors which could be seen as the effects of gerrymandering, such as "the shapes of the districts and their conformity with political subdivision boundaries; and 'evidence concerning population disparities and statistics tending to show vote dilution' "; [FN87] though it later admitted, incongruously, that such factors may be "relevant to a showing of the effects." [FN88] Even more surprising, the Court was ambivalent about the probative value of the factor which most would consider the primary effect of gerrymandering, namely, skewed electoral results.

The plurality admitted that electoral results are relevant to a showing of effect, [FN89] but it insisted that an unconstitutional plan is one which will "consistently degrade" voters' influence, [FN90] and it emphasized that "[r] elying on a single election to prove unconstitutional discrimination is unsatisfactory." [FN91] Given the relevance of election results, one would suppose that some measure of proportional representation, albeit over more than one election, would therefore be the test for gerrymandering. [FN92] Yet the plurality seemed to spurn this approach as well, criticizing Justice Powell's dissent on the grounds that he would allow a violation "where the only proven effect on a political party's electoral power was disproportionate results in one (or possibly two) elections." [FN93]

What, then, establishes the effect of gerrymandering? Disproportionate results over three elections? The one constant in the Davis Court's analysis is the requirement that the plaintiff show that a political party has been denied the opportunity to "participate in" or "influence" the "political process as a ***320** whole." [FN94] In the context of gerrymandering, this test is virtually impossible to meet. First, gerrymandering always involves creating a few districts where the opposition party is sure to win, which forecloses an argument by plaintiffs that they have been completely excluded from the political process. Second, one of the nation's two major political parties may never have been so continuously disadvantaged as to have suffered the requisite "historical patterns of exclusion from the political processes." [FN95] After all, even Chicago has some Republican alderman. Gerrymandering claims, while justiciable in principle, would in practice never succeed on the merits. [FN96]

Applying its test to the Indiana Democrats, the Court noted that the "District Court did not find that because of the 1981 [districting] Act the Democrats could not in one of the next few elections secure a sufficient vote to take control of the assembly" or that "the Democrats would have no hope of doing any better in the reapportionment that would occur after the 1990 census." [FN97] Hence, even the possibility of success at the polls can

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forestall a claim of gerrymandering.

It is an indictment of the Davis plurality's test that it provides no incentive for gerrymanderers to do anything differently. [FN98] A partisan mapmaker will still gerrymander as much as possible. The challenger must then embark on a fool's errand to try to prove its present and prospective lack of influence on the political process. Even if the plaintiff miraculously prevails on the merits, the gerrymanderer will still control the outcome of at least two out of the five elections held after a decennial redistricting. [FN99]

With such a crabbed view of the substantive offense, one wonders why the Court held that gerrymandering claims were justiciable at all. The best evidence of gerrymandering, including the facts surrounding the process of drawing district maps, the shapes of districts, and even the sworn admissions of legislators, is disregarded as merely bearing on the issue of discriminatory intent—and that despite the fact that prior discrimination law had considered the issue of intent to be paramount. Evidence of lack of proportional representation is deemed relevant—though, ironically, focusing on such evidence risks embroiling the Court in politics in the very manner it presumably sought to ***321** avoid in formulating such a high threshold showing. [FN100] The "opportunity to participate" standard either requires the courts to make political assessments of partisan power, or defines gerrymandering in a manner which ensures that no successful claim will ever be brought.

B. Individual Rights and "One Person, One Vote"

The Davis plurality took a wrong turn at the outset. It miscast the nature of the injury resulting from gerrymandering, by deciding that the "group level ... must be our focus in this type of claim." [FN101] Thus, "in order to succeed, the Bandemer plaintiffs were required to prove ... intentional discrimination against an identifiable political group and an actual discriminatory effect on that group." [FN102] In other words, the plaintiff is injured not as a person or a citizen, but as a Democrat or a Republican.

But that is wrong. Gerrymandering as a constitutional violation is not something that Democrats and Republicans do to each other. Gerrymandering is something that legislators do to voters. [FN103] The apportionment cases provide a useful legal framework within which the harm of gerrymandering can be placed and considered. These cases focused exclusively upon the harm suffered by individuals as voters. Even though the Court in Reynolds v. Sims recognized that nationwide malapportionment tended to advance the interests of rural areas at the expense of urban areas, [FN104] its attention remained fixed on the individual right that malapportionment violated. It should have made no difference to the outcome in Reynolds had the Court been persuaded that legislators from malapportioned districts were properly sensitive to urban concerns, or that they passed legislation which was fair to everyone.

Rather, the Reynolds Court focused on the legislature's discriminatory act of classification: "the concept of equal protection has been traditionally viewed as requiring the uniform treatment of persons standing in the same relation to the governmental action questioned or challenged." [FN105] Similarly, in Gray v. ***322** Sanders, it emphasized that "there is no indication in the Constitution that homesite ... affords a permissible basis for distinguishing between qualified voters within the State." [FN106]

While the Court's language in the apportionment cases contains sweeping claims about the purposes and goals of reapportionment, [FN107] the legal argument "must be concentrated upon ascertaining whether there has been any discrimination against certain of the State's citizens which constitutes an impermissible impairment of their constitutionally protected right to vote." [FN108] The Court found this impairment in the intentional "dilution" of the votes of people living in overpopulated districts.

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Searching for precedents to justify judicial intervention, the Court cited cases where the right to vote was completely denied; [FN109] however, as the dissenters argued, "denial" of the right to vote is not the same as "dilution" of that right. Justice Stewart wrote, "[n]obody's right to vote has been denied [by malapportionment]. Nobody's right to vote has been restricted. Nobody has been deprived of the right to have his vote counted. The voting right cases which the Court cites are, therefore, completely wide of the mark." [FN110] Justice Frankfurter argued in Baker that "[a]ppellants invoke the right to vote and to have their votes counted. But they are permitted to vote and their votes are counted.... Talk of 'debasement' or 'dilution' is circular talk." [FN111]

The dissenters had a point. The Court has spoken at times as if the harm to voters from malapportionment were measurable: "The resulting discrimination against those individual voters living in disfavored areas is easily demonstrable mathematically. Their right to vote is simply not the same right to vote as that of those living in a favored part of the State." [FN112] A moment's reflection reveals that the harm of malapportionment is not so simply cast. For the harm to be mathematically demonstrable, one first must make a number of assumptions, such as that voter turnout will be equal in every district. If ***323** there are ten thousand eligible voters in each of two properly apportioned districts, and all the voters in one district turn out for an election but only half in the other district do, the voters in the second district each have twice as much actual effect on the outcome of the election as the voters in the first, and their votes have twice as much "value." The "mathematical" harm to the voter is really a calculation of the potential value of a vote cast in a hypothetical election where turnout is even across districts. [FN113]

The only undeniable harm was the discriminatory acts of classification by the state: [FN114]

> It would appear extraordinary to suggest that a State could be constitutionally permitted to enact a law providing that certain of the State's voters could vote two, five, or 10 times.... And it is inconceivable that a state law to the effect that ... the votes of citizens in one part of the State would be multiplied by two, five, or 10 ... could be constitutionally sustainable. Of course, the effect of state legislative districting schemes which give the same number of representatives to unequal numbers of constituents is identical. [FN115]

Malapportionment, then, is not a denial of the right to vote, but rather a dilution of that right, the magnitude of which is unspecifiable. What vote ***324** dilution and vote denial have in common is the state's act of discriminatory classification. Viewed in this light, gerrymandering is a violation of the same individual right recognized in Baker, Wesberry, and Reynolds—the right to be free of governmental tampering with one's vote. The only group element involved is that the voters who were fouled were chosen for the honor because of the presumed strength of their affinity for candidates of one party or another. We may as well characterize the equal population criterion as a group right, since malapportionment was historically directed against an identifiable group composed of urban voters. [FN116]

Legal scholars who have written about these problems have labored mightily to rationalize a serious and revealing inconsistency in their legal world view. Gerrymandering and malapportionment are closely related, but most commentators consider Baker v. Carr to be rightly decided if not sacrosanct, while making grave justiciability objections to gerrymandering claims ("courts ought to stay out of political thickets").

For example, Daniel Lowenstein and Jonathan Steinberg proffer a distinction between group rights and individual rights to explain the inconsistency, asserting that gerrymandering cannot be recognized as a cause of action because it cannot be said to implicate anything but a group right (which constitutionally speaking does not exist), while "it is at least plausible" that apportionment implicates an individual right. [FN117] Their explana-

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tion as to why malapportionment violates an individual right is that "if one district is substantially more populous than another it makes sense to argue that a vote cast in the first district is devalued compared to one cast in the second." [FN118] This may be so (although they never address the assumptions which underlie talk of votes being "equal" or "devalued"), but it also "makes sense" to argue that if individuals are targeted by the state legislature to suffer an electoral misfortune which would otherwise afflict them only by accident, then their franchise is "devalued" when compared to others. This would be true irrespective of who wins the election. Lowenstein and Steinberg, however, argue that plaintiffs must be complaining either that they cannot affect the actual outcome of elections, or that their preferred candidate did not win. [FN119]

Lowenstein and Steinberg have an alternative argument why malapportionment cases are distinguishable from gerrymandering cases. They say that the rule of "one person, one vote" has now become a "pre-political" principle, and so is among the "ground rules that constitute and, therefore, precede the political struggle." [FN120] However, a principle that did not begin as "pre-political"***325** can hardly evolve there. "One person, one vote" was not a pre-constitutional principle of district-making. [FN121] Until Reynolds v. Sims, "one person, one vote" was not even a required element of the political equation. It has only been there for twenty-five years, hardly long enough for a legal rule to be translated into an irreducible axiom of democratic practice, uniquely beyond the scope of legal reasoning. If twenty-five years is long enough, it is plausible to believe that twenty-five years from whenever the Supreme Court recognizes a compactness-based antigerrymandering principle, it shall have become pre-political as well.

Professor Schuck's attempt to distinguish malapportionment and gerrymandering fails for similar reasons. According to Shuck:

> [First,] the "one person, one vote" principle has proved to be judicially manageable ... [second,] partisan gerrymandering is politically constrained in ways that pre-Baker malapportionment, which often resulted from the legislature simply doing nothing in the face of population shifts, was not.... Finally, the population equality principle has achieved a public acceptance and settled character in our political system. [FN122]

None of these points is persuasive as a means of distinguishing an antigerrymandering principle from that of "one person, one vote." Just as there are judicially manageable criteria to define and remedy departures from the principle of "one person, one vote," there are such criteria to prevent gerrymandering. Moreover, whether it is true that gerrymandering needs no remedy because it is already politically constrained is an open, empirical question. Those familiar with recent gerrymanders, such as the one in Indiana that led to Davis v. Bandemer or the "Burtonization" [FN123] of California in 1981, would probably giggle at the assertion that gerrymandering was constrained by the political process. [FN124] Surely it would be more convincing to argue that gerrymandering is too tough a problem to ask a court to fix rather than that it is such an easy problem that it fixes itself.

***326** Schuck's last argument is that "one person, one vote" has wide public acceptance, whereas an antigerrymandering principle has no comparable consensus behind it. [FN125] Both prongs of this assertion are dubious. On one hand, the wide acceptance of "one person, one vote" was an ex post phenomenon. No broad popular movement was clamoring for the result in Reynolds at the time it was decided. [FN126] On the other hand, an antigerrymandering principle probably can claim a large and influential constituency of newspaper editorialists, good government reformers, and, in brief, the same sorts of people who would have supported Reynolds in 1964. [FN127]

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III. Compactness as a Remedy for Gerrymandering

The apportionment decisions lend credence to the notion that a valid election only occurs where the process is fair. A compactness standard could be embodied in the law using a similar "fair-process" approach. [FN128] The act of gerrymandering, defined as the drawing of district lines in a manner intended to inflate the districting party's majority in the legislature, violates the individual rights of those whose votes are meant to be diminished. [FN129] Recognizing that all district plans are partisan to some extent, courts could limit their intervention to cases in which gerrymandering violated certain clear procedural norms.

If a substantial challenge were made to the noncompactness of a district plan, for example, by proffering a more compact plan, then a prima facie case of gerrymandering would be made out, and the state would have to provide acceptable, nonpartisan reasons for having drawn its district lines as it did. ***327** Any voter whose vote was targeted for diminution by being deliberately placed in a minority district ought to have standing to sue. [FN130]

Before a compactness standard can operate as a legal criterion, one must show that compactness is a valuable safeguard, that noncompactness is a reliable gauge of partisan gerrymandering, and that a workable method of determining compactness exists. The following section argues that the criterion of compactness is intimately related to other procedural safeguards which all agree are necessary for fair elections.

A. Equinumerosity, Contiguity and Compactness

One may take it as given that those in present charge of the government would prefer to control who gets elected to office if they could manage it. They could manage it infallibly if they were entitled to say, on an ad hoc basis, whose vote would count and whose would not. Democracy, as the term is commonly understood, precludes this sort of ad hoc choosing. Democracy implies a fairly steady state of constitutive rules that control and constrain the way in which such choices can be made. There is no possibility, of course, for these rules to be in a steady state unless they at least minimally constrain political manipulations. Such rules might specify, for example, that there must be a certain number of districts, defined beforehand; that an elector may vote only once; that an elector must vote only in the district to which he is assigned; and that whoever gets the most votes in each given district is elected.

The foregoing criteria are a bare-bones version of the sort of rules that are required in order to allow the idea of a democratic election to operate at all. The question is whether and how far these criteria could prevent those currently in power from doing what we assume comes naturally, namely, determining who wins each election. Key to the operation of these criteria is a substantive idea of what is meant by a "district."

***328** We have an ingrained notion that an electoral district is a place, like Chicago, but a district is not necessarily so. A district could be defined as the members of the Academy of Motion Pictures Arts and Sciences, or as the members of the legal profession or the pipefitters' union, or indeed, a district could be a purely theoretical construct describing that set of voters, wherever resident, whom we designate as a district. Under the four rules we mention, assuming no others applied, it would be easy for those in power to rig favorable electoral outcomes.

Imagine a hypothetical state with ten million inhabitants, each of whom belonged to one of two parties. The state has twenty districts and is to hold an election for representative in each. Someone with absolute control over the districting process could afford to be practically indifferent to how much popular support his party en-

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joys. If he can identify only nineteen "friendlies" in the entire state, he will be able to win the election in nineteen districts by designating each of them as a district. Each district so constituted would then elect its representative by a majority vote of one to zero. Success could not be guaranteed in the mammoth twentieth district, comprising everyone else in the state. The vote there would depend on how popular the friendlies were in the population as a whole. In principle, they could lose by the inglorious tally of 9,999,981 to zero. The state's delegation would then be nineteen friendlies and one (very popular) "unfriendly." [FN131]

Such outcomes can be and are ruled out, of course, by further refining the concept of "district." In Reynolds and Wesberry the Supreme Court took this step by holding that all districts must have approximately equal populations. This requirement ("equinumerosity") substantially diminishes the ability to affect outcomes. If an equinumerosity constraint applies, nineteen out of ten million would come nowhere near assuring a favorable electoral outcome in even a single district, no matter how much discretion one otherwise has.

Surprisingly, however, the principle of equinumerosity is practically helpless, acting all by itself, to ensure what one would normally think of as majority rule. Suppose the voters in our state are precisely split in their support of the two parties. In theory, if equinumerosity were the only constraint, the friendlies would still be able to engineer victories for themselves in nineteen out of twenty of the districts, by ceding to the opposition an enormous majority in one district, and then cobbling up slim majorities in the other nineteen. [FN132] Constructing these majorities should be a straightforward business because the ***329** rules as stated so far still allow partisans to assign any voter in the state to any district in the state.

Under this regime, an election in which the equinumerosity constraint had been conscientiously obeyed could be just as undemocratic as where one person was designated as an entire district. The result from our hypothetical state can be generalized: no matter how many districts there are, a party with 50% support can theoretically win in all the districts but one. [FN133] In a state with 45 districts (for example, California in the 1980s) a resourceful partisan hand could fashion victories in 44 of those districts. In a state with 500 districts, skimpy majorities could be arranged in 499. Admittedly, these are theoretical extremes, and as the number of districts increases it becomes harder to create safe majorities in all but one district. [FN134] There are, however, entirely realistic versions of this problem that make it clear that population equality alone is an all but meaningless limitation on malign partisanship.

No matter how many districts in the state, although the friendlies have the support of only 50% of the state's voters, they can, even while adhering to the principle of equinumerous districts, guarantee themselves 25% margin victories in 80% of the races. [FN135] Smaller margins could well be tolerable, because districts constructed without regard for where voters live do not change their character as people move about the state. If they were prepared to risk victory margins of only 10% the friendlies could guarantee themselves wins in 90% of all districts. [FN136]

Other strange results are possible where only "one person, one vote" stays the partisan hand. For example, a minority party which controls the districting process can assure itself a majority of legislative seats as long as it polls more than 25% of the popular vote. [FN137] Also possible is a ferocious brand of majority rule: a party that controls the districting process and polls an amount ***330** greater than 50% of the vote can, in theory, win 100% of the seats in the legislature. [FN138]

The root cause of these undemocratic outcomes is still traceable to the inadequate constraint on what is meant by a "district." An additional rule, importing a rudimentary notion of "place," is necessary to prevent such

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results. The concept of contiguity remedies this defect. The idea of contiguity is so integrated with our concept of what a district is that it generally remains unanalyzed. [FN139] Although a majority of states have either constitutional or statutory contiguity requirements, [FN140] the Supreme Court has never said that a district must be composed of contiguous areas. Cases involving contiguity typically deal with such questions as what land is contiguous to what, or how insubstantial a connection may be without becoming noncontiguous, or when land is contiguous although isolated by a body of water. [FN141] So far as we are aware, only one court has held that a district may be composed of two or more genuinely discrete, isolated, independently contiguous plots located on the same land mass. [FN142]

Despite the courts' inattention, contiguity is not just a gracenote in the score of democracy; it is crucial, both practically and theoretically. Without the constraint of contiguity, equinumerosity is so diminished that its only real value is symbolic. A contiguity requirement exponentially shrinks the number of available districting options, because in constructing one district, the mapmaker***331** necessarily forecloses the possibility of constructing countless others which would intersect the first. [FN143]

But whatever contiguity adds to a gerrymanderer's burdens, noncompactness can take away. Noncompactness may render contiguity irrelevant as a constraint. For any existing scheme of contiguous districts, a single voter, no matter where in the state he lives, could in theory be included in any district by means of a gerrymandered plan that neither displaces any other voter nor renders any part of any district noncontiguous. Further, for any spatial arrangement of voters, a scheme of contiguous districts can be constructed such that each district contains only those voters that have been specified in advance, regardless of where they live. [FN144]

If every name in the Manhattan phone book is randomly associated with one of ten districts, a map can be constructed that will place every voter in a literally contiguous district no matter which combination of names and districts are chosen. The resulting district map would certainly look odd—in places, districts might be stretched thin as telephone wires—but it can be done, regardless of where the voters live. Thus, from the viewpoint of a partisan mapmaker, compactness and contiguity are a single entity, and freedom from the constraint of compactness is equivalent to freedom from contiguity as well. In such a world, abusive results are predictable events. To rule out this sort of situation, one needs a third criterion: Districts must be compact. [FN145]

***332** The antimanipulation power of equinumerosity, contiguity, and compactness are mechanically interdependent: if any one is entirely ignored, then the other two fail as guarantors against partisan manipulations. At present only population equality has been constitutionally required, but if the efficacy of the equal population principle depends on at least some minimal requirement of contiguity, to that extent contiguity must also be constitutionally required. If contiguity can in its turn be rendered meaningless without a compactness criterion, to that extent compactness must be constitutionally required. [FN146]

B. Compactness as a Restraint On "Partisan Lust" [FN147]

The compactness requirement interdicts a technique that is indispensable to creating effective gerrymanders. People do not naturally arrange themselves to suit the purposes of a gerrymanderer. Residents must be placed in appropriate districts. Toward this end, district lines are stretched and shrunk, and in the process districts become noncompact. Thus, where compactness is a constraint, a gerrymanderer's job is noticeably harder. [FN148] A compactness requirement would not end all gerrymandering, but it would diminish its practical value to partisans. So long as partisan mapmakers are left with any discretion whatsoever, strategic line-drawing will continue to exist, but the worst cases—that category which the Supreme Court is certain must exist, but for which ad-

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equate diagnostic criteria have never been proposed—almost certainly can be ruled out.

***333** An effective gerrymander, for purposes of our argument, is one that has been designed to increase the disparity between a party's actual support among the population and its seats in the legislature, and which actually achieves this result. No one can say a priori the number of seats to which a party is entitled given a particular level of popular support. A compactness standard need not answer that question, which is a good reason why it can qualify as a neutral standard which avoids nonjusticiable political questions. By purely mechanical operation, a compactness requirement tends to inhibit gerrymandering. By inhibiting gerrymandering, in turn, one abets proportional representation, not by fiat, but by empirical tendency. [FN149] A compactness requirement, in other words, makes it superfluous for a court, or any other arbiter of fairness, to aim at proportional representation directly. The objection that gerrymander reform must eventually come down to judicially managed proportional representation is thus sidestepped. [FN150]

A requirement of compactness would prevent effective gerrymandering. Consider again our hypothetical state with twenty congressional districts and with a voting population divided 50-50 between two parties. With an equinumerosity and a contiguity rule but no compactness requirement, the party controlling the districting could arrange wins in nineteen of those districts. [FN151] The more compactness is enforced, [FN152] the greater the difficulty of arranging wins in nineteen districts, and the greater the risk that the gerrymander will fail or even backfire. At a certain level of compactness, even the most determined partisan with the fanciest software will be able to arrange majorities in only eighteen districts. [FN153] Tighten the compactness requirement further and that number will drop to seventeen, and so on. If the only acceptable plan were the most compact plan (according to whatever definition of compactness one were using) results more like 10-10 or 11-9 would usually emerge.

***334** Several scholars have recognized the power of a compactness standard. [FN154] A number of other commentators have argued that a compactness standard would not have much prophylactic value, [FN155] and that, at most, a compactness standard might be useful for identifying gerrymandering but probably would not be useful in remedying it. [FN156] However, identifying gerrymandering can allow one to remedy it. A judge who can ascertain if a given districting map has been gerrymandered can enjoin its use, and the use of successor plans, until a map is submitted that does not possess the stigmata of gerrymandering. Sooner or later the mapmakers will have to produce an acceptable map.

C. Critiques of Compactness

Lowenstein and Steinberg have gone beyond simply doubting that the compactness standard would do much good; they believe that it would actually do much harm. [FN157] According to them, compactness "is not neutral. On the whole, the adoption of compactness as a criterion for drafting or evaluating districting plans will systematically advance the interests of the Republican Party and correspondingly disadvantage the Democratic Party." [FN158] The proffered reason is that predictably die-hard Democratic partisans tend to be highly concentrated in cities. Compact districts will tend to cluster these voters in a few districts where many of their votes will be "wasted." The result will be a sort of natural gerrymander favoring Republicans. [FN159]

In addition to the fact that Lowenstein and Steinberg have little evidence that the Democrat-to-Republican ratio in heavily Democratic areas is consistently higher than the Republican-to-Democrat ratio in heavily Republican ***335** areas, [FN160] there is no reason to believe that "natural" gerrymanders are robust and effective without a little help from partisan friends. As opponents of gerrymander reform never tire of pointing out, even

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gerrymanders created with all the skill that partisans can command are fragile and often risky. Targeted voters are concentrated in a few districts in the hopes of winning many other districts by modest margins. A miscalculation that leads to a loss in a marginal district will saddle the clumsy, or unlucky, gerrymanderer with the worst of all worlds. The gerrymanderer will have created opposition strongholds where the votes of the mapmaker's own party will have been wasted on purpose, while votes in marginal districts will have been wasted unintentionally. A few unintentional marginal losses can eviscerate an entire gerrymander, because to be effective, a gerrymander must produce wins, not just in a majority of marginal districts, but in a supermajority of those districts.

Lowenstein and Steinberg evidently believe more than they say about the resiliency of natural gerrymanders. Even if it is established that the two parties' voter dispersion differs systematically from one place to another, Lowenstein and Steinberg must show that Republicans will win a supermajority of the marginal districts that a "natural" gerrymander creates. No published study has demonstrated this effect and we know of no good reason to suppose that it will occur. [FN161] It seems equally likely that the Democrats will carry enough marginal districts to spoil a natural gerrymander. A natural gerrymander may even redound to the Democratic Party's advantage where their core districts were more irrefragably partisan than were the strongholds of the opposition.

A more fundamental response to the Lowenstein-Steinberg claim that compactness is merely "a Republican Trojan horse" [FN162] is that it simply does ***336** not matter, legally or ethically, that a fairness-enhancing reform will hurt one party and help another. Such considerations received and deserved no weight from the justices in Baker v. Carr. [FN163] Baker and its progeny have not been defended or attacked because they established ground rules that help Democrats or hurt Republicans (although a clear partisan effect was present). [FN164] Critics objected because the Constitution did not command "one person, one vote." It was and still is a fair point, but at this late date that issue must be taken as settled. Apart from that issue, it is simply a damnum absque injuria that fair ground rules hurt people, including innocent people, who have profited in the past from the existence and application of unfair rules.

If a compactness principle would systematically help Republicans at the expense of Democrats, it would probably be because Democrats, controlling many more state legislatures than Republicans, are in a position to do more gerrymandering. [FN165] If Democrats are harmed further because of differences in how followers of the major parties are dispersed, it should not matter legally. The destruction of gerrymandering is a worthy goal which will improve the practice of democracy. As Martin Shapiro has pointed out:

> Neither party chose to represent whom they did because of their geographic stacking or dispersion or with an eye to how their choice would affect their electoral fortunes if the world were suddenly to come ungerrymandered. If geography favors the Republicans in an ungerrymandered world, that is a purely fortuitous result, unforeseeable by either party when it chose its ideologies and clienteles. Such stacking ought to be treated as extraneous to the goal of constraining the self-serving actions of legislatures. [FN166]

***337** It is an open secret that partisan fears about a constitutional compactness criterion center on the fact that racial and ethnic minorities are concentrated in big cities. That is where a compactness criterion would pinch hardest. Generally, these minorities are disposed, and African-American populations markedly disposed, to vote Democratic. [FN167] Democrats have a particular, institutional stake in opposing the incorporation of the compactness criterion into law, because they fear that this would concentrate Democratic voters more than it would Republican voters.

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Yet this issue is not only of concern to the Democratic Party. After all, many minority voters define themselves first as a member of a minority group, and only secondarily as a Democrat (or whatever other political party). The minority voters' interests and those of the political party to which they adhere are not in all respects and at all times congruent.

A single-member district system inflates the power of the majority party in the legislature, by a factor which increases geometrically with the size of the majority's public support. [FN168] The smaller a minority group, the more likely that its members will be ineffectually scattered and the less likely that it will form a majority in any one district. A small minority group may never have a chance to send one of its own to the legislature, although it can become a part of a coalition and thus influence whoever does get elected. The interest of such a minority group may well be best served by having its members concentrated in one or a small number of districts in order to create a comfortable majority in as many districts as possible. This intuition animates the federal Voting Rights Act, [FN169] which, in outlawing the dilution of minority voting strength, often mandates the deliberate concentration of minority voters in particular voting districts.

Even if this concentration, combined with minority voting patterns, costs the Democratic Party many "wasted votes," it would nevertheless remain true that this aspect of the compactness criterion dovetails with one of the goals of the Voting Rights Act. The primary antagonism, in other words, would not be between the compactness criterion and the interests of the Democratic Party; it would be between the interest of minority-group voters in electing a minority member to office, and the interest of the Democratic Party in maximizing the electoral success of Democratic candidates of whatever race. [FN170]

There can be no a priori claim that minorities would necessarily be better off being represented by Democrats of whatever race than by having the ***338** realistic chance of being represented by one of their own race (regardless of party). This question is one that minority groups are well able to answer for themselves. Congress, in enacting the Voting Rights Act, apparently believed that minorities would consistently prefer the chance to elect a minority representative. [FN171]

Bruce Cain discredits the compactness criterion on a strictly non-partisan basis. [FN172] Cain lists all the "good government" values that an ideal electoral district would possess and then argues that these values are only uncertainly related to a compactness standard. For example, the compactness criterion may make it difficult to preserve "communities of interest," however these are defined, and it may make it impossible to cleave to existing political boundaries. [FN173] Compactness may even conflict with the "good government" value of proportional representation. [FN174] Thus, Cain argues, there is no principled reason to favor compactness.

There is, however, at least one principled reason that lies not in any particular "good government" value but rather in the relationship between district-making and democratic process. Apart from any independent value compactness may have as a principle of democracy, [FN175] once one acknowledges that gerrymandering is a pathology of democratic government, one needs no better reason for embracing the compactness principle than that it makes effective gerrymandering more difficult.

The primary purpose of gerrymander reform is to prevent vote dilution carried out under the auspices of state government, and to redress the legal wrong to those whose votes are deliberately wasted. Because gerrymandering works by distorting the correlation of votes to seats, one advantage of gerrymander reform is a natural improvement in that correlation. Any increase in proportional representation is, however, merely collateral to reform. [FN176] By ***339** the same reasoning, it is a collateral injury where compactness worsens proportional

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representation, as it does in a few cases.

The most likely case is one in which racial minorities have achieved a level of representation under the Voting Rights Act beyond what their numbers might warrant in ordinary single-member district elections. However, a race-conscious electoral policy, assuming we are to have one, can be accommodated to a legal compactness standard by the simple expedient of requiring that noncompactness be explained by the mapmaker. If the explanation is that noncompactness was forced by the requirements of the Voting Rights Act, this should be legally sufficient. [FN177]

A second instance where compactness would impede the "good government" value of proportional representation is the case of a bipartisan districting accord, which might well lead to closer proportional representation for both the minority and majority parties than unrigged elections would allow. The Supreme Court upheld such a bipartisan plan in Connecticut in Gaffney v. Cummings. [FN178] The wisdom of allowing such bipartisan gerrymanders is highly suspect. The problem of self-constituting assemblies remains. We should be skeptical of legislators' attempts to persuade us that when they design district maps which make their own seats as safe as possible, they are motivated by an austere concern for the public weal. Even assuming, as we reluctantly must after Gaffney, that such arrangements are permissible, it is possible to accommodate them within the law simply by saying that the value of such bipartisan arrangements justifies their noncompactness.

D. Choosing a Workable Compactness Standard

In this section we show that there is a conceptually adequate and practically workable mathematical measure of compactness. Finding such a measure is critical to meeting the requirement in Baker that there exist "judicially discoverable and manageable standards" [FN179] with which to approach what might otherwise be labeled a "political question." There are, in fact, a number of ways of measuring compactness, described by a recondite literature. [FN180] One of these, as we now show, is superior to the others, but it is not essential to the argument for compactness that a particular criterion of compactness be proposed and defended. As Shapiro notes, "[i]f the only reason to oppose compactness is that there is no simple test for it as there is for equal population,***340** then we can easily overcome this obstacle by thinking in terms of constraints rather than ideals." [FN181] Compactness that constrains gerrymandering is compactness enough. Realistically, any one of a number of possible standards, if rigorously applied, could improve the current practice of districting.

Nor is it necessary to provide an a priori description of an ideal electoral district. A proposal to defeat gerrymandering need not include such other desiderata as preserving the seats of respected incumbents or the integrity of "communities of interest." These and numerous other criteria have been recommended as guidelines for legislative districting in the public interest. [FN182] But it is not true that because many districting criteria are available, there is no way to choose among them. [FN183] There exists a world in which politicians can remain free to weigh the merits and demerits of these many alternative criteria, but in which, for all practical purposes, they cannot commit the excess of gerrymandering. The burden of this section is to describe this world and to show that a judge can get there from here. [FN184]

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***343** Ideally, a compactness measure should have two qualities. First, it should measure the right thing, the thing that gives it antigerrymandering power. Second, it should be infinitely discriminating. It should gauge a range of shapes across a spectrum, giving incrementally better scores to shapes which are incrementally more

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compact. The best way to understand these characteristics is by illustration. Suppose that, in calculating compactness, we divided the longest straight line whose endpoints were within a district by the longest line perpendicular to it whose endpoints were also in the district. A score of 1 is the lowest and best for any one district. (In figure 1, divide the length of line A-B by the length of line X-Y.) This simple method will weed out many long, thin districts which would be deemed noncompact by any reasonable measure.

The problem with this method, however, is that it is not discriminating. It is so insensitive, in fact, that one might question whether it measures the right thing. A district shaped like a rectangle might score exactly the same as one shaped like a cross. Both scores may be "perfect." If a rectangle and a cross both have perfect scores, what (non-circular) argument would justify the claim that they should not? It must be remembered that one need not possess a platonic definition of "compactness." One only needs a kind of compactness that frustrates gerrymandering.

This is why the perpendicular-line rule fails. It does not adequately discriminate against partisan behavior. It cannot tell the difference between a district plan constructed of tiled squares and one which is a jigsaw puzzle of irregular shapes where the perpendicular maximums of individual districts happen to be equal. But partisan mapmakers most assuredly can tell the difference. Such people would much prefer the leeway to make T-shaped or L-shaped districts, or shapes in between, as such leeway facilitates the business of including and excluding voters. In other words, it facilitates gerrymandering.

Measures based on length-width displacements and the like are generally inadequate because of their inability to discriminate. For example, one of Iowa's statutory definitions of compactness measures the difference between the line drawn from the northernmost point in a district to the southernmost point and the line drawn from the point furthest east the one furthest west. [FN185] Deviations that do not alter these four critical points have absolutely no effect on the district's score. The Iowa measure is thus blind to any connivance that occurs within the four "walls" to the north, south, east, and west, although this may be very important to partisans. (See figure 2, in which each figure has an identical, "perfect" score.) [FN186]

***344** Morrill has a somewhat different measure, that compares the length of a district's minimum diameter to the length of its maximum diameter. [FN187] As long as the maximum and minimum diameters are held constant, the opportunity remains for partisans to manipulate district boundaries—unobjectionably, insofar as Morrill's criterion is concerned. [FN188]

There have been much more ambitious schemes for ascertaining compactness. [FN189] Reock, for example, suggested that the area of a district be divided by the area of the smallest circle which can circumscribe the district. [FN190] This formula is relatively easy to use, incorporates a reasonable notion of compactness, [FN191] and generally prefers shapes which a reasonable person would perceive as compact. It is also infinitely sensitive in the sense that every change in the perimeter, no matter how minute, will affect the score.

It is not, however, an infinitely discriminating measure, as figure 3 illustrates. Each shape is a square district, but with the same sized spike added to capture a desired block of voters. For the simple reason that each of the spikes is differently oriented, the Reock measurements are vastly different. (The area of each district is the same, but the area of the circumscribing circles are not.) However, there is no justification for these shapes possessing different scores. In a state of ex ante uncertainty about the actual populations to be gerrymandered, the ability to create spikes is worth a certain constant amount to gerrymanderers. In other words, to a gerrymanderer, the a priori expected value of each shape is identical. Figure 4 yields an even more striking example of a bad

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result, actually a perverse result. The protruding sinuosities make this gerrymandered-looking shape nearer in area to the circle which circumscribes it. Its score thus improves; figure 4 scores better than a square. This result is ***345** not "wrong" in terms of the essential quality which Reock's formula purports to measure, which is a shape's ability to fill up a circle. It is, however, wrong because it does not prevent gerrymandering. [FN192]

A related attempt to define compactness derives from the physical concept of the "center of gravity" of an object. [FN193] This method ascertains the "moment of inertia," or axis of rotation, of a two-dimensional shape in the same way a center of gravity is determined for a massive object. [FN194] Compactness is the sum of the squared distances of every point in the shape in relation to the moment of inertia. The "points" may be either geographic points or units of population. [FN195] This method renders literal what Reock's measure only approximates: compactness is the relation of every point in a shape to the shape's center.

This benchmark has some anomalies of its own. First, it is far tougher on larger districts than on smaller ones with identical shapes, because squares increase exponentially as numbers get larger. The same proportionate "spike" costs more in a larger than in a smaller district, because, for example, the difference between nine-squared and ten-squared is only one one-hundredth of the difference between 90-squared and 100-squared. As an embarrassing consequence, the "center of gravity" score can give backwards results—a large, compact district could score worse than a small, noncompact district.

There is a potential "fix" for this problem, namely renormalizing districts by setting their areas equal to a fictional constant before calculating the center of gravity. This esoteric procedure can be manipulated in its own right because ***346** the unit one chooses for the constant can substantially influence the resulting scores. Furthermore, like the Reock system, the center of gravity benchmark would unjustifiably show different scores for the shapes in figure 3. [FN196] Nevertheless, another objection demands recognition. As the reader will already have concluded, this procedure is just too complicated. Even without the fix, it requires more mathematics than the average lawyer, certainly than the authors, can command.

The center of gravity measure does have one prima facie redeeming characteristic, and that is that the maximum score under this standard would indicate an unimpeachably compact districting scheme. It is not enough, however, for a compactness measure accurately to identify perfect-scoring plans. A good measure of compactness must reliably distinguish among, and order along, the spectrum of plans, from the very bad to the very good. This capacity to discriminate continuously is important, because practically speaking it is probably not possible to extirpate every last bit of partisan discretion to draw district lines. Even under equal population standards a certain minimal flexibility to depart from absolute equality has been allowed. [FN197] The ability to make comparisons, not to identify states of perfection, is what a measure has to be good at in order to be useful.

As a practical matter both the center of gravity standard and the Reock standard would permit a great deal of gerrymandering. [FN198] The trick is to make districts generally compact but replete with uncomely fractals at the borders, shapes which, so long as they were properly oriented, would do little to harm the district's score. This strategy could be extremely effective close to population centers. Neither Reock nor the center of gravity standard can measure what might be called the smoothness of a district's line. Both measures would register the silhouette of a circular saw blade as almost perfectly compact. Those serrated edges, which could be quite useful to a gerrymanderer, would essentially be ignored. A straight-edged polygon, of much lesser ***347** a priori value to a gerrymanderer, might score no better than the blade under either the Reock or the center-of-gravity measure.

For the purposes of defining legislative compactness, there are two superior standards. The first may be

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called "minimum line length." The second is a slightly modified version of a standard proposed by Schwartzberg. [FN199] A minimum line length standard requires that the length of all district lines in a state, when added together, be as short as possible. Unlike the other measures considered so far, minimum line length is concerned solely with the compactness properties of the set of districts in a state, not with the compactness of any particular district within the set. It notices and measures exactly what gerrymanderers are trying to do, namely, distort the lines of individual districts in order to achieve a global result favorable to their client. [FN200]

While minimum line length would probably be a workable tool to combat gerrymandering, it is subject to theoretical and practical objections. Minimum line length focuses on a set of districts and does not pay attention to the configuration of any individual district. The standard may result in districts which are not particularly compact. Minimum line length is oblivious to whatever good government values individual district compactness may serve. Whether this is a grave problem depends on the outcome of the debate over whether compactness possesses independent normative virtues. [FN201]

There is a weightier and more practical objection to the minimum line length standard. To the extent that any departure at all from the standard is allowed—and inevitably there will be some leeway allowed—the standard is relatively easy to subvert. If the minimum line length solution in a state is 1000 miles with a permissible deviation of five percent (50 miles), [FN202] the gerrymanderer***348** will still be left with the discretion to draw fifty miles of grotesque, non-compact district lines. Small non-compact districts, which will always be in cities, would generally do little to unsettle a minimum line length score. Indeed, as long as a single district in our hypothetical state had a perimeter of less than 50 miles, a gerrymanderer could give it any shape he chose, however tormented.

States with more districts would yield longer total minimum line length solutions, and would thus yield more miles of leeway. More populous states, which have more congressional districts, would give greater room for gerrymandering. These larger states are the ones in which both major parties are strong and thus in which gerrymandering is apt to be an exceptionally important factor in maintaining political control.

A different criterion of compactness is better than minimum line length and indeed every other standard we have mentioned. This is the measure proposed by Schwartzberg, which defines compactness in terms of the effectiveness of a shape's perimeter in capturing area. [FN203]

Schwartzberg's measure deals with the ratio of a shape's perimeter to its area. Not every ratio of perimeter-to-area, however, will adequately gauge the compactness of that area, as the following illustration shows. Consider two squares of different sizes, one with two-mile sides and one with ten-mile sides. The smaller square has a perimeter of eight, an area of four, and therefore a ratio of two. The larger square has a perimeter of forty and an area of 100, or a ratio of 0.4. Both shapes, though identical, have very different scores.

Placing the perimeter-to-area ratio on an absolute scale will avoid this anomaly. For any length of perimeter, whether ten centimeters or ten miles long, a circle encloses the maximum possible area. Every other shape must somewhere make a concession of some kind, so that perimeter will not be used with the greatest possible efficiency to capture area. The absolute measure of a shape's efficiency is determined by dividing the area of the shape by the area ***349** of a circle with a perimeter of equal length. [FN204] When this formula is applied, all identical shapes, regardless of size, score the same. [FN205]

The Schwartzberg criterion measures a gerrymanderer's self-indulgence as surely as a breathalyser measures

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a drunkard's. Any deviation from any given shape that changes a district's area and perimeter to the same extent, no matter where the protrusion is added, which way it is oriented, how far it is from the district's center, or how it is shaped, will degrade the district's Schwartzberg score by an identical amount. The Schwartzberg measure highlights the best features of the other criteria of compactness. It charges points when districts are longer than they are wide; when boundaries are far from the center; when lines are indented; or indeed whenever they are longer than they have to be. The Schwartzberg test also measures "smoothness," taking away points for any irregularities in a boundary line, even in a generally compact district. [FN206] The superiority of the Schwartzberg measure from the ***350** antigerrymandering point of view is simply that it assigns identical scores to shapes that possess identical a priori value to gerrymanderers. Thus, each of the shapes in figure 3, above, have (and ought to have) identical Schwartzberg scores.

There is one sense in which the Schwartzberg measure apparently fails to charge identical scores to deformed figures with identical a priori value to gerrymanderers. If one of the districts in figure 3, had, rather than a "spike," an indentation of the same size, it would score worse under the Schwartzberg standard. This is something of an anomaly because both shapes should have an equal value to would-be gerrymanderers. The difference exists because projections add to a figure's perimeter while adding to its area; but indentations add to perimeter while subtracting from area.

Perhaps this kind of discrepancy is inevitable when one uses a compactness measure that looks not at the set of districts but rather at each individual district. However, gerrymanderers do operate globally, worrying about the set of districts rather than one particular district at a time. They should value an indentation and an outcropping identically because both can be used equally to manipulate populations. Despite the theoretical objection to the Schwartzberg criterion, it nevertheless works perfectly well in practice. The Schwartzberg standard is so sensitive to any deviation that it is impossible to comfortably gerrymander using either maneuver. [FN207] Adding perimeter in a greater proportion than area will always drop the score. In that sense there are no "wrong" results: districts with appendages or indentations will always score worse than those without. [FN208]

One of the strengths of Schwartzberg-compactness is that it can be made compatible with other public policy goals while still retaining its anti-gerrymandering power. In other words, Schwartzberg-compactness remains a meaningful concept even if it is overlaid on the decision to adhere to existing political boundaries, [FN209] to create bipartisan gerrymanders, [FN210] to implement the goals of the Voting Rights Act, [FN211] or to avoid diluting particular***351** preferred communities of interest. [FN212] Even if one of these objectives, even if all of them at once, are given priority over compactness, the Schwartzberg standard can nevertheless be used. The new "ideal" would simply become the highest scoring plan which manages to embody these other goals as well. District plans would never be held to a certain fixed standard, but rather would be compared with one another. [FN213] The best conceivable district plan in Maryland might have an average compactness score of no more than 0.20, owing to that state's irregular shape. It should still be incumbent upon those who draw the district lines to explain why their plan scores only a 0.10. If the goals that a mapmaker claims to be pursuing can be met with a plan which is far more compact, a suspicion of pretext is justified.

IV. Conclusion

At the heart of any serious thought about gerrymandering lies a black hole in idea space. There is no generally accepted theory of representation that would allow one to specify what a legislature needs to look like in order to be worthy of its name. Democracy in this country has been vernacular, pragmatic, traditional, and, in its

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detail, stunningly a-theoretical. [FN214] We cannot trace to a unified theory of democracy even formal macro-structures like political parties or the committee system that organizes life in most legislatures, let alone the diffuse network of customary and informal means that influence the agendas that are set and the decisions that are made. The fine details of our political culture seem to have more germinated like dandelions than evolved as the cultivar of some set of organic axioms. Our democracy is a tangle of traditions and habits ordered into a set of institutions that have been accepted as the voice of the People.

These institutions, robust as they have been, are still vulnerable. Legislatures are susceptible to manipulation through the districting process. Changing only the lines on a map and not a single vote, the People's voice can be dramatically altered. Those who draw those lines can become master ventriloquists of the People's voice. To assert that this is a serious problem of democracy,***352** one need not claim that mapmakers often have grabbed illegitimate power, although the evidence overwhelmingly indicates that they have done so, and even more often have tried to do it. One need only believe that they have the means, motive, and opportunity. Sophisticated observers understand, of course, that the People and their voice are fictitious constructs, but they are not meaningless; that other, older fictitious construct, the body politic, lives by such myths. One may reasonably fear for its health if it had to do without them.

We have shown how easy it is to exploit, under current practice, the rules of legislative constitution in opportunistic ways. Admittedly, neither the theory nor the practice of American democracy tells us what a single-member districting plan ought to look like, or what the good is that a "good" plan would try to capture. Fortunately, an empirical remedy like ours allows one to frustrate gerrymandering without a clear picture of what rules of ideal districting such manipulations transgress.

The theory of gerrymandering, though not the practice, has remained in a fairly primitive state, but a few of the matters that lie in its shadow have tolerably clear outlines. First, it is clear that what we mean by "legislature" involves representation, itself a theoretically confounding term but one which does have a widely shared substantive meaning. Second, part of that received meaning implies proportional representation. "Proportional" in turn implies a frame in which proportion can be observed, that is, a district. "Districts" in turn imply places, contiguous parcels of real estate with equal populations. What our analysis adds is the practical note that contiguity without compactness is a lever without a fulcrum.

As central to American democracy as proportional representation is the Madisonian characteristic of centering, rather than scattering, political debate. The objective of centering, however, is potentially in conflict with that of proportionality. Some of the most familiar prototypes of proportional representation scatter debate like giant political centrifuges. [FN215] It is an arduous demand to make of a political system that it simultaneously center political debate and retain essential characteristics of proportional representation. The genius of Madison's simple artifice is that a legislature elected by representational districts both centers and, in gross, proportionally represents. The vulnerability of this mechanism to manipulation remains one of the great unsolved practical problems of American democracy. Indeed, it may be the best argument against Madison's system.

***353** The equal population standard has helped to solve this problem by further defining the notion of a district. The compactness criterion is the required next step. It is beyond the scope of this essay, to say nothing of its authors, to say whether a particular district ought to be compact or how compact it ought to be. But we can answer an easier question: whether a compactness criterion complicates the business of gerrymandering. It does. The third criterion will make the gerrymanderer's life a living hell. That's why we're for it.

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[FN1]. Jose Ortega y Gasset, The Revolt of the Masses 158 (1932).

[FN2]. Under Article I, Section 4 of the Constitution, state legislatures exercise the districting power subject to supervening congressional regulation.

[FN3]. The constitutional basis for this requirement is the Equal Protection Clause of the Fourteenth Amendment for state elections, or, in the case of federal elections, Article I, Section 2 of the Constitution, which provides that representatives shall be elected by "the people." See Reynolds v. Sims, 377 U.S. 533 (1964) (state legislatures); Wesberry v. Sanders, 376 U.S. 1 (1964) (federal districts).

[FN4]. Gray v. Sanders, 372 U.S. 368, 381 (1963); see also Reynolds, 377 U.S. at 558.

[FN5]. See, e.g., Richard L. Engstrom, The Supreme Court and Equipopulous Gerrymandering: A Remaining Obstacle in the Quest for Fair and Effective Representation, 1976 Ariz.St.L.J. 277, 278-280.

[FN6]. Gomillion v. Lightfoot, 364 U.S. 339 (1960).

[FN7]. Race-conscious line-drawing is one of the remedies available under the Voting Rights Act of 1965, 42 U.S.C. § 1973 (1988); see United Jewish Org. of Williamsburg v. Carey, 430 U.S. 144 (1977).

[FN8]. See e.g., Gaffney v. Cummings, 412 U.S. 735 (1973) (upholding bipartisan gerrymandering accord between Democratic and Republican members of Connecticut's legislature). Other kinds of districts, including school, hospital, tax or judicial districts, also can be gerrymandered.

[FN9]. Bernard Grofman, Criteria for Districting: A Social Science Perspective, 33 UCLA L.Rev. 77, 79, 98-99 (1985).

[FN10]. 377 U.S. 533, 579 (1964).

[FN11]. Elmer Griffith, The Rise and Development of the Gerrymander 19 (1907).

[FN12]. 369 U.S. 186 (1962). Baker established the justiciability of constitutional challenges to malapportioned districts.

[FN13]. Until 2 U.S.C. § 2a was amended in 1929, there was a statutory requirement that districts be equal in population and be compact, but both requirements were routinely ignored. See Richard Cortner, The Apportionment Cases 15 n. 32 (1970); see also, Colegrove v. Green, 328 U.S. 549, 551, 555 (1946). Since 1929, no equi-

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valent statutory provision has been on the books.

[FN14]. See infra part III.A.

[FN15]. Gerrymandering software for desktop computers increases in power and sophistication almost by the month, with correlative augmentations in the capabilities of those with the political authority to draw district boundaries. See Anderson & Dahlstrom, Technological Gerrymandering, 22 Urban Lawyer 59, 73-76 (1990); William E. Schmidt, New Age of Gerrymandering: Political Magic by Computer?, N.Y. Times, January 10, 1989 at A1; Mitch Betts, Gerrymandering Made Easy in 1990, Computerworld, Aug. 28, 1989, at 1. The generation of computers which drew the gerrymanders of the 1980s are almost certainly obsolete. Now, for example, there is the Topographical Integration Geographic Encoding and Referencing (TIGER), the U.S. Census Bureau's "new, high-tech map of America ... [that] means that anyone can quite cheaply buy a detailed computerized map of any state—accurate down to street level—loaded with demographic data. Combined with other new technology this means that almost anyone will be able to draw their own political maps." See Drawing Salamanders, Economist, Jan. 6, 1990, at 26, 30.

[FN16]. See, e.g., David Anderson, Note, When Restraint Requires Activism: Partisan Gerrymandering and the Status Quo Ante, 42 Stanford L.Rev. 1549, 1557 (1990) ("[In 1981 in Indiana, the] Republican State Committee enlisted Market Opinion Research, Inc., a Michigan market research firm, to assist in the creation of a Republican gerrymander. The Committee housed the computer equipment in its headquarters and paid $250,000 to Market Opinion Research for their services.... Computer systems to assist in redistricting first appeared in the mid-1960s. By 1971 ... state party organizations used computers extensively. These systems were archaic by today's standards.").

[FN17]. "Cracking" somewhat obscurely refers to the fact the opposition's support has been ineffectually divided.

[FN18]. There is not even agreement as to how a legislator is supposed to "represent" the people—as a "delegate," a "trustee," an "agent," or something else. Words like "portraying," "signifying," "mirroring," or "making present" have been applied to the ineffable idea of representation. See B.J. Diggs, Practical Representation, in Representation 28 (Pennock & Chapman eds., 1968); J. Roland Pennock, Political Representation: An Overview, in Representation, supra, 3, 8, 27; Charles L. Black, Jr., Representation in Law and Equity, in Representation, supra, 131, 140.

[FN19]. Cf. John Locke, Two Treatises of Government, §§ 212, 216 (J.M. Dont & Sons 1924) (discussing executive interference with composition of legislature) ("The constitution of the legislative is the first and fundamental act of the society ... without which no one man, or number of men, amongst them can have authority of making laws that shall be binding to the rest.... [I]f others than those whom the society hath authorised thereunto do choose, or in another way than what the society hath prescribed, those chosen are not the legislative appointed by the people.").

[FN20]. Wesberry v. Sanders, 376 U.S. 1 (1964), held that the clause, "chosen ... by the People," of Article I, Section 2 of the Constitution requires federal congressional districts to conform to the equal population standard. The dissenting opinion of Justice Harlan has persuaded scholars that the historical basis for this interpretation is largely absent. See, e.g., Carl Auerbach, The Reapportionment Cases: One Person, One Vote—One Vote, One Value, 1964 Sup.Ct.Rev. 1, 5. It is typically suggested that the Fourteenth Amendment provides more appropriate grounds for the standard. Id. The Wesberry argument, however, that malapportionment deprives "the People"

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of the power to constitute the legislature is more to the point, and applies equally to gerrymandering.

[FN21]. Martin Shapiro, Gerrymandering, Fairness, and the Supreme Court, 33 UCLA L.Rev. 227, 239 (1985).

[FN22]. It has long been recognized that anti-democratic practice can effectively poison democratic institutions and prevent reform. Justice Clark, concurring in Baker v. Carr, wrote that he would "not consider intervention by this Court into so delicate a field if there were any other relief available to the people of Tennessee" by which they could effect a reapportionment of their legislature. 369 U.S. 186, 259 (1962). "The majority of the voters [in Tennessee] have been caught up in a legislative strait jacket.... [T]he legislative policy has riveted the present seats in the Assembly to their respective constituencies, and by the votes of their incumbents a reapportionment of any kind is prevented. The people have been rebuffed at the hands of the Assembly; they have tried the constitutional convention route, but since the call must originate in the Assembly it, too, has been fruitless." Id. at 259. See also Reynolds v. Sims, 377 U.S. 533, 570 (1964) (lack of available political remedy results in "minority stranglehold on the State Legislature"); WMCA v. Lomenzo, 377 U.S. 633, 652 (1964) (call for constitutional convention in New York must pass both houses and even if convened, delegates would be sent from current districts); Maryland Committee v. Tawes, 377 U.S. 656, 669 (1964) ("Although over 10 reapportionment bills were introduced into the General Assembly between 1951 and 1960, all failed to pass because of opposition by legislators from the less populous counties."); Davis v. Mann, 377 U.S. 678, 689 (1964) (no adequate political remedy); Roman v. Sincock, 377 U.S. 695, 706 (1964) (no adequate political or state constitutional remedy).

The discussion in the text pertains to state legislatures, which must district themselves. The same considerations apply where state legislatures create federal congressional districts. Under Article I, Section 4 of the Constitution, Congress has the power to constitute itself, even if indirectly, by regulating the manner in which state legislatures draw congressional districts. One would expect Congress to forego this prerogative as long as state legislatures behave themselves and discomfit few incumbents.

[FN23]. Even the members of the minority opposition who make it to the legislature have a perverse incentive to do nothing about the current gerrymander, because they typically reside in the "packed" districts; they are the beneficiaries of those carefully constructed supermajorities which form half of the gerrymander equation. They well might think twice about the suggestion that they agree to a smaller margin of victory "for the good of the party."

[FN24]. Shapiro, supra note 21, at 251 (characterizing the view of those who support the justiciability of gerrymandering claims).

[FN25]. Robert Dahl, A Preface to Democratic Theory 27 (1956); see also The Federalist Nos. 10, 51 (James Madison).

[FN26]. See Ferdinand A. Hermens, Representation and Proportional Representation, in Choosing an Electoral System: Issues and Alternatives 16-17 (Arend Lijphart and Bernard Grofman eds. 1984).

[FN27]. See id.; see also Maurice Duverger, Which is the Best Electoral System? in Choosing an Electoral System, supra note 26, at 32.

[FN28]. See infra text accompanying note 52.

[FN29]. There is good evidence that the Founders valued the faction-diluting character of representation by place. Rather than representation by wealth, by profession, or indeed by any other principle of organization

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which would define in advance the kinds of interests that would be admitted to the game of politics, the authors of the Constitution deliberately chose geographical representation. They believed that this principle possessed a randomizing effect on the make-up of the voting public. Thus, for example, when Hamilton argued that the "wealthy and the well-born"—a faction—would not come to dominate the legislature through abuse of the voting process, he asked:

> Are the wealthy and the well-born, as they are called, confined to particular spots in the several States? Have they, by some miraculous instinct or foresight, set apart in each of them a common place of residence? Are they only to be met with in the towns or cities? Or are they, on the contrary, scattered over the face of the country as avarice or chance may have happened to cast their own lot or that of their predecessors?

The Federalist No. 60, at 370-71 (Clinton Rossiter ed. 1961). The gerrymanderer's art is to defeat this randomizing effect by editing the list of factions with which it will later have to contend. Writing to a friend in 1785 about his ideas for the Kentucky constitution, Madison stated that representation "cannot be done otherwise than by geographical description." Marvin Meyers, The Mind of the Founder: Sources of the Political Thought of James Madison 30 (1981). It would be mindreading to attribute too much to this sentence if it were considered in isolation from the rest of Madison's thought, but it is a further warranty that the basic constitutive problem of district making was one that he considered important.

[FN30]. Davis v. Bandemer, 478 U.S. 109, 130 (1986); Gaffney v. Cummings, 412 U.S. 735, 753 (1973).

[FN31]. Peter Schuck, The Thickest Thicket: Partisan Gerrymandering and the Judicial Regulation of Politics, 87 Colum.L.Rev. 1325, 1361 (1987).

[FN32]. See, e.g., id. at 1341-45; Bruce E. Cain, Simple vs. Complex Criteria for Partisan Gerrymandering: A Comment on Niemi and Grofman, 33 UCLA L.Rev. 213, 225-26 (1985); Michael Barone & Grant Ujifusa, The Almanac of American Politics 1986 at 91; see also Davis, 478 U.S. at 152 (1986) (O'Connor, J., concurring). As the technology of gerrymandering becomes more powerful, however, we assume that these well-known risks will diminish.

[FN33]. See, e.g., Michael Barone and Grant Ujifusa, The Almanac of American Politics 1984 at 68, 378, 994 (discussing California, Indiana and Pennsylvania).

[FN34]. See, e.g., Out of the Districting Thicket, Wash. Post, Apr. 23, 1983, at A16; Barone & Ujifusa, supra note 33, at 74 (gerrymanders have little impact because effects "wear off" with time); Norman J. Ornstein, Genesis of a Gerrymander, Wall St.J., May 7, 1985 at 30 (disparities between votes cast for, and seats won by Democrats in House of Representatives attributable to partisan voting patterns, not gerrymandering).

[FN35]. This point is often made by those seeking to dismiss the impact of gerrymandering on politics. See, e.g., Schuck, supra note 31, at 1340; Ornstein, supra note 34.

[FN36]. See Warren Lee Kostroski, Party and Incumbency in Postwar Senate Elections: Trends, Patterns and Models, 67 Am.Pol.Sci.Rev. 1213 (1973); Robert S. Erikson, Research Note, The Advantage of Incumbency in Congressional Elections, 3 Polity 395 (Spring 1971).

[FN37]. The testimony given in Davis, for example, is fairly illustrative. "MR. SUSSMAN: 'What I would like you to do here again is to give me whatever reasons were operative to your mind in maintaining or creating ...

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districts ...' MR. DAILEY: 'Political.' MR. SUSSMAN: 'What were the political factors?' MR. DAILEY: 'We wanted to save as many incumbent Republicans as possible.' " Davis v. Bandemer, 478 U.S. 109, 116 n. 5 (1986); and elsewhere: "As one Republican House member concisely put it, '[t]he name of the game is to keep us in power.' " Id. at 177-78 (Powell, J., concurring in part and dissenting in part).

The same unguarded candor was exhibited by the late Rep. Phil Burton, who masterminded the 1980 California redistricting and is generally conceded to be one of gerrymandering's modern masters. He "publicly joked that his zig-zagging district lines were 'our contribution to modern art.' With respect to California's newly drawn Fifth Congressional District, then represented by his brother, Burton stated, 'Oh, it's gorgeous, it curls in and out like a snake.' " Frederick K. Lowell & Teresa A. Craigie, California's Reapportionment Struggle: A Classic Clash Between Law and Politics, 2 J.L. & Pol. 245, 246 (1985) (citations omitted). Burton considered his own behavior to be justified by offsetting Republican gerrymandering in places like Indiana. Id.

Rep. George Brown was one of the beneficiaries of Phil Burton's dexterity. In 1988, Brown told the Wall Street Journal's Paul Gigot: "a good gerrymander 'is essential. [This district] is probably safe for me for another two terms,' "—"just in time for another gerrymander in 1990," noted Gigot. "He then hopes to redraw 'a new, smaller seat that will be safely Democratic.' " Paul A. Gigot, Incumbent for Life: I Came, I Saw, I Gerrymandered, Wall St.J., Nov. 4, 1988 at A14.

[FN38]. See supra note 16.

[FN39]. Engstrom, supra note 5, at 282.

[FN40]. Robert G. Dixon, Jr., Democratic Representation: Reapportionment in Law and Politics 462 (1968), as quoted in Gordon E. Baker, Threading the Political Thicket by Tracing the Steps of the Late Robert G. Dixon, Jr.: An Appraisal and Appreciation, in Representation and Redistricting Issues in the 1980s 21, 31 (Bernard Grofman et al. eds., 1982).

[FN41]. Hearings Before the Committee on Government Affairs, U.S. Senate, on S. 596, A Bill to Provide a Fair Procedure for Establishing Congressional Districts, 96th Cong., 1st Sess. 211, 218 (1979); see also, Baker, supra note 40 at 32.

[FN42]. Daniel H. Lowenstein & Jonathan Steinberg, The Quest for Legislative Districting in the Public Interest: Elusive or Illusory?, 33 UCLA L.Rev. 1, 4 (1985).

[FN43]. On the importance of procedural due process, despite the lack of a precise definition, see Edmond Cahn, The Moral Decision 251 (1955).

[FN44]. Shapiro, supra note 21, at 228.

[FN45]. Lowenstein & Steinberg, supra note 42, at 4 n. 12.

[FN46]. See discussion following note 120, 121.

[FN47]. Schuck, supra note 31, at 1359.

[FN48]. Id.

[FN49]. Schuck illuminates another difference between gerrymandering and other "victory bonuses" when he argues that partisan gerrymandering is politically constrained—in other words, politicians will subject themselves

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to too much political heat if they overdo it. Schuck, supra note 31, at 1327 n. 19. Yet, if they have the votes, why should politicians hesitate to appropriate the "victory bonus" of gerrymandering? They do not hesitate to appropriate any other bonus. They are not ashamed to assert exclusive control over legislative agendas, although they hold the legislature by only a single vote. They are not ashamed to designate only members of their party as committee chairs. They are not ashamed to logroll and compromise and dispose of as much business as they can on straight party-line votes. Gerrymandering, however, is different: Politicians do not gerrymander under claim of right, and Schuck, it appears, is not willing to defend it on such terms.

[FN50]. 427 U.S. 347 (1976) (dismissals in the Cook County, Illinois, Sheriff's Department violated First and Fourteenth Amendments). Cf. Erwin Chemerinsky, Protecting the Democratic Process: Voter Standing to Challenge Abuses of Incumbency, 49 Ohio St.L.J. 773 (1988) (arguing that suits alleging abuse of incumbency are justiciable).

[FN51]. See generally Powell v. McCormack, 395 U.S. 486 (1969).

[FN52]. Many attempts have been made to quantify this "inflation." In theoretical computer models of single-member district systems there is a standard curve which correlates the pro-majority bias to the size of the majority. For any size of population and number of districts there is a formula for producing this curve known as the "cube law of politics," a reference to an exponent in the formula which is held constant and which provides an "index of proportionality." While the purely theoretical models have put this index at three, actual electoral systems vary widely, and index results ranging from 0.71 to 4.4 have been obtained. See Bernard Grofman, For Single-Member Districts Random is Not Equal, in Representation and Redistricting Issues in the 1980s, supra note 40, at 55.

[FN53]. Schuck, supra note 31, at 1359.

[FN54]. See supra note 30; see also Griffith, supra note 11, at 47 (discussing defensive use of districts in early state assemblies).

[FN55]. See Dahl, supra note 25, for discussion of "populistic" and "Madisonian" models of democracy; see Hermens, supra note 26, for a discussion of the relative merits of single-member and proportional representation systems.

[FN56]. The term "wasted votes" has two different meanings, although both are a form of electoral mischance. A vote for a losing candidate could be described as "wasted," as could all votes cast for a winner in excess of those necessary to constitute a majority. Given the fungibility of individual votes, no one could ever look at a given ballot and identify it as a part of the superfluous votes rather than as a part of the necessary majority, but in gross, as a statistical matter, the concept is both meaningful and clear.

[FN57]. All districting implicates this intent to some degree, but one cannot say that all districting is gerrymandering, any more than one can say that all influence is bribery. It is possible to district with more or less concern for partisan gain (although all plans will have a particular partisan effect). Gerrymandering is distinguishable as overreaching, as an excess, as something that "goes too far." While the distinctions may be hard to make, one is justified in trying to make them.

[FN58]. See, e.g., Picasso Democracy, Wall St.J., Aug. 24, 1987, at A12; Stacking the House, Wall St.J., Apr. 2, 1985, at A28; George F. Will, California Scheming, Wash. Post, Aug. 18, 1983, at A29; Gerryduck in Louisiana,

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N.Y. Times, Oct. 1, 1983, at A26; A Fair Blow at Foul Districting, N.Y. Times, June 24, 1983, at A24. See also, Griffith, supra note 11, at 18 (arguing that Federalist press used gerrymander illustration in connection with newly-coined word, for campaign purposes).

[FN59]. "A California Field Poll taken in April [of 1989] found that 41% of those polled had no opinion about the current redistricting plan. However, when voters were read a description of gerrymandering, a whopping 82% disapproved of the process." Assault on the Gerrymander, Wall St.J., Dec. 20, 1989, at A14.

[FN60]. One could use the same sort of rationalization to justify any form of vote fraud.

[FN61]. Paul E. Meehl, The Selfish Voter Paradox and the Thrown-Away Vote Argument, 71 Am.Pol.Sci.Rev. 11 (1977). As Meehl points out, a person's chances of influencing the outcome of an election are about even with his chances of getting killed driving to the polls. Id.

[FN62]. Id. at 14.

[FN63]. This question cuts very much deeper in the mathematically related context of people's behavior buying lottery tickets. For a sophisticated explanation, see Daniel Kahnemann & Amos Tverski, Choices, Values and Frames, 39 Am.Psychol. 341 (1984).

[FN64]. Meehl, supra note 61, at 24.

[FN65]. Id.

[FN66]. Indeed, foolishness would be to vote with anything other than an expression interest in mind. This analysis sheds light on the problem of "virtual representation," which concerns how a voter may be said to be "represented" when casting a vote for a losing candidate. See Black, supra note 18, at 131, 140-1; Davis v. Bandemer, 478 U.S. 109, 132 (1986). A rational citizen ought to view a vote not as a potential share of legislative power, but as a statement about democracy. The government's legitimacy does not depend on the results of elections, but on the fact that elections—real elections—are held. Thus the voter ought not feel disenfranchised as long as the electoral process was fair.

[FN67]. See, e.g., Bruce E. Cain, The Reapportionment Puzzle (1984); Schuck, supra note 31; Davis, 478 U.S. at 144 (O'Connor, J., concurring).

[FN68]. See, e.g., Lowenstein & Steinberg, supra note 42.

[FN69]. 369 U.S. 186 (1962).

[FN70]. 478 U.S. 109 (1986). See also Badham v. Eu, 488 U.S. 1024 (1989). The Court summarily affirmed the dismissal of a gerrymandering challenge to California's federal congressional districts, in which the district court, 694 F.Supp. 664, 670 (N.D.Cal.1988), simply applied the Davis criteria to the facts and found that the "effects" test (see discussion below) had not been met.

[FN71]. 377 U.S. 533 (1964).

[FN72]. 412 U.S. 735 (1973).

[FN73]. See discussion in Davis, 478 U.S. at 119-20, 123.

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[FN74]. Id. at 118-127.

[FN75]. Id. at 127-143.

[FN76]. Id. at 115; see id., 478 U.S. at 116 n. 5 & 177-78 (Powell, J., concurring and dissenting); see also note 37, supra.

[FN77]. Id. at 131.

[FN78]. Rogers v. Lodge, 458 U.S. 613, 624 (1982), as quoted in Davis, 478 U.S. at 131.

[FN79]. Davis, 478 U.S. at 132.

[FN80]. Id. at 125.

[FN81]. Id. at 132-33.

[FN82]. See, e.g., Washington v. Davis, 426 U.S. 229 (1976).

[FN83]. See, e.g., Davis, 478 U.S. at 139.

[FN84]. Id. at 132 n. 13.

[FN85]. Id. at 134 n. 14.

[FN86]. See id. at 171 n. 10. Justice White responded that "the effects test we cite was initially set forth in White v. Regester, 412 U.S. 755 (1973), which was decided before the Court expressly determined that proof of discriminatory intent was a necessary component of an equal protection claim." 478 U.S. at 139 n. 17. The invocation of White v. Regester is dubious. White did not directly address the interplay of discriminatory intent and effect, but it clearly relied on a history of intentional discrimination, citing, for example, an absence of "good-faith" in "racial campaign tactics," and "invidious discrimination and treatment in the fields of education, employment, economics, health, politics and [other areas]." White, 412 U.S. at 767-68.

The role of intent in Fourteenth Amendment discrimination cases is explained in Village of Arlington Heights v. Metropolitan Development Corp., 429 U.S. 252 (1977):

> Determining whether invidious discriminatory purpose was a motivating factor demands a sensitive inquiry into such circumstantial and direct evidence of intent as may be available. The impact of the official action—whether it 'bears more heavily on one race than another,' Washington v. Davis, supra, [426 U.S.] at 242—may provide an important starting point ... [[[But a]bsent a pattern as stark as that in Gomillion or Yick Wo, impact alone is not determinative, and the Court must look to other evidence.
>
> The historical background of the decision is one evidentiary source, particularly if it reveals a series of official actions taken for invidious purposes.... The specific sequence of events leading up to the challenged decision also may shed some light on the decisionmaker's purposes....
>
> The legislative or administrative history may be highly relevant, especially where there are contemporary statements by members of the decisionmaking body, minutes of its meetings, or reports. In some extraordinary instances the members might be called to the stand at trial to testify concerning the purpose of the official action, although even then such testimony frequently will be barred by privilege. Id. at

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266-68.

The Davis Court was thus on shaky ground in claiming that it would use the standards evolved in race bias cases as its guide. Had it undertaken the sort of "sensitive inquiry" envisioned in Arlington Heights, considering historical, testimonial and other evidence, it could hardly have failed to sustain the trial plaintiffs' position.

[FN87]. Davis, 478 U.S. at 138; see also id. at 142 n. 20.

[FN88]. Davis, 478 U.S. at 141.

[FN89]. See, e.g., id. at 141, 142 n. 20.

[FN90]. Id. at 132.

[FN91]. Id. at 135.

[FN92]. See id. at 156 (O'Connor, J., concurring).

[FN93]. Id. at 141.

[FN94]. Id. at 131-33.

[FN95]. Id. at 131 n. 12.

[FN96]. It is telling that the classic, effective gerrymanders in Indiana and California were not interdicted.

[FN97]. Davis, 478 U.S. at 135-36.

[FN98]. There is not even the incentive to shroud one's partisan designs in a decorous silence. See infra, note 37.

[FN99]. In response to a challenge by the dissent, the plurality suggested that "projected" election results may establish a case of gerrymandering. Davis, 478 U.S. at 139 n. 17. It seems highly doubtful that the Court would agree to adjudicate a contest among social scientists and statisticians when it was unpersuaded by the actual results in Indiana's elections.

[FN100]. See, e.g., Justice O'Connor's warning in Davis that reform will inevitably lead to a judicially managed form of proportional representation. Id. at 156.

[FN101]. Id. at 125 n. 9.

[FN102]. Id. at 127.

[FN103]. The analogy to race bias was misguided from the start. People are not born into a political party the way they are born into a race, regardless of what partisans may say. Discrimination against Republicans and Democrats cannot fruitfully be compared on any level to the historical exclusion of, and discrimination against, minorities.

[FN104]. See, e.g., 377 U.S. at 567-68.

[FN105]. Id. at 565. The Court continued: "With respect to the allocation of legislative representation, all voters,

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as citizens of a State, stand in the same relation regardless of where they live. Any suggested criteria for the differentiation of citizens are insufficient to justify any discrimination, as to the weight of their votes, unless relevant to the permissible purposes of legislative apportionment." Id. Justice Powell advocated a similar approach in Davis v. Bandemer: "When deciding where [district] lines will fall, the State should treat its voters as standing in the same position, regardless of their political beliefs or party affiliation." 478 U.S. at 166.

[FN106]. Gray, 372 U.S. at 380; see also Reynolds, 377 U.S. at 566-68; Baker, 369 U.S. at 207-08, 242, 253-54; Wesberry, 376 U.S. 1, 6, 14, 17-18 (1964).

[FN107]. See, e.g, Reynolds, 377 U.S. at 565-66 ("each and every citizen has an inalienable right to full and effective participation in the political processes of his State's legislative bodies"; "each citizen [shall] have an equally effective voice in the election of members"; "fair and effective representation for all citizens is concededly the basic aim of legislative apportionment.")

[FN108]. Id. at 561.

[FN109]. See Baker, 369 U.S. at 201-02, 208, 247-48; see also Reynolds, 377 U.S. at 554-55. For cases in which the right to vote was denied, see, e.g., Ex Parte Siebold, 100 U.S. 371 (1879) (ballot-box stuffing); United States v. Saylor, 322 U.S. 385 (1944) (same); United States v. Mosely, 238 U.S. 383 (1915) (failure to count votes); Ex parte Yarbrough, 110 U.S. 651 (1884) (physical assault of voters); Guinn v. United States, 238 U.S. 347 (1915) ("grandfather" laws and literacy tests); Lane v. Wilson, 307 U.S. 268 (1939) (same); Nixon v. Herndon, 273 U.S. 536 (1927) (statutes explicitly denying right to vote on account of race); Nixon v. Condon, 286 U.S. 73 (1932) (statutes which denied right to vote on account of race by allowing political parties to "set the rules" for voting in primaries).

[FN110]. Lucas v. Forty-Fourth General Assembly of Colorado, 377 U.S. 713, 744 (1964).

[FN111]. 369 U.S. at 299-300 (footnote omitted).

[FN112]. Reynolds, 377 U.S. at 563.

[FN113]. The "one person, one vote" principle is hardly a foundational norm, like the decision to have democracy in the first place. See, e.g., Wesberry, 376 U.S. at 20 (Harlan, J., dissenting) (malapportionment has always been the norm in American politics). Indeed, it is entirely possible that a seriously malapportioned legislature will provide "fair and effective" representation. Furthermore, the "one person, one vote" standard may actually work against "fair and effective" representation, for example in the case of a traditionally underrepresented minority group which would benefit if the law required a certain minimum group representation. See Shapiro, supra note 21, at 232-33 (discussing Justice Marshall's dissent in Mobile v. Bolden, 446 U.S. 55, 103 (1980)).

The work-a-day, non-platonic character of the equal population principle is indicated by the manner in which it is applied. For example, when the Court chooses "the total number of residents" as the population base to be equalized, it turns its back on other populations which could have been used as a base with equal plausibility—registered voters, potentially eligible voters, probable voters, citizens, adult citizens, or adults. See Burns v. Richardson, 384 U.S. 73, 91-97 (1966). We have no principled basis, other than the necessity of making a choice, for preferring "total populations" to another criterion. Each choice forecloses the possibility of "equality" in some other sense. The gross population standard that was chosen ignores differences in voter registration or turnout. It also has an unequal impact from state to state. The ideal congressional district in Idaho will

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have a population, based on the 1980 census, of about 472,000; in Oregon it will be 525,000, so one person's vote in Oregon will be worth about 89% of one person's vote in Idaho.

More revealing is the Court's treatment of permissible exceptions to the strict equal population standard in the context of state legislative districts. In order to establish a prima facie case of malapportionment in violation of the Fourteenth Amendment, claimants must show population variations of at least 10% between the largest and smallest districts. See Brown v. Thomson, 462 U.S. 835, 842-3 (1983). Any smaller deviations are within the discretion of the legislature. Yet even a discrepancy of greater than 10% may be allowed if the state offers evidence that it is pursuing a "rational state policy." Mahan v. Howell, 410 U.S. 315, 328 (1973). In Brown, the average population deviation between districts was 16%, and the deviation between the largest and smallest district was 90%. 462 U.S. at 838.

In short, the equal population standard only guarantees a minimum quantum of electoral process. These observations should temper the prejudice that the equal population criterion is somehow more important, more fundamental, less political, than other electoral rules.

[FN114]. Of course some actual diminution in the power of a voter does occur in elections held in malapportioned districts. The point is that the attenuation is in practice impossible to quantify, and by itself forms a poor basis for the justiciability of malapportionment.

[FN115]. Reynolds, 377 U.S. at 562-63.

[FN116]. See generally Shapiro, supra note 21, at 233-36 (discussing group rights).

[FN117]. Lowenstein & Steinberg, supra note 42, at 12-13.

[FN118]. Id. at 13.

[FN119]. Id. at 13-14.

[FN120]. Id. at 75.

[FN121]. Contiguity was, however, such a pre-constitutional principle. If one were committed to understanding the role of pre-political principles in drawing district lines, it is with contiguity, not equinumerosity, that one should begin. See infra part III.A.

[FN122]. Schuck, supra note 31, at 1327 n. 19.

[FN123]. See Mitch Betts, Gerrymandering Made Easy in 1990, Computerworld, August 28, 1989, pp. 1, 18 ("Burton" is "(Often used as a verb as in 'to Burton.') The late Congressman Phillip Burton, a San Francisco Democrat, drew an extremely partisan map for California's congressional districts after the 1980 census. It was designed to add five Democrats to the California delegation and slaughter Republicans.") For a good account of the brouhaha, see Lowell & Craigie, supra note 37.

[FN124]. One of the main reasons Schuck offers for thinking that gerrymandering is politically constrained in comparison to malapportionment is that gerrymanderers have to be active; they have to gerrymander and re-gerrymander, and every time they do it, they may have to fight. A malapportioner, on the other hand, can just sit and do nothing. Schuck, supra note 31. Although reapportionment cases dealt with district plans that had been passed more than 50 years earlier, the issue of apportionment/malapportionment was a constant irritant in legislatures, and at times it gave rise to strong controversy. Serious disputes arose more often than once in 10 years,

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and they consumed a great deal of legislative energy. See Richard C. Cortner, The Apportionment Cases (1970). The fact that these altercations did not result in the existing plans being modified does not prove the issue was not contentious; it is rather a tribute to the institutional gridlock that malapportionment had caused.

[FN125]. Schuck, supra note 31, at 1327 n. 19.

[FN126]. The contrary is probably closer to the truth. When he was Solicitor General and arguing in behalf of plaintiffs in one of the reapportionment cases, Archibald Cox privately believed that the "one person, one vote" standard would be so radical a departure from American political tradition that "the country would not accept it as law." Archibald Cox, The Court and the Constitution 288, 297 (1987).

[FN127]. See also note 59, supra.

[FN128]. Courts regularly prefer "fair process" standards over "actual prejudice" standards. For example, the Fourteenth Amendment right to equal protection may be violated where members of a racial group deliberately have been excluded from jury venire lists, see, e.g., Casteneda v. Partida, 430 U.S. 482 (1977), even though the jurors who were chosen were concededly fair judges of the facts. The constitutional right is violated, not by an unfair outcome, but by an unfair process. By contrast to a "fair process" approach, an "actual prejudice" standard will only overturn a result where a plaintiff has in fact been harmed by discriminatory action. One way of capturing the inconsistency of legal scholars who favor Baker but dislike Davis, and the inconsistency of the Davis plurality itself, is to note that they would apply "fair process" rules to apportionment cases, but only "actual prejudice" rules to gerrymandering cases.

[FN129]. We do not flesh out in this article the exact contours of an equal protection argument appropriate for a legal brief, but we note that discriminatory state action should be easy to prove, and that voting rights cases merit "strict scrutiny" under the Supreme Court's current doctrine. Even under the "rational relationship" test, gerrymandering would be hard to defend.

[FN130]. These voters would most clearly have standing. Two other categories of voters are arguably harmed by a gerrymander, but it is less clear that they would have standing. First, there are the statewide minority party voters who are deliberately placed in districts to create vote-wasting supermajorities (the "packing" phase of a gerrymander). They are targeted in some sense by the districting legislation, but the Davis plurality seems right in suggesting that they can claim no individual harm, since in their district they are part of a majority. 478 U.S. at 140-41. Second, there are the statewide majority party voters who are placed in the minority in one of those districts that were created by partisans to waste the votes of the other party. Although these voters are not members of the targeted political party, it would be logical to give them standing because they were deliberately placed in the minority in a partisan gerrymander. Although those voters might not want to bring a suit, because doing so could harm their party's power in the legislature, giving them standing is consistent with our emphasis on the individual harm caused by gerrymandering.

A last class of voters in a gerrymander, members of the statewide majority who are placed in the majority in their districts, would not seem to have standing, unless we conceded everyone standing because of an individual right to have the government constituted by fair process.

[FN131]. Majoritarianism does little to restrain partisan abuse, but it has one small virtue: it makes it difficult to win that last district. The twentieth district will be impossible to win unless the friendlies have the support of fifty-percent-plus-twenty.

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[FN132]. Ideally, to make these majorities as secure as possible, the friendlies would cede the one district to the unfriendlies by a margin of 100% to zero.

[FN133]. The only mathematical limit on this tactic is the requirement that the number of voters in an average district be at least twice the number of districts minus one. Thus our 20 districts must each contain at least 38 voters before we can assure wins in 19 districts with only 50% of the statewide vote. As a practical matter, the number of voters in a district will be much larger than the number of districts.

[FN134]. We have assumed apportionment on the basis of voter registration. If noncontiguous districts are apportioned by total population, the opportunities to influence elections are further increased. The crafty tactical move would be to create small majorities of voters by packing a district with nonvoting residents. In spirit, this maneuver is similar to creating one-person districts which are won by a vote of 1 to 0.

[FN135]. That is, 62.5% to 37.5%. The other 20% of the districts would be ceded to the opposition, which would carry them unanimously.

[FN136]. Specifically, the margins would be 55.56% to 44.44% in the contested districts, with the others being carried unanimously by the hapless unfriendlies. If confident enough to risk margins of only 5%, the friendlies could carry 95% of all districts, with the margin in contested districts at 52.63% to 47.36%.

[FN137]. This result depends on the same technique described earlier, where districts are ceded to the opposition by unanimous margins, thereby wasting the maximum number of opposition votes. The power of such a minority is greatly increased as its support increases beyond 25%. Thus, a party which wins 45% at the polls and controls the districting process can use this method to win 75f the seats.

[FN138]. The technique is to create a majority-minority split in each district which precisely mirrors the majority-minority split statewide. Thus a party that leads its opponent 55% to 45% in a state would create a 55-45 majority in every single district.

[FN139]. See, e.g., Grofman, supra note 9, at 84 ("Contiguity is a relatively trivial requirement and usually a noncontroversial one"); Richard G. Niemi, The Relationship Between Votes and Seats: The Ultimate Question in Political Gerrymandering, 33 UCLA L.Rev. 185, 187 (1985) ("That political districts should be contiguous—that all parts of a district should be connected—is not likely to be important in gerrymandering cases because it is relatively noncontroversial."). The technical definition of contiguity is satisfied when one can travel from one part of a district to any other part without having to leave the district.

[FN140]. See Grofman, supra note 9, at 177-80 (Table 3).

[FN141]. See, e.g., Wells v. Rockefeller, 311 F.Supp. 48 (S.D.N.Y.1970), aff'd., 398 U.S. 901 (1970); Badillo v. Katz, 73 Misc.2d 836, 343 N.Y.S.2d 451 (N.Y.1973); Holmes v. Farmer, 475 A.2d 976 (R.I.1984).

[FN142]. In Dillard v. Town of Louisville, 730 F.Supp. 1546 (M.D.Ala.1990), the court approved a district map submitted by the town council, intended to comply with the Voting Rights Act, in which the town's fifth district was divided into two separate parts. Id. at 1548-49. The only case we have found in which noncontiguous territories were amalgamated into one district, this precedent has radical implications of which the court was seemingly innocent.

Even where contiguity has been adhered to, ingenuity, even audacity, has sometimes been displayed. One

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federal case has established that a highway bridge is sufficient to establish contiguity. Wells, 311 F.Supp. at 53. California's Sixth congressional district "has four distinct and detached parts. Two are connected only by water, the other two by a narrow piece of land used for railroad yards." A Recipe for Gerrymandering, 1 Cong. Quarterly, State Politics and Redistricting 149 (1982). New York's City Council proposed a map that had one district connected "for nearly two miles" by "the Coney Island Boardwalk." The district was "not contiguous at high tide." Sam Roberts, Redistricting Oddities Reflect Racial and Ethnic Politics, N.Y. Times, May 7, 1991, at B1. The plan was rejected by the Justice Department for other reasons.

[FN143]. See, e.g., Peter J. Taylor, Graham Gudgin & R.J. Johnston, The Geography of Representation: A Review of Recent Findings, in Electoral Laws and Their Political Consequences 183, 188 (Bernard Grofman & Arend Lijphart eds. 1986) ("With no constraints except equal numbers of base units per district, the number of combinations of n base-units to produce m districts is given by ... n!/(m(n/m)!m!) ... With 20 base-units to be divided into 4 districts of 5 units each, this comes to 24,310 solutions! The addition of a contiguity constraint on the solutions will reduce this number. For Newcastle upon Tyne 20 wards combine into 334 solutions of contiguous patterns of 4 constituencies, for example.").

[FN144]. A rough analytic proof of this proposition proceeds as follows. First, consider any set of contiguous districts; imagine, for example, a chess board in which each square is a district. If we wanted the square at one corner of the board to include a resident of the square at the opposite corner, we could extend a thin tentacle from the first square that would wind along the existing boundaries of the other squares—never cutting through them—until it reached the target square. There it would stair-step around the current residents until it reached the target voter. If this can be done once, it can be done an infinite number of times. Of course districts may look quite awful. If the two squares on the opposite long diagonal wanted to swap some voters as well, they would have to extend contiguous tentacles around the boundary of the first district described above, which already cuts almost completely across the chess board. But it can be done. The only limiting assumption is that voters cannot reside precisely on the state boundary, so that there is room between them and it sufficient to insert a contiguous tentacle.

[FN145]. The available definitions of compactness, including one we hold to be the most workable, are discussed in part III.D. One may concede that, even in the absence of a compactness constraint, various real-world factors inhibit noncompact gerrymandering. For example, no line-drawer has yet had the chutzpa to run a district line through the middle of someone's bedroom (though shame did not prevent the creation of California's 32nd congressional district after the 1980 census), but even within these not-especially confining confines, partisan mapmakers can thrive. Where partisans are given a lever, they have proved willing to try to move the world. For an example of how skewed district populations were in the apportionment cases, see Maryland Com. for Fair Rep. v. Tawes, 377 U.S. 656, 665 (1964) (counties "with only 14.1% of the total state population" could elect a majority of the Maryland Senate; a population ratio of 32 to 1 existed between the least- and most-populous electoral counties; "Calvert County, where only 15,826 resided" was "entitled to one Senate seat, while Baltimore County, with a 1960 population of 492,428" was "likewise entitled to only one senator"). The criterion of contiguity has also been stretched to the limit. See supra note 141.

[FN146]. Scholars have long recognized that equal population alone is a mechanically inadequate constraint on gerrymandering, and that an overemphasis on that criterion is senseless and even counterproductive. See, e.g., Engstrom, supra note 5, at 278, 283 (emphasis on equal population has led to a "gerrymanderer's paradise"); Phil C. Neal, Baker v. Carr: Politics in Search of Law, 1962 Sup.Ct.Rev. 252, 278 (principle of equal population alone "may not be much more useful than one half of a pair of pliers"). Supreme Court justices have had the

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same intuition. See, e.g., Reynolds, 377 U.S. at 578-79 ("Indiscriminate districting, without any regard for political subdivision or natural or historical boundary lines, may be little more than an open invitation to partisan gerrymandering."); Wells v. Rockefeller, 394 U.S. 542, 555 (1968) (White, J., dissenting) ("Today's decisions on the one hand require precise adherence to admittedly inexact census figures, and on the other downgrade a restraint on a far greater potential threat to equality of representation, the gerrymander. Legislatures intent on minimizing the representation of selected political or racial groups are invited to ignore political boundaries and compact districts so long as they adhere to population equality....").

[FN147]. This figure of speech is borrowed from David R. Mayhew, Congressional Representation: Theory and Practice in Drawing Districts, in Reapportionment in the Seventies 249 (Nelson W. Polsby ed. 1971).

[FN148]. Although not absolutely impossible. See, e.g., Grofman, supra note 9, at 89-91 (Gerrymandering "can be found in plans with wholly compact districts as well as in plans with many noncompact districts."). See also Robert Dixon, Democratic Representation and Reapportionment in Law and Politics 459-461 (1968). Computers can endlessly crank out district plans which nevertheless conform to a fixed standard of compactness. Even under a constraint of compactness, an infinite number of district plans are still theoretically possible.

[FN149]. Statistical aberrations remain possible. In addition we can imagine two particular kinds of situations where inhibiting gerrymandering will harm proportional representation. First, under the Voting Rights Act it is possible that a minority could attain proportional representation to a greater extent than would ordinarily occur in single-member district elections. Second, a majority party may reach a bipartisan districting accord with the minority party where the effect is to closely approximate proportional representation. See Gaffney v. Cummings 412 U.S. 735 (1973) (upholding such an arrangement); Dixon, supra note 148, at 461; see also supra note 177 and accompanying text.

[FN150]. See Schuck, supra note 31, at 23; Davis v. Bandemer, 478 U.S. 109, 145 (1986) (O'Connor J., concurring).

[FN151]. See note 131 and accompanying text.

[FN152]. See infra part III.D for a discussion of the preferred standard of compactness.

[FN153]. At a certain level of compactness, arranging wins in 19 districts should become impossible in all but the statistically rarest cases, regardless of the availability and accuracy of voter information or the power of the computer. Put another way, beyond a certain level of compactness there probably will be no mathematical solution which will create majorities in nineteen districts, even though there will still be an infinite number of possible plans.

[FN154]. See Richard Morrill, Political Redistricting and Geographic Theory 21 (1981) ("Except in isolated instances, it is quite difficult to gerrymander compactly. In most plans, the consistent operation of a compactness criterion will have a random effect on political partisanship.").

[FN155]. Few would assert that the compactness standard would do literally nothing. See Grofman, supra note 9, at 90-1.

[FN156]. Dixon wrote of the "myth of compactness," and disparaged "a rigid compactness rule," yet he admitted that a "rule of compactness and contiguity, if used merely to force an explanation for odd-shaped districts, can

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have much merit." Dixon, supra note 148, at 460-1. In the same vein Grofman stated that "the usefulness of requiring that districts be compact has been vastly overrated," although he then conceded "its usefulness as an indicia of possible gerrymandering," and included it as one of 12 such indicators. Grofman, supra note 9, at 89, 118.

[FN157]. Lowenstein & Steinberg, supra note 42, at 23.

[FN158]. Id.

[FN159]. The same argument was suggested in briefs opposing justiciability in Davis v. Bandemer. See Brief of Appellants at 18, Davis, 478 U.S. 109 (No. 84-1244) ("A preference for compact and contiguous districts is really nothing but a policy decision in favor of political groups whose support is evenly distributed about a state."); Brief Amicus Curiae of the Assembly of the State of California Prior to Consideration of Jurisdiction at 13, Davis, supra.

[FN160]. Grofman calls their data "sketchy to the point of nonexistence." Grofman, supra note 9, at 92 n. 67. Indeed, their reliance on non-U.S. experience, together with their concession that their analysis of the demographic picture is oversimplified, calls into question whether reliance on this proposition, which is central to their argument, can be justified.

[FN161]. To date, we have not seen any proprietary studies. The difficulties of conducting this sort of inquiry are formidable. Mere differences in voter dispersion, if shown, would not prove this effect. Appropriate analysis must consider, by state, the number of voter districts, the size of the majority and minority parties' support based on turnout, the minimum necessary difference in victory margins between "packed" and "cracked" districts that will support a "natural" gerrymander (and this must account for the expected natural inflation inherent in single-member districts), and some measure of the expected average margin of victory in both the "packed" and "cracked" districts under a regime of compactness. The data must also satisfy a ceterus paribus assumption, somehow discounting all the other factors which we know influence elections—including the fact that current data on voting behavior may be skewed by the very existence and operation of gerrymanders. Enough knotty statistical issues must be overcome that probably the only way to settle this point is through empirical analysis—running thousands of computer models of compact districts and seeing what happens. Someday, somebody may do this and if so, here is our bet. First, except for cases of bipartisan gerrymanders, proportional representation will always be better served in a compact world than in a gerrymandered one. Second, any loss of Democratic seats will be traceable to the fact that Democrats do more gerrymandering. Third, there will be no discernible "natural" gerrymanders at all.

[FN162]. Lowenstein & Steinberg, supra note 42, at 27.

[FN163]. 369 U.S. 186 (1962).

[FN164]. See Shapiro, supra note 21, at 241.

> By the time of Reynolds, the Democrats had enjoyed a majority position among voters for state and national legislatures for thirty years. Nothing could have more clearly favored the Democratic over the Republican party than a one-person-one-vote standard, which is, after all, the ultimate majority-serving standard and was so intended.... Why did the one-person-one-vote standard sustain its "heavy burden of persuasion?" Because it placed a major constraint on the inevitable and otherwise incurable tendency of legislators to feather their own electoral nests. If compactness or any other standard serves to constrain

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> self-serving majority party and incumbent legislative behavior, then it meets its burden of persuasion even if it incidentally provides Republicans with even a little of the advantage that the one-person-one-vote standard gives Democrats.

Id. (footnote omitted). See also Cain, supra note 32, at 216 ("Given the fact that the equal population requirement is biased against the Republicans, how important is the consideration that compactness is (possibly) biased against the Democrats?").

[FN165]. It is inconsistent for Lowenstein and Steinberg to fail to point this out as a basis for opposing gerrymander reform. If there are no neutral ground rules for political discourse, it ought to be acceptable for those who favor the Democratic Party to oppose gerrymander reform for the blunt reason that, because Democrats get to do more gerrymandering, such a reform would hurt their party. Yet no one we know makes that argument—in public, anyway. By contrast, Lowenstein and Steinberg's voter-dispersion argument against compactness relies on the intuition that a natural gerrymander would be unfair because the choice of where to live is an "innocent" one—that is, it is not motivated by partisan design. Lowenstein and Steinberg thus tacitly acknowledge that there is such a thing as illegitimate partisan design.

[FN166]. Shapiro, supra note 21, at 240.

[FN167]. See, e.g., Cain, supra note 67, at 71-72.

[FN168]. See Grofman, supra note 9, 52, at 55-56.

[FN169]. 42 U.S.C. § 1973 (1975).

[FN170]. The divergence between Democratic and minority interests on the issue of redistricting already has resulted in some surprising collaborations between minorities and the Republican Party. See Richard L. Berke, Redistricting Brings About Odd Alliance, N.Y. Times, April 8, 1991, at A1; The Battle of the Pastry Cooks, Economist, May 18, 1991, at 27.

[FN171]. See generally United Jewish Org. of Williamsburg v. Carey, 430 U.S. 144, 158-59 (1977).

[FN172]. Cain, supra note 67, at 32-51.

[FN173]. Id. at 40. For example, "communities of interest" might refer to racial or ethnic minorities or, in a flood control district, to riparian owners of property along a river.

[FN174]. Id. at 35-6.

[FN175]. See Karcher v. Daggett, 462 U.S. 725, 756 (1982) (Stevens, J., concurring). Our argument stresses the prophylactic value of compactness in preventing gerrymandering over any other virtues it possesses. Yet commentators, Cain most prominently, have too quickly dismissed the independent normative value of compactness. See Cain, supra note 67, at 34-51. The geographical organization of districts has several things to recommend it. Most obviously, where one lives is a dominant fact in a person's life. (The slang expression "gets you where you live" captures the essence of this idea.) Contemporary academic writing undoubtedly has laid heavier stress on other aspects of life than geography, especially on race and socioeconomic standing, to sort out generalizations about people, but where you live, the geography statistic, gets you where you live as well. The strangers that impinge on one's life tend to live nearby rather than far away, and the public concerns of virtually every local community tend first of all to things near to home: property taxes, roads, public schools, police and fire service,

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snow removal, trash collection, and so on. The idea that "all politics is local politics" deserves more than grudging recognition. It is, in fact, the motivation behind having local district elections in the first place.

[FN176]. Indeed, we should prefer a less proportional, but procedurally fair election, to a proportional, but rigged one.

[FN177]. The value of such a policy has been ably discussed elsewhere. See, e.g., Cain, supra note 67, at 166.

[FN178]. 412 U.S. 735 (1973).

[FN179]. Baker v. Carr, 369 U.S. 186, 217 (1962).

[FN180]. For a compendium of proposed compactness measures, see Karcher v. Daggett, 462 U.S. 725, 756 n. 19 (1983) (Stevens, J., concurring). Justice Stevens briefly and somewhat inaccurately characterizes the Schwartzberg method that is proposed herein.

[FN181]. Shapiro, supra note 21, at 236-37.

[FN182]. For a good list of the "major proposed public interest criteria for legislative districting," see Lowenstein & Steinberg, supra note 42, at 11; see also Grofman, supra note 9; Cain supra note 67, at 52-77 (discussing "good government" criteria). Our intent is to define a district in a way that does not import into the definition other substantive criteria, for example, that it should be closely competitive between parties, or that it should encompass a "community," or that the population should live near the geographic center.

[FN183]. See, e.g., Lowenstein & Steinberg, supra note 42 at 11; Arend Lijphart, Comparative Perspectives on Fair Representation: The Plurality-Majority Rule, Geographical Districting, and Alternative Electoral Arrangements, in Representation and Redistricting Issues, supra note 40, at 143, 145-47. Grofman uncharitably suggests that these proliferations are so much argumentative rope-a-dope: "The argument that there is no way to measure partisan gerrymandering provides a smokescreen behind which gerrymandering can be hidden." Grofman, supra note 9, at 154.

[FN184]. Compactness is not the only antigerrymandering criterion that has been proposed. See, e.g., Niemi, supra note 139, at 195-201 (discussing the so-called "swing ratio," a sophisticated, incremental measure of proportional representation). Furthermore, many of the indicia of gerrymandering mentioned by Grofman, supra note 9, at 117-18 could probably be fashioned into formal restraints on gerrymandering.

Some commentators have suggested that strict adherence to existing political boundaries would prevent at least the worst excesses of gerrymandering. This approach is a false trail. As a practical matter, the constraining power of adhering to political boundaries is limited. Individual counties are often strangely shaped and noncompact considered by themselves, and the forms that can be created by sets of contiguous counties, even compact ones, can be made extremely noncompact. Further, the deviations which always will be necessary to conform to "one person, one vote" will remain entirely unconstrained. At best, adherence to political boundaries can serve as a rough approximation of a mathematical compactness measure, preventing, perhaps, the worst cases of gerrymandering. There seems to be no good reason, however, to settle for an approximation when infinitely more sensitive and discriminating compactness measures are available.

As a normative matter, existing political boundaries are only weak elements of good districting practice, and are routinely ignored whenever more important stakes are on the table. Many political boundary lines, especially county lines, are practically of marginal importance to most people. While courts have given these boundaries a

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certain amount of deference, especially in state legislative districting, see, e.g., Brown v. Thomson, 462 U.S. 835 (1983), there is little reason to believe that the quality of statewide or congressional representation would be enhanced by cleaving to them.

Ironically, political boundary lines are often the fossil record of old gerrymanders. In pre-colonial days, the boundaries of districts were constantly adjusted in response to transient political needs. Griffith, supra note 11, at 25. There is no obvious reason to enshrine these ancient gerrymanders, save the Burkean principle that any given status quo is entitled to a strong presumption. It is a venerable philosophy, but it was of little use to the Supreme Court in Baker, Reynolds, and Wesberry.

[FN185]. Iowa Code § 42.4(4)(b) (1981).

[FN186]. The Iowa measure also suffers from the odd defect that the same shape, when rotated slightly, may yield a different score. As the simplest example, consider an equilateral triangle with sides of 10 miles. Its base runs from east to west, and obviously measures 10 miles. Its north-south measurement will be the height of the triangle, or about 8.7 miles. Yet if the triangle is rotated even slightly, then its northernmost and southernmost points exist at two of the corners, at a distance of 10 miles; and at the same time its easternmost and westernmost points are defined at two corners, again at a distance of 10 miles; as a result its score is perfect.

[FN187]. Morrill, supra note 154, at 22. The term "diameter" undoubtedly means any line segment whose endpoints bisect a district's perimeter. A definition of diameter that does not require literal bisection means that any line segment can be rendered arbitrarily small.

[FN188]. There are an infinite number of districts having any specified ratio of X to Y between the maximum and minimum diameters. Gerrymanderers will hate some of these possible districts and will love others, but Morrill's measure would score them exactly equal. The measure is also capable of producing anomalous results. Depending on a district's shape, it may be true that an irregular addition to a district's perimeter will shift the endpoints of the diameters in such a way that the Morrill score will actually increase.

[FN189]. One measure is based entirely on an analysis of a shape's "indentedness." Peter J. Taylor, A New Shape Measure For Evaluating Electoral District Patterns, 67 Am.Pol.Sci.Rev. 947 (1973). It gives perfect scores to all shapes which are convex. Id. at 948. Because the measure does not account for elongation of a shape, a long, thin strip of land would score better than a square with one small indentation. The standard also does not recognize curved lines, but must have them "converted" to straight lines before calculating indentedness. Id. at 950.

[FN190]. Ernest C. Reock, Measuring Compactness as a Requirement of Legislative Apportionment, 5 Midwest J.Pol.Sci. 70 (1961).

[FN191]. Above all this measure favors districts where the points at the perimeter are more or less equidistant from a shape's center. The worst scoring shapes under this regime are long and thin.

[FN192]. A measure proposed on two 1990 California ballot initiatives (both of which were defeated) seems to have similar shortcomings. See Legislative Ethics Enforcement Initiative § 7(i)(6) (1990); Independent Citizens Redistricting Initiative, art. IV A, § 6(b)(6). The measure, common to both, divides the population subsumed within a district, by the population of the straight-edged polygon which circumscribes that district. The former divided by the latter cannot fall below a certain percentage. In its technical aspects this measure has the same "concavities" problem as does Reock's measure. A five-pointed star circumscribed by a pentagon, for example,

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would allow ample leeway for a gerrymanderer to ply his trade in the concave spaces between the spikes of the star. Further, if the majority of a district's population were centered in one area, the remainder of the population could be acquired by tentacles which could range far and wide across relatively unpopulated areas. One version of the initiative recognizes this problem, and specifies that "[p] opulous adjacent territory shall not be bypassed to reach distant populous areas." Independent Citizens Redistricting Initiative, art. IV A, § 6(d)(4). There is, however, no accepted understanding of terms like "bypass" and "populous adjacent territory."

The second problem with the measure is that it imports a substantive criterion into the definition of compactness, favoring districts where the majority of the population lives near the center. Nothing in principle is wrong with this feature, but this paper is meant to show that one can define compactness in a way that prevents gerrymandering without pretending to know what "good" districts look like.

[FN193]. James B. Weaver & Sidney W. Hess, A Procedure for Non-partisan Districting: Development of Computer Techniques, 73 Yale L.J. 288, 296 (1963); Henry F. Kaiser, An Objective Method for Establishing Legislative Districts, 10 Midwest J.Pol.Sci. 200 (1966).

[FN194]. This central point may also be conceptualized as the "average location" of a shape. It is thus analogous to the statistical technique of determining the "least squares" line to describe graphic data. See Weaver & Hess, supra note 193, at 296-97.

[FN195]. Iowa's second statutory measure of compactness combines both these concepts in an exotic hybrid: "the ratio of the dispersion of population about the population center of the district to the dispersion of population about the geographic center." See Iowa Code § 42.4(4)(c) (1981).

[FN196]. Aficionados will appreciate why this is so. The three figures would have only slightly different centers of gravity, but the distance squared to the furthest-flung points would be dramatically different. As with Reock's measure, the center of gravity standard is consistent within its terms. Our argument is simply that these must be the wrong terms because they do not prevent gerrymandering. Note, however, that in regard to the "independent" value of compactness (e.g. defining communities of interest, or making travel in the district easier) the center of gravity standard is adequate.

[FN197]. See Brown v. Thomson, 462 U.S. 835 (1983).

[FN198]. In Acker v. Love, 496 P.2d 75 (Colo.1972), the court propounded a measure whose advantages and defects are similar to both the Reock and to the center of gravity standards. A compact district was defined as "a geographic area whose boundaries are as nearly equidistant as possible from the geographic center of the area being considered ..." 496 P.2d at 76. (The standard arguably contravenes the one embodied in the Colorado Constitution. See infra note 200.) The result is a reasonable test, although, like the center of gravity test, it is insensitive to deviations that are oriented more or less perpendicular to the district's center. In other words, spikes of identical size and shape score differently depending on which way they point.

[FN199]. Joseph E. Schwartzberg, Reapportionment, Gerrymanders, and the Notion of "Compactness," 50 Minn.L.Rev. 443 (1966).

[FN200]. Colorado's state constitution, one of two with a compactness provision, incorporates the minimum line length standard. Colo. Const. art. V, § 47. Although this is one of the best of the compactness measures, for unknown reasons Colorado's judges have chosen to ignore it in favor of the contrived standard of Acker v. Love; see, e.g., In re Reapportionment of the Colorado Gen. Assembly, 647 P.2d 209, 211 (Colo.1982).

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Michigan is the other state with a constitutional compactness provision. It requires, somewhat impenetrably, that districts be "as rectangular in shape as possible" but does not further define the standard. Mich. Const. art. 4, § 2. See generally Grofman, supra note 9, at 84-86; 177-183.

Dixon has gone so far as to use the minimum line length criterion as a definition of compactness, apparently without extended analysis. Robert Dixon, Fair Criteria and Procedures for Establishing Legislative Districts, in Representation and Redistricting Issues, supra note 40, at 16. Common Cause has chosen the standard as its preferred method of enforcing district compactness. See Bruce Adams, A Model State Reapportionment Process: The Continuing Quest for 'Fair and Effective Representation,' 14 Harv.J. on Legis. 825, 874-75 (1977).

[FN201]. Compare Karcher v. Daggett, 462 U.S. 725, 756 (1983) (Stevens, J., concurring) ("To some extent, geographical compactness serves independent values; it facilitates political organization, electoral campaigning, and constituent representation."), with Cain, supra note 67, at 34, 50-51 (discussing intrinsic value of compactness); see also infra note 175.

[FN202]. Common Cause suggests an allowable deviation of five percent. Common Cause, Toward a System of "Fair and Effective Representation," (Washington, D.C.1977) at 51.

[FN203]. Schwartzberg, supra note 199.

[FN204]. The compactness of any shape can be obtained by using the following formula: (4 times pi, multiplied by the district's area) divided by (the square of the length of the district's perimeter.)

This is not literally Schwartzberg's measurement, but a variant. Instead of using the ratio of areas, he used perimeters. Thus the "relative compactness" of a shape "may be determined by finding the ratio of its perimeter to the perimeter of a circle of equal area." Schwartzberg, supra note 199, at 444. Both formulae really measure the same thing, and are mathematically translatable—the modification proposed here yields a score that is always the inverse of the square of that yielded by Schwartzberg's method. But our measure is easier to use and understand. It yields scores as a fraction between "zero" and "one," with "one" being the highest. Schwartzberg's method yields scores on a scale from "one" to "infinity" (again with "one" being the best). Hence, the significance of a Schwartzberg score may be comparatively difficult to grasp. Our variant is close enough to the original that we refer to it throughout as Schwartzberg's measure.

[FN205]. For example, squares, regardless of size, score .785. Comparing each shape to a circle with a similar perimeter is mathematically equivalent to setting all perimeter lengths equal to the same number of fictional units and then comparing areas. Grofman's preferred measure of compactness—perimeter divided by the square root of the area—achieves the same standardizing effect. Grofman, supra note 9, at 85-6 n. 42.

[FN206]. Adopting the principle of Schwartzberg-compactness would present a minor problem of practical administration, namely, what one does with jagged natural boundaries like rivers, coastlines, and so on. It would make little sense in terms of inhibiting gerrymandering to penalize mapmakers for distorted boundaries which they had no hand in making. The entire problem disappears if we adopt a simple convention. Let mapmakers draw any fictional, "rounded" lines they want for the purpose of determining the compactness score, provided that: (1) all land actually in a district must be contained within its rounded boundaries; and (2) neither water, nor land which is not part of a district, may be included in the "area" component of the Schwartzberg calculation.

These rules guarantee that any boundary lines drawn over water or other states will be as short as possible. The most avid gerrymanderer would have no reason to elongate lines over water because this would needlessly degrade the score by adding perimeter without adding area. Lines drawn according to these two rules would al-

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ways be straight, and move directly from each natural outcropping to the next. So, for example, if all of eastern Texas were a single district, the Gulf Coast boundary would be compassed by a single straight line from Port Isabel to Sabine Pass, well to the seaward of both Corpus Christi and Galveston. Similarly, if all of southwest Texas were a single district, the "rounded" line would cross over a good deal of Mexican territory.

The "rounded" boundary will hug a coastline or other irregular natural contour in the same way a rubber band would if it were stretched over a scale model of that feature. The artificial line will describe a shorter perimeter—the choice of scale will determine how much shorter—than the actual boundary would. This will neutralize the effect of natural contours on the district's compactness score.

Situations may still arise where mapmakers are able to use natural borders to accomplish partisan gerrymandering. The rounding convention will make it hard to identify these situations. These "natural" opportunities should be rare, however, and can be dealt with, if it is thought necessary to do so, by the adoption of some standardized unit of border measurement, as Schwartzberg himself suggested.

[FN207]. Think of a perfectly circular district, with a perimeter of 100 miles and an area of about 795 square miles. Its Schwartzberg score is perfect: 1.0. If a "spike" of two miles (one mile out and one mile back) is added which does not add any appreciable area, the score is degraded to a .96. If a similar four-mile spike is added, the score becomes a .92; and it drops to a .83 for a ten-mile addition (five miles out and back).

[FN208]. Further, an outcropping from one district will typically (though not always) result in an indentation in another, so the overall score will tend to be adequately penalized.

[FN209]. A constitutionally permissible goal of legislative districting; see Reynolds v. Sims, 377 U.S. 533, 578 (1964).

[FN210]. See Gaffney v. Cummings, 412 U.S. 735 (1973).

[FN211]. 42 U.S.C. § 1973 (1988).

[FN212]. Another constitutionally permissible goal of legislative districting, see, e.g., Davis v. Bandemer, 478 U.S. 109, 116, 176-77 (1986).

[FN213]. In this way the Schwartzberg measure avoids the general criticism of compactness found in Niemi, supra note 139, at 190 ("[W]hen boundaries have to be violated, there is presently no objective way to measure the significance of alternative divisions ... it is difficult to see how the Court can set standards for compactness for respecting political and community boundaries."). Also beside the point is the observation that there is nothing "desirable per se about districts that look like squares or circles," or that it is "rare indeed to find regular geometric figures ... that can be aggregated into neat geometric patterns," Grofman, supra note 9, at 90, or that the circle is an improper ideal because it cannot be "tiled" like a hexagon or square, Charles H. Backstrom, Problems of Implementing Redistricting, in Representation and Redistricting Issues, supra note 40, at 50. Neither shapes of a particular kind, nor "tiling" is contemplated by the standard. (Variations in population density make tiling impossible in any case.)

[FN214]. See generally Dahl, supra note 25, at 145-151.

[FN215]. Israel's Knesset, more a cultivar than a dandelion, is very rational in design, very defensible in theory, very representative, very democratic, very proportional, and yet, in operation, a very cranky vessel of democratic practice. See generally Samuel Sager, The Parliamentary System of Israel (1985). See also Gregory S.

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Mahler, The Knesset (1981). Mahler's diagram of the evolution of Israel's political parties (Figure 2.1 at 40) makes graphic how fluid and dispersed Israel's political life has been.
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TAB 2

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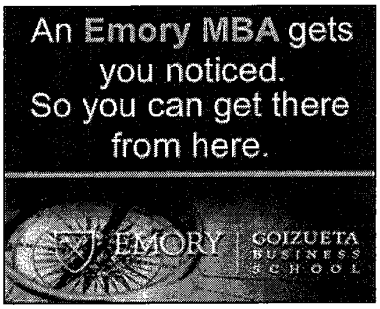

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Court Rejects Appeal of Redistricting Plan : Politics: Ruling clears the way for implementing the new boundaries for the 1992 elections. Plan still faces review by the U.S. Justice Department.

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January 29, 1992 | PHILIP HAGER | TIMES LEGAL AFFAIRS WRITER

SAN FRANCISCO — A federal court panel Tuesday rejected a bid by congressional Democrats and a Latino legal group to overturn the new California reapportionment plan approved Monday by the state Supreme Court.

In a three-page order, the three-judge panel moved swiftly to clear the way for implementation of the plan for the 1992 elections. The new boundaries are widely expected to give Republicans a chance to control the state Assembly and possibly win a majority of the state's congressional seats.

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While the ruling made clear that the court would not intervene before the elections this year, the court did not preclude future challenges—when there would be time for more extensive proceedings—to the validity of the plan under the federal Constitution and the Voting Rights Act.

The plan also still must be reviewed by the U.S. Justice Department before this year's elections to ensure that it adequately protects the voting strength of racial minorities.

Denise Hulett, a lawyer for the Mexican American Legal Defense and Educational Fund, expressed disappointment with the ruling but said the group would make no further challenge to use of the plan in the 1992 elections. Hulett said a renewed effort--seeking a full-scale trial--to overturn the plan would be made before the 1994 elections. Meanwhile, she said, MALDEF will urge the Justice Department to withhold approval of the plan.

An attorney for the Democratic congressional delegation could not be reached for comment and it was not known whether the group would take the issue to the U.S. Supreme Court.

Daniel Kolkey of Los Angeles, a lawyer for Gov. Pete Wilson, said it was very likely the plan would be used in this year's elections. "There could not have been a more fair process than the one used by the

FROM THE ARCHIVES

Ruling Cites Bias Against Latino Voters : Court Eases Way for Challenge of At-Large Elections in California
July 28, 1988

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state Supreme Court in adopting these districts," Kolkey said. "This ought to ensure that we have fair districts in California for the upcoming elections."

In a 6-1 ruling Monday, the state Supreme Court approved with only a minor change a redistricting plan prepared at its direction by a special panel of three retired state appeal court justices.

The hotly contested redistricting issue had been taken to the high court by Wilson after the Republican governor and the Democratic-controlled Legislature failed to agree on a plan establishing new boundaries for the remainder of the decade.

Anticipating high court approval of the special panel's plan, lawyers for most of the Democrats and MALDEF went to federal district court here challenging the congressional boundaries under the plan.

The two groups contended the plan did not adequately follow one-person, one-vote guidelines and protect minority electoral power as required by the federal Voting Rights Act. They asked the three-judge panel to adopt alternative plans they proposed. Lawyers for Wilson defended the state plan and urged the federal court to stay out of the matter and recognize the state Supreme Court ruling as the final word.

In an order signed by U.S. District Judges Fern M. Smith and Charles A. Legge, the federal panel said it was denying the request made by the Democrats and MALDEF and would explain its reasons in an opinion to be issued later.

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The third panel member, Judge Thomas Tang of the U.S. 9th Circuit Court of Appeals, issued a concurrence calling the order a "narrow" one and saying that the Democrats and MALDEF had only "not made a sufficiently strong showing" to warrant blocking the plan for use during the forthcoming election.

"Our decision does not foreclose further proceedings in this court addressing the constitutionality and consistency with the Voting Rights Act of the California Supreme Court's plan," Tang wrote.

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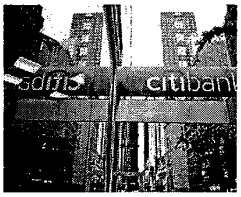

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Political Redistricting

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Redistricting Redefines Campaigns : Politics: In the newly drawn 41st District, for example, Republicans may have a chance to capture what was once considered solid Democrat territory.

Recommend

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CAMPAIGN '92: ASSEMBLY: Second in a series examining the candidates and the new legislative and congressional districts.

March 15, 1992 | NANCY HILL-HOLTZMAN | TIMES STAFF WRITER

Political redistricting makes for strange bedfellows.

Artsy, urban Santa Monica and bucolic Hidden Hills, communities seldom spoken of in the same breath, will share a legislator in the state Assembly for the next decade.

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It's the newly drawn 41st Assembly District, one of four new Westside districts up for grabs this November.

The district runs west from the San Diego Freeway (405), and then south of Sunset Boulevard it cuts farther west to take in Santa Monica; it then stretches northwest to the Ventura County line, taking in huge chunks of the West San Fernando Valley.

It is Westlake Village and Pacific Palisades, Calabasas and Brentwood, Malibu and Tarzana. About half the voters are north of Mulholland Drive.

The 41st appears to be a swing district. Democrats outnumber Republicans 49% to 40% among registered voters, but Republicans tend to be more loyal to their party's nominees and more likely to vote, so many observers rate the district as a tossup. In 1988, the voters of the 41st area narrowly went for George Bush over Democrat Michael S. Dukakis, but in 1990 they favored Democrat Dianne Feinstein over Republican Pete Wilson in the gubernatorial race.

Assemblyman Tom Hayden (D-Santa Monica) has taken himself out of the picture, opting instead to run for the state Senate. So Assemblyman Terry B. Friedman (D-Los Angeles), running in what is mostly a

FROM THE ARCHIVES

GOP Wins Late Rep. Natcher's Seat in Long-Democratic...

May 25, 1994

new district for him, is all alone on the Democratic side.

Sensing a chance to capture what has been Democratic territory, five Republicans are competing for the right to take on Friedman.

"It's a winnable district," said Republican candidate Christine Reed. "It's not a walkaway for either party."

The other three Westside Assembly districts appear less likely to generate suspense in a general election. Two are solid Democratic territory, and the other appears to be safely Republican.

Assemblyman Burt Margolin (D-Los Angeles) is running in one of the Democratic districts, the 42nd, in which 58% of the registered voters are Democrats and 29% are Republicans. The district consists of most of the Westside north of Wilshire Boulevard and east of the San Diego Freeway.

Even safer turf for Democrats is the 47th Assembly District, with a lopsided 75%-to-16% edge in party registration. Assemblywoman Gwen Moore (D-Los Angeles) will seek to return to Sacramento representing this area, which includes Culver City, Palms, Baldwin Hills and Crenshaw.

Venice and Mar Vista have been cut loose from their Westside moorings to become the north end of the 53rd Assembly District, a mostly South Bay district that takes in Torrance and the southern beach cities. Republicans outnumber Democrats 44% to 42%.

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Santa Monica College
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In the hotly contested Republican primary in the 41st Assembly District, the candidates are:

Reed, 48, a former four-term Santa Monica city councilwoman who calls herself a pro-choice, pro-environment fiscal conservative who is moderate on social issues. She calls Friedman a "tax-and-spend liberal," and, like all challengers, plans to make his incumbency an issue if she wins the primary. "Voters are asking for changes," she said.

Former Santa Monica College trustee Fred Beteta, 62, a retired engineer who challenged Tom Hayden two years ago and offers a conservative plank of "reforms, reforms, reforms," stressing education and tightening up illegal immigration as a drain on resources. Beteta favors the voucher system, under which students attending private schools would receive public subsidies.

Santa Monica attorney Scott Meehan, 31. A conservative who is active in Heal the Bay, Meehan says he will mount a grass-roots effort in his first bid for office. He already has 100 volunteers canvassing the district, and he says they have told him that the economy is the overriding issue in the race. "In Westlake Village," he said, "people wake up on a daily basis and wonder, 'Is my job secure?' " Meehan promises to ease regulations and red tape to make the state friendly to business.

Accounting professor Paul Foote, 45, of Agoura Hills. He assisted Beteta in his bid to oust Hayden two years ago and was itching to take on Hayden this year. Foote, a conservative, is interested in giving a boost to business and clamping down on top-heavy school districts by requiring them to reduce overhead expenses. "These Assembly races boil down to two things," he said. "How many slate mailers can you get on, and how much money can you raise?"

Malibu businessman Stefan (Stu) Stitch is also on the ballot. Efforts to reach him for comment on his candidacy were unsuccessful.

While the Republicans slug it out until the June 2 primary, Friedman, who already has $150,000 in the bank, can raise money, get acquainted in the parts of the new district he hasn't represented and prepare for the general election in November.

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TAB 4

J. MORGAN KOUSSER
California Institute of Technology

Estimating the Partisan Consequences of Redistricting Plans—Simply

Although some judges and political scientists have recently questioned the idea that it is possible to predict the partisan consequences of redistricting plans, I demonstrate that it is simple to do so with a pair of OLS equations that regress voting percentages on major party registration percentages. I test this model on data for all California Assembly and congressional elections from 1970 through 1994, and compare it to more complicated equations that contain incumbency and socioeconomic variables. The simplest equations correctly predict nearly 90% of the results. I show that analogous equations using registration or votes for minor or even major offices in California, North Carolina, and Texas can also predict outcomes with considerable accuracy. Using these equations, I show that the so-called "Burton Gerrymander" of 1980 had minimal partisan consequences, while the nonpartisan plan instituted by the California Supreme Court's Special Masters in 1992 was nearly as biased in favor of the Republicans as the proposal of the Republican party. I also introduce a new graphic representation of redistricting plans and conclude with a discussion of some seemingly methodological choices that have important substantive implications for assessing the fairness of redistricting plans.

Can Gerrymandering Be Quantified?

Is it possible to measure partisan gerrymandering directly and reliably? Can it be done even before an election takes place under a proposed redistricting scheme, or even if a plan is never put into effect? Although politicians have generally believed that they could quite accurately determine the partisan consequences of redistricting plans, some judges and political scientists have recently scorned this belief, while others have implicitly cast doubt on it by focusing on the intricacy of lines between districts as an indirect indication of an intent to gerrymander. For example, in 1992, California Chief Justice Malcolm Lucas, a Republican and former law partner of the Republican governor who appointed him to the state's highest court, curtly rejected extensive evidence that a redistricting plan drawn under the auspices of three judges who had been appointed by Republican governors was meant to

damage Democrats: "[P]redictions of future election contests are quite obviously speculative and imprecise, involving the weighing of countless variables" (*Wilson* v. *Eu* 1992, 727). Similarly, in his provocative analysis of town-level registration and election statistics from Massachusetts and Connecticut, political scientist Mark E. Rush contends that voters' allegiances to parties are too weak and shifting for redistricting to have very determinable consequences. Consequently, Rush concludes, courts should abandon the attempt to adjudicate partisan gerrymandering announced by the U.S. Supreme Court in the 1986 Indiana case of *Davis* v. *Bandemer*: "[I]f we cannot determine a town's partisan profile, we cannot make the claim that a districting system is unfair to one of the parties, because we cannot say with certainty where the parties-in-the-electorate are located" (Rush 1993, 96).

This paper rejects the contentions of Lucas and Rush and suggests that we do not have to resort to such indirect measures of partisan gerrymandering as compactness (Polsby and Popper 1991, 336), because a simple, unequivocally politically neutral test that uses widely available data is quite reliable. Unlike other measures of partisan bias (Gelman and King 1990; Grofman 1983; King 1989; King and Browning 1987; Niemi 1985), the index of party strength presented here may be computed before an election has been held and it offers strong insights into the intentions of the redistricters (as indicated by the partisan consequences of their plans) and into just how those intentions are put into effect. The test is not only more intuitively meaningful, less dependent on complex statistical theory, and therefore easier for political activists, reporters, judges, and other interested parties to use than sophisticated variants of seats-votes ratios (Gelman and King 1990, 1994a, 1994b), but the simulations it suggests are more clearly tied to the specific electoral history of a jurisdiction than are those in more general, abstract schemes. I test the method on extensive data from California and more limited information from North Carolina and Texas.[1] I also introduce a new, revealing, and simple graphic representation of redistricting plans. It may be that courts should avoid partisan political thickets, but if so, it is not because they cannot find their way. Justice Byron White was right when he wrote that "[I]t requires no special genius to recognize the political consequences of drawing a district line along one street rather than another" (*Gaffney* v. *Cummings* 1973, 752–53).

The Basic Model

Nearly 90% of the winners in California Assembly and congressional contests from 1970 through 1994 can be predicted correctly with two elementary equations estimated by ordinary least squares regression:

$$(1)\ \%D = B_{01} + (B_{11} * \%Dreg) + (B_{21} * \%Rreg) + u_1$$
$$(2)\ \%R = B_{02} + (B_{12} * \%Dreg) + (B_{22} * \%Rreg) + u_2$$

where

%R = Republican percentage of the total (not just two-party) vote, by district;[2]

%D = Democratic percentage of the total vote, by district;

%Rreg = Republican percentage of the total (not just two-party) registration, by district;

%Dreg = Democratic percentage of the total registration, by district;

the B's are the relevant OLS regression coefficients; and

u = an error term.[3]

I estimated these equations separately for each election year for each legislative body. Thus, for instance, the 1970 Democratic percentage of the votes for all Assembly candidates was regressed on a constant term and on the October 1970 percentages of the total registration (including minor parties and independents) for the Democrats and for the Republicans in each Assembly district. From this, one can calculate predicted Democratic percentages of the total vote for each Assembly district. I then performed a regression of the Republican percentage of the vote on the same independent variables, which enabled me to calculate a predicted Republican percentage in each district.[4] Overall, 52 regressions were run—one for each year from 1970 through 1994 for Congress and for the Assembly. The results of these equations are listed in Table 1.

Besides the R^2s and standard errors of the regressions, which indicate a fairly highly predictive model by social scientific standards, two assessments of the uncertainty of the predictions were performed.[5] The first focuses on whether the relationships between partisan registration and the vote were constant across all the districts in the state. If they were not, then many of the winners predicted by the equations in Table 1 would not be the actual winners. Yet when the predicted winners are calculated, and those calculations are compared to the actual victors, they agree 90% of the time (89.1% for the Assembly and 91.6% for Congress).[6] The second assessment takes the coefficients from Table

TABLE 1
Statistics for Party Registration Regressions
(t statistics in parentheses; SER = standard error of the regression)

Year	Intercept		Democratic Registration		Republican Registration		R^2	SER
Panel A: Assembly Democratic Vote Percentages								
1970	2.55	(2.41)	−0.150	(−1.35)	−0.030	(−2.71)	0.73	.10
1972	2.04	(2.16)	−0.010	(−0.98)	−0.025	(−2.48)	0.61	.12
1974	2.29	(3.84)	−0.013	(−2.10)	−0.026	(−4.07)	0.65	.09
1976	1.40	(1.87)	−0.004	(−0.44)	−0.018	(−2.24)	0.52	.14
1978	0.79	(1.23)	0.002	(0.34)	−0.011	(−1.55)	0.39	.16
1980	1.04	(2.35)	0.001	(0.13)	−0.017	(−3.18)	0.60	.14
1982	0.93	(1.97)	0.002	(0.44)	−0.015	(−2.76)	0.70	.13
1984	1.58	(2.45)	−0.005	(−0.65)	−0.022	(−2.99)	0.63	.16
1986	1.70	(3.48)	−0.007	(−1.23)	−0.022	(−4.04)	0.76	.11
1988	1.30	(2.50)	−0.002	(−0.38)	−0.017	(−2.90)	0.73	.11
1990	1.63	(2.52)	−0.006	(−0.88)	−0.020	(−2.73)	0.59	.13
1992	0.91	(2.77)	0.001	(0.35)	−0.012	(−3.04)	0.72	.10
1994	1.35	(5.49)	−0.004	(−1.40)	−0.018	(6.14)	0.85	.07
Panel B: Assembly Republican Vote Percentages								
1970	−1.80	(−1.72)	0.017	(1.59)	0.033	(2.94)	0.73	.10
1972	−1.55	(−1.69)	0.015	(1.55)	0.031	(2.94)	0.62	.12
1974	−1.43	(−2.38)	0.015	(2.29)	0.028	(4.23)	0.65	.09
1976	−0.61	(−0.79)	0.006	(0.69)	0.020	(2.40)	0.49	.14
1978	0.19	(0.30)	−0.002	(−0.34)	0.011	(1.55)	0.39	.16
1980	−0.23	(−0.51)	0.001	(0.15)	0.019	(3.50)	0.61	.14
1982	−0.09	(−0.19)	−0.001	(−0.16)	0.017	(3.02)	0.70	.13
1984	−0.77	(−1.15)	0.007	(0.89)	0.024	(3.16)	0.62	.16
1986	−1.01	(−2.10)	0.010	(1.83)	0.026	(4.73)	0.78	.10
1988	−0.72	(−1.26)	0.006	(1.00)	0.022	(3.40)	0.72	.12
1990	−1.00	(−1.76)	0.010	(1.57)	0.024	(3.69)	0.66	.12
1992	−0.26	(−0.78)	0.002	(0.51)	0.016	(3.94)	0.73	.10
1994	−0.62	(−2.44)	0.006	(2.21)	0.021	(7.02)	0.86	.07
Panel C: Congressional Democratic Vote Percentages								
1970	−1.79	(−0.87)	0.030	(1.42)	0.150	(0.71)	0.65	.12
1972	−0.46	(−0.33)	0.017	(1.15)	0.000	(0.05)	0.63	.12
1974	−0.80	(−0.70)	0.022	(1.78)	0.004	(0.35)	0.69	.11
1976	0.28	(0.28)	0.009	(0.85)	−0.006	(−0.59)	0.63	.11
1978	1.13	(1.52)	−0.000	(−0.04)	−0.017	(−2.04)	0.68	.11
1980	1.13	(2.05)	−0.000	(−0.10)	−0.018	(−2.82)	0.67	.11
1982	0.92	(1.66)	0.001	(0.24)	−0.014	(−2.14)	0.71	.10
1984	1.49	(2.06)	0.004	(−0.50)	−0.022	(−2.66)	0.72	.12
1986	1.52	(2.17)	−0.004	(−0.52)	−0.021	(−2.58)	0.75	.11
1988	2.06	(2.86)	−0.010	(−1.23)	−0.026	(−3.20)	0.75	.11
1990	−0.18	(−0.25)	0.014	(1.64)	0.000	(0.00)	0.66	.11
1992	0.83	(2.29)	0.002	(0.45)	−0.011	(−2.48)	0.77	.08
1994	1.27	(3.77)	−0.003	(−0.82)	−0.017	(−4.28)	0.86	.07
Panel D: Congressional Republican Vote Percentages								
1970	2.59	(1.23)	−0.028	(−1.29)	−0.014	(−0.62)	0.62	.12
1972	1.00	(0.72)	−0.013	(−0.85)	0.004	(0.28)	0.64	.12
1974	1.64	(1.30)	−0.020	(−1.50)	−0.003	(−0.22)	0.64	.12
1976	0.49	(0.53)	−0.007	(−0.70)	0.009	(0.92)	0.68	.10
1978	−0.25	(−0.34)	0.001	(0.18)	0.018	(2.22)	0.69	.10
1980	−0.49	(−0.84)	0.004	(0.64)	0.022	(3.24)	0.66	.12
1982	−0.16	(−0.23)	0.001	(0.17)	0.016	(1.91)	0.57	.13
1984	−0.56	(−0.81)	0.005	(0.61)	0.022	(2.69)	0.72	.12
1986	−0.71	(−0.91)	0.006	(0.24)	0.023	(2.71)	0.73	.11
1988	−1.30	(−1.76)	0.012	(1.47)	0.029	(3.44)	0.76	.11
1990	0.52	(0.88)	−0.005	(−0.90)	0.006	(0.85)	0.69	.09
1992	0.07	(0.18)	−0.002	(−0.34)	0.011	(2.24)	0.72	.09
1994	−0.10	(−0.32)	0.007	(0.19)	0.015	(3.78)	0.87	.07

Source: Computed from registration and vote percentages in *California Journal* and reports of the California Secretary of State.

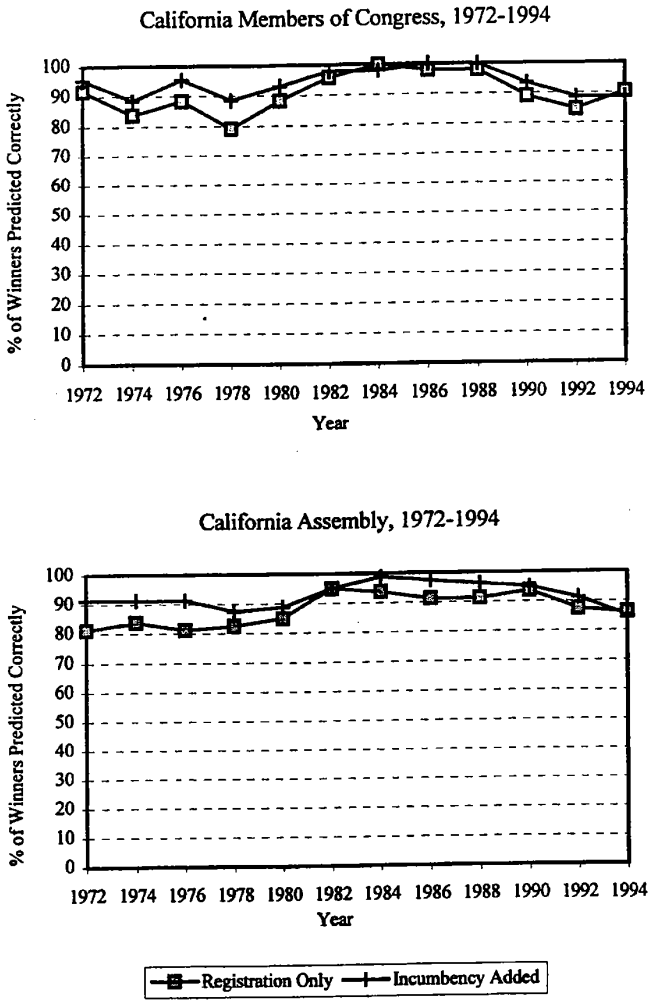
1 and combines them, for each year separately, with the registration data from the succeeding election, calculates the expected winners, and compares them with the actual winners. Thus, the coefficients for the 1970 Assembly election are multiplied by the relevant registration percentages for each district in 1972 to predict 1972 winners, and so on for other years. Despite the repeated political upheavals in California during this period (Watergate, Proposition 13, the 1982 recession, the 1990–92 recession, the 1994 Republican surge—see Kousser, 1995b), these out-of-sample predictions correctly call the winners 88.7% of the time—only slightly less than if they are used to predict the elections in each district in the years they are based on.

Figure 1, which gives the proportions of winners predicted correctly by the equations for the previous election (as well as for an equation that includes incumbency, to be explained below), also shows that the predictions are approximately as good in years spanning redistrictings as in pairs of years within the same redistricting regime. If, as Rush argues, partisan gerrymandering is practically impossible because voters' loyalties are shattered when the boundaries of their home districts are redrawn, then the predictions for the 1974 Assembly or 1982 congressional contests, for instance, ought to be less accurate than those for the 1972 Assembly or 1980 congressional races.[7] In fact, they are more accurate. As a glance at the graphs show, the reliability of the predictions of the first post-redistricting years, with all the shuffling of lines and the increase in the number of open seats that generally takes place, is not noticeably different from that in other elections. And for the purposes of assessing the effects of proposed or actual redistricting plans, winning, not the percentage of variance explained or the results in subsections of a district, is the best test of predictability, for in elections in single-member districts, it is finishing first that counts.[8]

How Important Is It to Add Incumbency and Other Variables?

Of the factors that account for the other 10% of the results and the other third of the variance in vote percentages, probably the most important in the past has been incumbency. Politicians and journalists agree with political scientists that incumbency is potent, and both formal and informal estimates of the effect of redistricting often take incumbency into account (Cain 1985; Gelman and King 1994a, 1994b). Incumbents are better known than most challengers and have more opportunity to build their reputations and obligations through constituency

FIGURE 1
Speculative and Imprecise?
Predictions from Basic Model and With Incumbency Added



service; incumbents are also more experienced in campaigning, more familiar with their districts, can raise funds more easily, and, as is sometimes overlooked, occupy inherently safer seats. Over a 13-year period that spans five different redistricting arrangements in California, the margins of Democratic registration over Republican registration in the districts of Democratic incumbents averaged 30.8% in Congress and 31.8% in the Assembly. By contrast, Republican Assembly incumbents occupied seats in which the number of Republican registrants, on average, equaled Democratic registrants, while Republicans enjoyed very slight registration margins in the congressional districts of Republican incumbents. The same margins in open seats fell almost exactly between the party extremes, with means of 15.1% for Congress and 13.6% for the Assembly.[9] In equations predicting election outcomes, therefore, incumbency should not be expected to add a great deal to explanations that already include party registration, because there is so much collinearity between the independent variables.

Incumbency is least useful in predicting overall results during an election year just after a redistricting, because that is when there are the most open seats. In four California cases after a redistricting (1972, 1974, 1982, and 1992), 21.4% of the congressional districts had no incumbent; in the other nine contests, only 8.0% did not have an incumbent. The analogous figures for the Assembly are 25.3% and 14.9%, respectively. Furthermore, term limits, which force state legislators out and often up in a maximum of 6–8 years in California, are sure to reduce the proportion of seats occupied by incumbents in the Assembly and, because of more frequent challenges from unemployed state legislators, in Congress as well. Incumbency therefore seems likely to be less and less important in predicting the effects of a redistricting, as suggested by the convergence of the lines after 1990 in both parts of Figure 1.

To test for the added effect of incumbency, we merely add to the previous equations another term I, where I = 1 if the incumbent is a Democrat,[10] 0 if the seat is open, and −1 if the incumbent is a Republican. The lines connecting the crosses in Figure 1 show that appending such a term to the equations predicting the Democratic vote increases the proportion of winners predicted correctly from 88–90% without the term to 91–94% with it.[11] Incumbency improves our ability to predict outcomes then, but not by very much. This is a convenient result, for it is impossible for outsiders to predict with certainty which incumbents will declare their candidacies for particular seats in plans that have not yet been put into place or that may never be adopted.[12]

The closeness of the two sets of lines in Figure 1 makes us more confident that we can go ahead and project winners even before we know who is running.[13]

As a final indication of how well party registration predicts the vote in California, consider how much more successfully we or someone who was drawing district lines could guess the results of particular plans if we had a great deal of socioeconomic data available, in addition to party registration. If we regress vote percentages on 11 socioeconomic variables,[14] plus party registration and incumbency, and we use the resulting regression coefficients to predict the outcomes in each district, we actually make one more mistake in prediction for California congressional elections in 1984 than we do if we use only registration in our prediction equation.[15] For 1980, we make exactly the same number of errors—five—whether the prediction equation includes only party registration, or party registration and incumbency, or party registration and incumbency and the socioeconomic variables. For 1976, we improve our results a good deal—making five fewer errors—if we take incumbency into account, but we gain nothing by this measure when we add 11 attributes of socioeconomic status for each district. The conclusion is that on the district level, partisan registration is a good shorthand for a set of socioeconomic and attitudinal variables that produce outcomes.

Other States and Other Indicators of Partisanship

Is the apparent power of this simple model merely due to an extraordinary level of partisan division in the California electorate? Does it work well in other states, particularly in states in which party registration figures aggregated at the appropriate levels are not readily available? Which, if any, proxies are best to use in lieu of registration?

To answer these questions, I applied the same basic model as above to similar data for North Carolina congressional contests from 1980 to 1992.[16] Registration alone predicts, on average, three-fourths of the 11 or 12 contests correctly; when we add incumbency, we increase the accuracy to seven-eighths—a very respectable level in a state with relatively few seats, two of them, the fifth and the eleventh districts, quite marginal in the 1980s.

In Texas, which does not compile party registration figures, returns from down-ticket races from 1988 to 1992 predicted 1992 congressional contests quite well, and gubernatorial and senatorial returns were also good predictors. Texas insiders consider the statewide partisan elections for the Court of Criminal Appeals good measures of baseline

partisanship. If one regresses the 1988, 1990, and 1992 Democratic percentages for these contests separately on the 1992 Democratic congressional returns, one can predict the winners in 91.1% of them correctly. Returns from the 1988 Senate and 1990 governor's races, similarly regressed on the 1992 congressional returns, produce accurate estimates of the victors in 88.4% of the cases.

While the State of California does not publish returns for lesser statewide offices aggregated by legislative or congressional districts, it does provide totals for Senate and governor and ballot propositions at those levels. Regressions based on returns for senatorial and gubernatorial races do almost as well at predicting Assembly and congressional returns as those computed from Assembly and congressional returns themselves, but supporters and opponents of prominent ballot propositions have not divided along party lines nearly so reliably. In particular, regressions involving the races for governor in 1978, 1982, and 1990 and for U.S. Senator in 1982 correctly predict 88.8% of the Assembly and congressional contests for these three years, compared to 91.8% for the self-regressions and 89.1% for the lagged predictions. In contrast, predictions based on the 1978 property tax limitation initiative (Prop. 13), 1982 handgun control initiative (Prop. 15), and 1990 legislative term-limits initiative (Prop. 140) are generally less accurate predictors of congressional and Assembly election results, averaging only 76.5% correct. If one is forced to rely on returns from other contests to make estimates of the partisan consequences of a redistricting, then, one should first choose minor statewide offices, then major statewide offices, and finally ballot propositions. On this evidence, at least, regressions based on the offices, minor or major, will provide reliable predictions.[17]

The Nonpartisan 1992 Plan and the Burton Gerrymander

Now that we have validated this simple technique, we can illustrate its usefulness by estimating interesting counterfactuals and projections that bear on the intents and effects of various districting plans. Suppose that the 1992 congressional election in California had not been run under the plan adopted by the state court-appointed Special Masters, but under the plan Democrats most strongly preferred, and with the party registration percentages that were in effect when the final choices between plans were being made in November 1991. To project these results, one merely multiplies the percentages in each district under the Democratic plan by the parameters in the regression equations (from Table 1) that are based on the actual 1992 results.

In 1992, a Democratic candidate for Congress in an average district in California won 57.1% of the two-party vote, and the Masters' plan rewarded the party with 30 of the 52 seats, or 57.7%—a very small bonus for a single-member district plan.[18] Under the Democrats' favorite plan, there would have been 33 Democratic victories (63.5%), while under the Republican proposal, Democrats would have received but 24 seats (46.2%)—that is, a Democratic landslide would have been transformed into a substantial Republican victory through the magic of line drawing.[19]

Another sort of hypothetical prediction that can be calculated from the OLS results can be applied to plans even before any elections have been held under any of them. This is particularly important because Justice Byron White's plurality opinion in *Davis* v. *Bandemer* specifically sanctions the use of "projected election results" to determine whether an "electoral system is arranged in a manner that will consistently degrade a voter's or a group of voters' influence on the political process as a whole," a determination that, four members of the court held, is necessary to a finding of unconstitutionality (*Davis* v. *Bandemer* 1986, 2810, 2814, n. 17). This method provides a readily computable means of making such projections and one that has been extensively validated on real data.

Suppose that the redistricters combined parameters for the immediate pre-reapportionment election (or, in principle, for any other election) with the party registration figures under their plans to project results. What would they find if they did so for the 1990 California election, multiplying the relevant regression parameters by the party registration percentages in each district for their preferred plan? Democrats won 55.7% of the two-party vote in the average congressional district in California in 1990 and received 57.7% of the seats, a modest winner's bonus, under the plan in effect during the 1980s, the so-called "Phil Burton gerrymander." Under the 1991 Democratic plan, they would have won 61.5% of the seats; under the Masters' plan, 50%; under the Republican plan, 48.1%. That is to say, an objective observer who relied on the patterns of voter behavior in the election preceding reapportionment would have expected Democratic candidates to fall significantly short of proportional representation if they competed in districts drawn by the Masters or Republicans, but to gain more seats than their share of votes under the Democratic plan.

Another interesting comparison is between the districts drawn by another group of Special Masters in 1973 in California and those of the now legendary Burton gerrymander, which a Republican lawyer once denounced as "the most egregious partisan gerrymander, not only of

this decade but any other decade as well."[20] In the 1980 election, which was conducted under the Masters' plan, Democratic candidates received 50.1% of the two-party vote in the average district and won 22 of 43 congressional seats (51.1%). In the 1982 elections, they received 53.6% of the votes and 62.2% of the seats. If in 1980 the boundaries had remained the same, but the regression relationships between party registration and voting had been those of 1982, Democrats would have won 27 of 43 seats, which works out to be exactly the same percentage of seats (62.2%) that they actually received under the Burton plan in 1982. If the court-drawn boundaries in effect in 1980 are taken as a criterion of partisan fairness, then by this measure there was no partisan bias in the Burton plan. The trends in 1982, a year of Republican recession, were simply more favorable to the Democrats than trends in 1980, a year of Democratic stagflation. In the opposite case, in which the behavior is that of 1980 and the lines are those of 1982, Democrats would be estimated to win 26 of 45 seats (57.8%), instead of the 28 (62.2%) they actually did win. Putting both hypothetical situations together suggests that in a bad year for the Democrats, such as 1980, the party could expect to gain two more seats under the Burton plan than under the previous Masters' plan. In a good year for the Democrats, such as that of the "Reagan recession" of 1982, the party could expect to do equally well under either plan. The Burton partisan gerrymander was largely a fiction.[21]

Using Recent History to Assess the Fairness of Redistricting Plans

Two other types of hypotheticals illustrate the range of probable outcomes if voters shifted their registration or their degree of partisan loyalty uniformly across the state—changes like those that must be anticipated by redistricters, although they would not expect them to be so geographically uncomplicated. Judges, journalists, political scientists, and other observers might use the results of these simulations to assess various facets of the fairness or other characteristics of different plans: Do different plans treat reasonably foreseeable pro-Democratic or pro-Republican shifts symmetrically? How do the plans compare in the number of seats that are expected to switch parties when voters' loyalties vary as much as they did over the previous decade? While it is possible that simulations based on different guesses about partisan trends may yield slightly different judgments about the comparative fairness of different plans, they may at least allow us to eliminate particularly unfair plans.

TABLE 2
Projected Number of Congressional Seats
that Would Be Won by Democrats in California
if Registration or Crossover Behavior Shifted

Plan as of November 1991	None	+2%D	+6%D	+2%R	+6%R
Panel A: Registration Shifts					
Democratic	33	35	35	32	29
Masters	28	29	32	27	24
Republican	24	27	33	24	24
Panel B: Parameter or Crossover Shifts					
Democratic	33	34	35	32	31
Masters	28	28	30	27	25
Republican	24	27	32	24	24

Between February and November 1992, the difference between the percentage of registered Democrats and Republicans in the average district in California increased by 2.6% in a Democratic direction. From 1972 to 1976, the same margin rose by 6.5%; whereas from 1982 to 1990, it dropped by 6.8%. This suggests that redistricters might want to allow for registration swings of approximately 2% to 6% over the decade-long natural life of a reapportionment plan.

The calculations outlined above, which are based on registration patterns noted when the plans were being compared to each other publicly between November 1991 and late January 1992, project Democratic seat totals of 24 under the Republican plan, 28 under the Masters' plan, and 33 under the most Democratic plan. Starting from this baseline, assume that every district became 1% more Democratic and 1% less Republican by November 1992—a shift that, for instance, would change the registration in a 53% Democratic, 39% Republican district to 54% and 38%. Then, as Table 2, Panel A shows, Democrats would win 27, 29, and 35 seats, respectively, under the Republican, Masters', and Democratic designs. If the shift went the other way, increasing net Republican registration by 2% in each district, Democrats would win 24, 27, and 32 seats under the three plans.

Alternatively, starting from the same baseline, suppose that the party registration in 1992 was the same as it was in November 1991, but that the relevant regression coefficients changed by a net of 2%, first in a Democratic direction, then in a Republican. Democrats would then win 27, 28, and 34 seats under the Republican, Masters', and

Democratic plans if the changes were in their favor, but only 24, 27, and 32 seats if the changes were against them. If the changes in either registration or crossover were 6% instead of 2%, the shifts in seats according to the partisan plans would probably be distorted mirror images of each other. Had their plan been adopted, Democrats would have stood to lose 2–4 seats if the electorate shifted sharply towards the Republicans. However, had the Republican plan taken effect and had there been substantial Democratic trends in the electorate, Republicans would have been likely to lose 8–9 seats, because Republicans sacrificed more safety than the Democrats did, apparently in order to maximize their number of victories if registration or voting patterns stayed roughly constant. Although the authors of nonpartisan plans often claim to foster competitiveness, the Masters' plan actually created no more marginal seats than the Democratic plan would have and only about half as many as the Republican plan, if a change in patterns similar in magnitude to that in each of the two previous decades were to occur in the 1990s. In the simulations as well as the point estimates, the effects of the 1992 Masters' Plan are considerably closer to those of the Republicans than to those of the Democrats.

A Graphic Method for Comparing Redistricting Plans

The close relationship between partisan registration and electoral outcomes suggests a graphic means of comparing plans that demonstrates their patterns of packing opposing partisans into a small number of districts and stacking their opponents in districts just below an expected threshold of victory—the classic stratagems of redistricting. For each plan, subtract the Republican from the Democratic percentage of registration in each district, and then rank order the districts (independently for each plan) from the least to the most Democratic. Displaying the margins on the vertical axis and arraying the districts, in their partisan order, on the horizontal axis, put two (or possibly more) plans on the same graph. As Figures 2 and 3 show, the comparisons can be very revealing. While the left tail of Figure 2 shows that Democrats packed a higher proportion of Republicans into heavily Republican districts, the right tail demonstrates that Republicans did the reverse to Democrats. The consequences of this packing, as well as of clever and careful line-drawing by each party, are highlighted in the middle of the graph, in the districts that had between a 0% and 20% Democratic registration margin. Republicans kept as many districts as possible below an 8% Democratic registration margin, and then jumped abruptly to

FIGURE 2
Registration Margin, Congress
Republican Plan vs. Democratic Plan

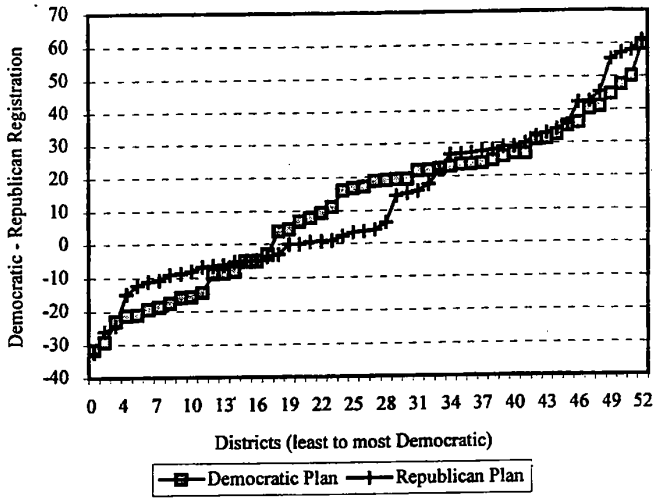
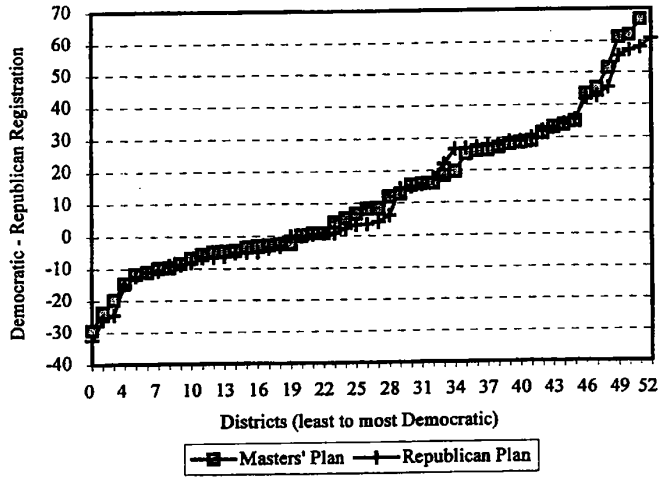


FIGURE 3
Registration Margin, Congress
Masters' Plan vs. Republican Plan



districts that were about 15% more Democratic than Republican. Conversely, Democrats created as many districts as possible that had a 15% Democratic margin and only two that had between an 8% Democratic margin and a slight Republican registration advantage. Neither side liked marginal districts—both seemed to agree that the definition of a marginal district was one that had a Democratic registration advantage of between about 8% and 15%—and each was sufficiently crafty that it did not need to make risky bets to gain a substantial partisan advantage. But as Table 1 demonstrates, the Republicans were somewhat more optimistic in late 1991 than the Democrats were, drawing 4–5 more districts that they apparently thought had just enough of a partisan advantage in their favor to be safe.

Figure 3 shows that the pattern of registration in the supposedly nonpartisan Masters' plan differed from that of the Republicans only in minor details. In the middle of Figure 3, the ascent of the Masters' plan is somewhat smoother than that of the Republican plan—enough to account for a 2–3 seat difference in expected outcomes under varying conditions—but the dominant impression is of the similarity between the registration patterns in the two plans. It is not surprising that Republican leaders greeted the unveiling of the Masters' plan with barely concealed glee.[22]

Should Partisan Bias Be Defined as a Deviation from Symmetry?

Gelman and King (1994a) are only the most thorough of those recent scholars who define partisan bias as a "deviation from partisan symmetry" over an arbitrary range of jurisdiction-wide vote percentages centering on 50% for each of the two major parties. There are three problems with this definition. First, rather than partisan bias, they may be uncovering different degrees of risk aversion and/or different proportions of incumbents (who often press successfully for very safe seats) in the major parties. Second, averaging these figures over standardized ranges may distort, as well as blur our picture of the nature of competing redistricting plans. Third, if what we are trying to capture in our notion of bias is the practical manipulation of a particular electoral structure, then we should take account of the specifics of expected behavior, not just the abstract characteristics of a generalized system. Measuring symmetry around 50% is illogical if that is not the partisan balance expected by those who struggle over redistricting.

Suppose both parties want to maximize their number of seats in a legislature that is redistricting itself, but that party R is willing to accept

a good deal more risk than party D is. Both parties will try to pack as many opposing partisans in as few districts as possible, but party R will draw more districts in which it expects to win by a bare margin than party D will. Call the percentage of core partisan support at which each party expects to win by a very small margin that party's tipping point. If there is a dramatic shift across the electorate toward party D, then party R will lose a great many seats. A corresponding shift toward party R will not, we assume, cost party D so dearly. But in more normal times party R will win more seats for a given vote than its more risk-averse opponent. If the range over which simulated results are calculated is so small that it includes the tipping point for party R but not for party D, then the Gelman-King measure may find the system biased in favor of party D.

In light of these difficulties, it seems preferable to speak of comparative, rather than absolute bias among competing plans; to distinguish risk aversion from bias by comparing the plans at several points rather than averaging, as in Gelman and King's Figure 4 (1994a, 547); and to use the recent history of shifts in party registration or exemplary elections, as well as regression parameters based on them, to project the range of likely variations over the life of a redistricting plan (as in Table 2 or Figures 2 and 3 above). In a word, bias should be measured more comparatively, concretely, and specifically. There is no such thing as bias in redistricting in general. Since gerrymandering is always specific to a particular regime of political behavior, attempts to measure it should be as well.

Should Fairness Be Gauged by Statewide Vote Totals?

The fact that Section Two of the Fourteenth Amendment to the U.S. Constitution apportions members of Congress to the states by total population, rather than by voting age population, registration, or turnout would seem to imply that states should do likewise, and courts have often so held (e.g., *Calderon* v. *City of Los Angeles* 1971; *DeWitt* v. *Wilson* 1994). Scholars should follow suit not only for constitutional, but also for normative reasons.[23] Turnout varies widely from district to district and is especially low among poorer ethnic voters, the core of the Democratic constituency. For instance, in 1992 only 8.4% of the population in the overwhelmingly Latino, heavily noncitizen 33d Congressional District in Los Angeles County voted in the contested general election for Congress, while at the same time 41.8% of the population in the 36th Congressional District, an affluent Anglo area, turned out.

Those who would assess the "fairness" of the distribution of seats by the statewide average, rather than the proportion averaged by districts implicitly take the position that the residents of the 36th should be counted five times as heavily as those of the 33d. Such a standard would disproportionately disadvantage poorer people and Democrats.

It might be, however, that the difference between the statewide average and the average computed by district was a function not only of differential turnout, but of how the various plans sorted people into districts. Democrats might waste as many Republican votes as possible by packing high-turnout Republican areas into as few districts as possible, thereby creating more low-income, low-turnout districts that Democrats could carry. But in fact, if we use parameters from the 1990 and 1992 regressions to simulate results under eight different proposed plans from both parties and outside groups and then calculate the means of the district vote percentages under each plan, there is almost no variation between the resulting averages.[24]

Do Shifts in Sub-Districts Prove that Redistricting Makes No Difference?

Rush (1993) criticizes seats/votes ratios and other measures of the effects of reapportionment because year-to-year shifts in voting behavior in Massachusetts and Connecticut towns are not uniform, and because ratios of changes in seats/votes ratios measured at the state level are not always the same from one election to the next. Both criticisms concentrate on the wrong level of aggregation. The first is too low, overemphasizing idiosyncratic factors within state legislative or congressional districts that are rarely large enough to change election outcomes. Small shifts one way or the other may lower R^2s, but not push an otherwise losing candidate over the threshold of a plurality *of a district*, which is the much more relevant statistic for actual politics. The second is too high, for, as explained above, seats are allocated by population, not votes. Furthermore, differences in the responsiveness of seats to votes at different levels of vote percentages are evidence of partisan bias and differences in redistricters' risk aversion. They are evidence that redistricting *does* make a difference, rather than the contrary.

Conclusion

By emphasizing the predictability of election outcomes, I do not mean to imply that there is no art involved in redistricting or campaigning. Clever drawing of lines can certainly affect which candidates run and

win, and the more unconstrained the designer of the boundaries is, the more leeway there is to affect the partisan balance. Hardworking, attractive, well-spoken, well-funded candidates can sometimes prevail in spite of poor odds, while lazy, poor, inarticulate, or scandal-plagued candidates or aspirants whose views are too far from those of their constituents can, from time to time, overcome their party's natural advantages. But in the Darwinian world of politics, parties will eventually nominate fitter candidates, and the genius of reapportionment lies in rearranging people of known political proclivities. While it is true that the party registration equations err about 10% of the time, it seems improper to lay too much emphasis on the uncertainty of political predictions about election outcomes.

Using the simple methods outlined in this paper, anyone can compare the partisan effects of different systems of districting. If the most important aspect of reapportionment is who wins and who loses under alternative plans, not whether the districts conform to some geographer's mathematical model of compactness or whether the process by which they are drawn is formally partisan or nonpartisan, the validation of techniques for projecting partisan biases may help restore a proper focus to scholarly and popular evaluations of redistricting.

No doubt candidates and campaigns affect voters' decisions. If they did not, democracy would be impossible because voters would be immovable. But democracy would also be impossible, or rather, meaningless, if elites could manipulate voters at will, changing their behavior radically by slightly altering the stimuli to masses who had neither interests nor stable opinions. If democracy works, redistricting can change outcomes.

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NOTES

Micah Altman and Gary King improved this paper, but should be exempted from any responsibility for the errors and infelicities that remain.

1. For an extensive discussion of the facts of the California redistrictings from 1971 through 1991, see Kousser 1995b.

2. In contemporary California, about 13.5% of the eligibles register with the Libertarian, Peace and Freedom, or Green parties or decline to state a party registration. The percentages vary widely from district to district and over time with a standard deviation in November 1992 of 2.7% and a range from 5% to 20%. The number and strength of minority party candidates also differ considerably across space and time. To test whether it would be worth typing in much more data, rather than, in effect,

subsuming the effects of nonmajority party registrants in the intercept term, I ran regressions similar to equations 1 and 2 but explicitly included the registrants from all but one nonmajority party (to avoid multicollinearity) for three election years: two excellent years for the Democrats, 1974 and 1992, and one very good year for the Republicans, 1978. Corrected for degrees of freedom, the R^2s usually decreased or barely increased when the minor parties were added to the equations. In only one case, the 1974 Assembly, was there a marked increase (four seats) in the ability to predict the winners, in the sense described below in the text, by adding minor parties. I therefore did not explicitly add minor parties to equations 1, 2, and more complicated equations discussed in the rest of the paper.

3. Since there were few completely uncontested seats in California during this period, I included all seats in every equation. Of the 582 total congressional races, only 10 were absolutely uncontested, and only 24 lacked a Democratic and a Republican candidate. In the Assembly, the analogous numbers were 1040 total, 57 uncontested by anyone, and 82 uncontested by one major party. For a discussion on how to handle large numbers of uncontested seats, see Gelman and King 1994a, Appendix A.

4. A single-equation model using as a dependent variable the Democratic percentage of the two-party vote and as an independent variable the Democratic percentage of the two-party registration yields predictions which are almost as good, in the senses discussed in the text below, as the two-equation model.

5. For more sophisticated measures of uncertainty in related models, see Gelman and King 1994a.

6. Details of these calculations are in Kousser 1995a.

7. A court order provided that the 1972 state legislative contests would be held in the districts established in the previous decade. Thus, 1974 was the first year in revamped Assembly districts.

8. I show in Kousser 1995a that substituting logit analysis (with a dependent variable equal to one if the winner was a Democrat, and zero, otherwise) fits the California data no better than OLS does and sometimes does not converge to give any results at all. The simpler OLS is therefore preferable to logit or probit estimation for this problem.

9. For more details, see Kousser 1995a.

10. By incumbent, I refer to a candidate who was elected two years before. Thus, those occupying seats won in special by-elections are not considered incumbents. In elections immediately after reapportionments, judgment as to whether one is an incumbent is sometimes required. Although it would be preferable to have statistics on the proportion of people in a district who were represented by the incumbent in a previous legislature, such figures are not easily available.

11. That adding this term explains an additional 11–13% of the variance in the vote percentages is less important.

12. In a particularly pertinent example, Congressman Phil Burton in 1981 designed a district to help his brother John win reelection to Congress in 1982, but John instead dropped out of Congress. Contrary to the assertion of Gelman and King (1994a, 525), even ultimate insiders may not always be able to predict what incumbents will do.

13. Gelman and King (1994a, 525) suggest using party control—that is, the party of the sitting incumbent—when incumbency is unavailable. But if district lines are considerably scrambled by the redistricting process, it may not be possible or

meaningful to compute such a variable. Moreover, most demographic variables from the census will typically not be available at a fine-grained census level during the summer of years ending in 1, when redistricting plans are being formulated and assessed. Therefore, it will generally be impossible to calculate with much precision Gelman and King's error (what they refer to as gamma) or proportion of the total error (lambda) due to omitted variables and measurement problems prospectively, because too many of the values of the independent variables will be unknown. In these conditions, their model reduces to one very similar to mine (Gelman and King 1994a, 528–29).

14. I added to equations 1 and 2 eleven more variables that are plausibly related to voting—the percentages of the voting age population that were African-American and Latino, median incomes, median values of housing and rents, the percentage who graduated from college, the percentage who lived in the same house from 1975 to 1980, the percentage who moved but stayed within the county, the percentage of housing that is owner-occupied, the percentage of families below the poverty line, and the percentage urban.

15. Predictions here are for the same-year equations, not the lagged equations, but the results are so similar for both that it makes little difference.

16. Again, the predictions are for same-year elections, but lagged predictions are almost equivalent.

17. For details of the North Carolina, Texas, and additional California regressions, see Kousser 1995a.

18. This was the smallest ratio of the percentage of total seats won to the percentage of the two-party vote received in the average district in California from 1970 to 1992. On the general tendency of electoral systems to reward first-place finishers, see, for example, Rae 1967.

19. As a negotiating tactic, the Democrats actually proposed and the legislature passed three separate plans—one that they hoped courts might adopt if negotiations broke down, and the other two designed to appeal to conservative and moderate Republicans, respectively. The plan discussed in the text is the first of these, which was referred to as Plan A.

20. Philip Hager, "Judges Question GOP's Bid to Dump California Remap Plan," *Los Angeles Times*, 6 December 1986, sec. II, p. 1.

21. Burton and his ally Michael Berman did tailor several congressional seats for their friends and families, but these were all such safely Democratic seats that, after setting aside these areas and making other Democratic incumbents somewhat more comfortable, Burton and Berman had too few extra Democratic voters to shift around to affect the party balance of the state's seats very much. For much more detail on these developments, see Kousser 1995b.

22. Daniel M. Weintraub, "Remap Could Bring Major Gains for GOP," *Los Angeles Times*, 4 December 1991, sec. A, p. 1.

23. Note that Gelman and King (1994a) also compute seats/votes ratios on the basis of district level statistics.

24. For specifics, see Kousser 1995a.

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TAB 5

Daily Democrat
Woodland, California The City of Trees

A fair job at redistricting, but we have a beef

Published By Daily Democrat

Created: 06/19/2011 12:31:23 AM PDT

There is a lot of tweaking that needs to be done, but overall the Citizens Redistricting Commission has done an excellent job so far of redrawing the state's legislative and congressional districts, demonstrating that voters were right when they decided to take the process out of the hands of self-interested elected officials.

The commission released its draft maps last week. The lines were drawn without regard for incumbents' political aspirations. How refreshing.

That doesn't mean we're happy with the outcome thus far for the 1st and 2nd Congressional districts, or what are presently the 5th Senate District, and 2nd and 8th Assembly districts.

We don't like the fact Yolo County is effectively carved up into a total of as many as five districts, compared to the present four (a number which is still too many to our liking), nor are we happy with having what is now Assembly District 8 divided among three assembly members, including two from Sacramento (who could give a lick about Yolo County).

Primarily, we don't think that Davis and Woodland should be placed in two different election districts. We may joke about the differences between Woodland and Davis, but when it comes to voting, it makes little sense to split the county's two biggest cities. The pair make an effective team when lobbying for state and federal recognition and assistance. Dividing them only halves the political strength of Yolo County as a whole.

A decade ago, the lines were drawn

to protect incumbents of both parties. As a result, there were very few competitive districts, ensuring that the extreme ends of each party would control -- and polarize -- the dialogue in Sacramento. The effect on policy has been devastating. In Yolo County's case, however, we have been better served by single representation -- at least for the 8th Assembly District.

We will admit the new district lines increase the number of competitive seats in the state Assembly from nine to 16 and the number in the state Senate from three to nine. The maps also increase the number of competitive congressional seats from California from four to nine. We like the increased competition.

However, we also want fair representation for our county as a whole. That's not something we see happening with the new district boundaries as presently proposed.

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TAB 6

← Back to Original Article

Voting districts finalized and face immediate challenges

Republicans seek to bar the new districts and Latino activists threaten action, saying their voting strength is diluted. One panelist says commision met secretly to draw to partisan districts.

August 15, 2011 | By Patrick McGreevy and Richard Simon, Los Angeles Times

Reporting from Sacramento and Washington, D.C. — GOP leaders announced an effort to invalidate many of California's new voting districts Monday as the boundaries were finalized by the commission that drew them.

The maps, drafted for the first time by a citizens' panel rather than politicians, could give Democrats a tighter grip on the statehouse and California's congressional delegation. In particular, the new lines put Democrats within reach of the coveted two-thirds majority, which is needed to raise taxes, in the state Senate.

The California Citizens Redistricting Commission consists of five Democrats, five Republicans and four unaffiliated members. But state GOP Chairman Tom Del Beccaro characterized the approved boundaries as "unfair if not unconstitutional."

Interactive maps: Has your district changed?

Republicans aren't the only ones girding to fight the new maps, which are to be used during the next decade in elections for 120 seats in the state Legislature, 53 in Congress and four on the state Board of Equalization. Activists argue that Latinos are underrepresented in some new districts and are threatening a court challenge.

Even some on the 14-member commission expressed reservations about its final product, emboldening potential challengers.

A referendum drive to overturn the state Senate lines is being led by state Sen. Mimi Walters (R-Laguna Niguel) and Orange County businesswoman Julie Vandermost through a committee called Fairness and Accountability in Redistricting, according to Republican consultant Dave Gilliard. They may also launch a referendum on the congressional boundaries, according to Gilliard.

"It is our goal, and should be the goal of all elected officials who believe in fair, accountable and transparent government, to reject the lines drawn and ensure that the referendum is successful," Walters said.

Backers have 90 days to collect 504,000 signatures to qualify a referendum for the ballot.

The petition drive is endorsed by the 15-member Senate Republican Caucus, according to state Senate minority Leader Bob Dutton of Rancho Cucamonga.

"I indicated my willingness to try to help raise some money for the referendum," Dutton said. "The people of California were hoping for an open and free process that was free of political influence and I'm not so sure that's what they got."

If a referendum makes it to the ballot, the redistricting plan adopted Monday will be suspended and the state Supreme Court will determine districts for the 2012 election. GOP strategists say that's an easy bet.

"The idea that the court would disregard the 500,000-plus citizens' signatures to leave in place a plan approved by 14 citizens — no one I know thinks that's a likely outcome," said Jim Brulte, a Republican and former state legislator.

Bruce Cain, a UC Berkeley political scientist and reapportionment expert, said that even if a referendum qualifies, it is unlikely to pass. "For the most part," he said, "public opinion has been relatively positive."

The president of the Mexican American Legal Defense and Educational Fund, meanwhile, said his organization is considering taking the commission to court.

"We are looking at compliance with the federal Voting Rights Act," said MALDEF President and General Counsel Thomas A. Saenz, citing particular concerns over the state Senate and congressional district lines. The federal law protects minorities against having their voting strength diluted.

Saenz suggested the commission failed to create enough new districts with Latinos as the majority of voters. That raises a potential legal issue, he said.

The state Supreme Court on Monday announced an expedited process for hearing legal challenges to the new maps. But Saenz said his group may file a challenge in federal court, where the case would be heard by a three-judge panel that could consider requests for a preliminary injunction blocking the Senate districts from taking effect.

One of the redistricting commissioners, Maria Blanco, expressed reservations similar to MALDEF's before casting her vote to approve the plan. She noted that the state Senate district now represented by Democrat Alex Padilla of Pacoima in the San Fernando Valley was changed into one with far fewer Latinos of voting age.

Commissioner Michael Ward voted against all of the new legislative maps, the only member of the panel to do so. He accused his colleagues of violating their legal mandate by making some decisions based on "political" considerations.

"This commission broke the law," Ward, a Republican chiropractor from Anaheim, said at a Capitol news conference attended by all 13 other members of the panel. He said they held secret meetings to draw boundaries for partisan considerations.

"This commission simply traded the partisan, backroom gerrymandering by the Legislature for partisan, backroom gerrymandering by average citizens," Ward said.

Ward's charge was disputed by commission Chairman Vincent Barabba, a Republican businessman from Santa Cruz County. He said decisions were made in open meetings, and there was "no basis" for the accusation that they were due to political considerations.

"The sense I get is that Commissioner Ward attended different meetings than I did," Barabba said.

Interactive maps: Has your district changed?

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TAB 7

Redistricting California:

An Evaluation of the Citizens Commission Final Plans

September 13, 2011

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Abstract: For the first time in California history, a carefully vetted commission of citizens has overseen the delicate task of redrawing the state's political boundaries. By analyzing the maps produced by the commission, and comparing these plans to the redistricting overseen by the legislature a decade earlier, we show that the new process has produced important improvements in terms of both the criteria voters said they cared about and the representational implications of interest to academics and political observers. In many respects, however, the magnitude of these gains has fallen short of what many political reformers may have hoped for. Perhaps the most important lesson from the 2011 round of redistricting is that a fair process, no matter how nonpartisan and participatory, cannot avoid the reality that any redistricting scheme produces both political winners and losers.

Introduction

California's recently completed redistricting has been a sharp break with the past, both in style and substance. For the first time in state history, the decision about the location of district lines has been made by a commission of regular citizens, rather than elected officials or court-appointed special masters, in a process that has been significantly more participatory and transparent than in the past. This new commission has not wanted for critics. Many observers, including members of the Republican Party and some minority groups, have loudly complained about the process and the commission that has overseen it. Indeed, Republicans have begun to collect signatures for referenda to overturn the congressional and state Senate maps adopted by the commission and to throw the process to the courts instead.

In this paper, we help place these criticisms in historical context and offer a range of important information about the maps the commission produced. We discuss the political forces that led to the creation of the Citizens Redistricting Commission (CRC) and show how the process overseen by the new commission has differed from redistricting of the past four decades. We then evaluate the newly adopted plans, both on the specific criteria the CRC was mandated to consider and on the political implications the CRC was required to ignore. On most of the mandated criteria — such as maximizing compactness and avoiding city and county splits — the commission's plans represent an improvement over the maps drawn by the legislature in 2001. The maps are also somewhat more likely than the current plans to produce competitive races and to elect Democrats to office, though the latter effect is only notable for the congressional plan. In short, though the plans are far from perfect on any single dimension, they look like the sort of result one could expect given the mandates and constraints the commission has faced.

California's Redistricting Wars and the Creation of the Citizens Commission

The creation of California's Citizens Redistricting Commission through the passage of Proposition 11 in November of 2008 represented an important shift in the redistricting battles that have been waged between the state's two largest political parties for decades (see Kousser 1997, 1998; Quinn 1981). Though it is common to say that the commission has taken redistricting power away from legislators, California's redistricting process has not historically been the exclusive purview of the legislature. Instead, the process has involved a series of actors who have used the courts and direct democracy to influence the outcome, making each redistricting a protracted battle with significant input from actors outside the elected branches of government.

The courts have played a direct role in drawing lines in almost half the California redistricting battles since the U.S. Supreme Court's one-person, one-vote decisions began the modern era of redistricting in the 1960s. In both 1970 and 1990, vetoes of Democratic redistricting plans by Republican governors handed the matter to the Supreme Court, which appointed "Special Masters" to craft the new boundaries. These masters then created plans that, as demonstrated by both qualitative and quantitative analysis, were more favorable for the party of the governor who had appointed a majority of Supreme Court justices (Kousser 1997, 2006).

Even when members of one party have controlled both the legislature and the governorship in California, they have not exerted unchecked power over how to draw the lines. In the early 1980s, the Democrats controlled all levers of government but saw their redistricting plan defeated by a referendum placed on the ballot by Republicans. Republicans then allied with good government reformers on a follow-on proposition to establish a redistricting commission.

When this measure lost, Democratic legislators rushed to redraw the lines, passing a compromise plan before lame duck Democratic Gov. Jerry Brown had left office and his Republican successor George Deukmejian could been sworn in. The plan was generous enough to Republicans to garner a two-thirds vote in each house, allowing it to go into effect swiftly and avoid another referendum (Kousser 1997). Those lines stayed in place for the remainder of the decade,[1] but a clear lesson from the episode was that direct democracy — whether real or threatened — would constrain the districts legislators could draw.

This contentious history — and the successful referendum in particular — provided the backdrop as California prepared for the 2001 round of redistricting. The Democrats agreed to a bipartisan gerrymander that protected incumbents from both parties with safe districts that minimized partisan turnover, and they cemented the deal with a bipartisan two-thirds majority that exempted the plans from any referendum challenges. The resulting plans angered many outside the legislature. Some minority group leaders argued the maps missed an opportunity to increase representation for historically excluded groups (Ingram 2001b). Political reformers and newspaper columnists considered the plans a corrupt bargain drafted behind closed doors that put the interests of elected officials ahead of the voters they were supposed to represent. Some political observers also argued that, by creating safe political seats in which one party controlled an overwhelming majority of the votes, the maps exacerbated the partisanship and polarization that had created perennial delays in the adoption of the state budget (see, e.g., Skelton 2009; though see McCarty, Poole, and Rosenthal 2009, and McGhee 2008 for evidence to the contrary).

[1] Even after this late-1982 maneuver, California's redistricting wars of the 1980s were not over. Republican assemblyman and winery owner Don Sebastiani funded an initiative to draw new plans in 1983, but the measure was thrown out by the state Supreme Court on the grounds that it violated the state constitution's requirement that redistricting occur once a decade. In the November 1984 election, Gov. Deukmejian pushed another initiative to create an independent commission, which was defeated, as was Proposition 119 in 1990 (Kousser 1997).

This popular displeasure with the 2001 maps provided fuel for the campaign behind Proposition 11. As with previous failed reform initiatives, Proposition 11 was funded primarily by Republican interests — nonetheless, its advocates made a concerted effort to broaden their coalition. They attracted endorsements from several high-profile Democrats, and attempted to incorporate concerns from minority voting rights groups. These efforts paid off on Election Day 2008, when Proposition 11 squeaked through by the barest of margins. A follow-on measure, Proposition 20, then passed in November 2010, extending the commission's authority to congressional lines as well.

The Citizens Redistricting Commission

Propositions 11 and 20 created a 14-member Citizens Redistricting Commission to oversee the process. CRC members were chosen through a complicated process designed to purge the applicant pool of any connection with the elected officials whose districts would be redrawn. The commission also included representation from every major ethnic group, and the law mandated five Democratic, five Republican, and four decline-to-state or third-party commissioners for partisan balance. The rules laid out in Proposition 11 required at least some members from each partisan delegation to approve the final maps, ensuring that the commission would either act in a bipartisan manner or deadlock trying. In the event of a deadlock, the new law required the state Supreme Court to appoint a panel of special masters to draw the districts as in the 1970 and 1990 redistricting cycles. Thus, there was no scenario under the new system for the legislature to be directly involved in crafting the maps.

Proposition 11 also added new language to the state constitution listing specific criteria, in order of importance, that the CRC was to use to craft new political districts. In many ways,

these criteria represented a backlash against perceived abuses of the 2001 process, including districts that split cities and created jagged edges and long protrusions that, to outside observers, appeared to serve few purposes other than creating constituencies that advanced the political interests of elected incumbents.[2]

Table 1 below lists the formal redistricting criteria adopted by voters as part of Proposition 11. Aside from the equal population, district contiguity, and Voting Rights Act requirements already explicitly or implicitly a part of California law, the measure added several other constraints that had historically been less central to debates about redistricting in California. First, Proposition 11 explicitly required the commission to protect the "geographic integrity" of cities, counties, neighborhoods, and other undefined "communities of interest," cautioning line-drawers against splitting communities into multiple districts.[3] Second, the new language mandated that districts be drawn to maximize geographic compactness — though only to the extent that this did not conflict with other higher criteria — to avoid the creation of sprawling and irregularly shaped districts. Despite the existence of many different measures used to assess compactness in the context of redistricting (see, e.g., Niemi et al. 1990), the law left it to the commission to define and measure the concept. Finally, the new law adopted the principle of "nesting," calling for the incorporation of two state Assembly districts within a single Senate district.

[2] In fact, there are many legitimate reasons, including minority empowerment, for the drawing of irregularly shaped districts.
[3] A different section of the state constitution prior to the passage of Proposition 11 had included nearly identical language protecting the boundaries of cities and counties, though not necessarily of neighborhoods and other "communities of interest."

Table 1. Official California Redistricting Criteria

Priority	Criteria
1	Districts shall have reasonably equal population.
2	Districts shall comply with federal Voting Rights Act.
3	Districts shall be geographically contiguous.
4	To the extent possible, geographic integrity of any city, county, city and county, neighborhood, or community of interest shall be respected.
5	To the extent possible, districts shall be drawn to encourage geographical compactness.
6	To the extent possible, Senate districts shall be comprised of two whole, complete, and adjacent Assembly districts, and each Board of Equalization district shall be comprised of 10 whole, complete, and adjacent Senate districts.

Source: California State Constitution Article XXI, Section 2

Although all six criteria included in Proposition 11 draw on widely accepted redistricting considerations, there are inherent tensions between them. Maximizing either geographic compactness or nesting often hurts minority representation, and nesting can split city and county boundaries as well (Barabas and Jerit 2004; Cain and Mac Donald 2007). Yet aside from ranking the criteria in order of importance, Proposition 11 provided little guidance on how to resolve these conflicts, leaving the difficult task of reconciling them to the commission.

Equally important are the criteria specifically *excluded* from the measure, such as increasing political competition. Although establishing boundaries for the purpose of creating close elections was not one of the goals included in Proposition 11 — indeed, the language of Proposition 11 actually prohibited the maps from being drawn "for the purpose of favoring or *discriminating against* an incumbent" (emphasis added) — the promise of political competition was one of the central arguments made by the measure's proponents. The growing geographic segregation of California's electorate has made it more difficult to draw such districts by

accident (Cain, Mac Donald, and Hui 2008), and the Voting Rights Act requirements help ensure that a certain number of uncompetitive districts have to be created. Once again, the commission faced a difficult balancing act: reconciling voter expectations that redistricting reform would lead to dramatically more competitive elections with the actual criteria and constraints written into the measure that made drawing such districts more difficult.

Evaluating the Commission Plans: Mandated Criteria

In this section, we assess how well the CRC's maps adhere to the formal redistricting criteria adopted by voters. The inherent tensions among these criteria make it extremely difficult to determine whether the maps drawn by the commission represent the "best" possible set of plans that could have been created. However, by comparing the commission's work to the maps drawn by the legislature a decade earlier, we can quantify the extent to which the new district boundaries represent an improvement on the 2001 plans.

We also contrast the final maps adopted by the commission with the draft boundaries released in June 2011. This comparison is important for two reasons. First, the June maps generally attracted significant praise from political observers, including some notable Republicans.[4] This reception contrasted sharply with the polarized partisan response to the final maps adopted in August, which were almost universally assailed by Republican leaders and strategists, as well as some minority rights advocates. By identifying the differences between the June and August maps, we can assess whether criticisms of the latter were motivated by

[4] Influential Republican analyst and redistricting expert Tony Quinn praised early visualizations of the maps, commending the commission for listening to community input and concluding that "[t]he maps are balanced in partisan terms" (Quinn 2011a). This is not to suggest that the June plans were universally liked. Some Republican leaders criticized the draft maps soon after they were released (Hoffenblum 2011). Moreover, Quinn himself quickly had a change of heart, writing several weeks later that the maps "have bombed" and arguing that the commission "managed to gerrymander the state even more than the legislature did in 2001" (Quinn 2011b).

legitimate concern over the redistricting criteria put into place by Proposition 11 rather than narrow partisan interests that may have emerged as the political implications of the new maps became clear. Second, by tracking changes made to the June maps, we can identify the tradeoffs made by the commission in response to public input.

Minority Representation

Proposition 11 differed from earlier redistricting reform initiatives in the extent to which the measure provided safeguards to ensure adequate representation for minority groups in California (Kogan and Kousser 2011). The first such safeguard included language calling for compliance with the federal Voting Rights Act. In *Thornburg v. Gingles* (1986), the Supreme Court interpreted Section 2 of the law to require the creation of majority-minority districts when minority populations are sufficiently large and geographically concentrated and when there is evidence of "racially polarized" voting. Even where the *Gingles* preconditions may not be satisfied, other parts of Proposition 11 that task the commission with preserving the geographic integrity of local "communities of interest" provide additional protections, since minority groups undoubtedly represent populations that share "common social and economic interests" (California Constitution, Article XXI, § 2, subdivision (d)(4)).

To gauge the implications of the various redistricting schemes for minority representation, we calculated the proportion of each district's citizen voting-age population (CVAP) that is Asian, black, and Latino. We focus on CVAP because this number best captures the universe of eligible — rather than actual or registered — voters in each district.[5] For 2011, we rely on Census block-level CVAP figures from the Statewide Database; for 2001, we use

[5] In *Romero v. City of Pomona* (1989), the Ninth Circuit Court of Appeals endorsed the use of CVAP to assess compliance with the Voting Rights Act.

district-level measures calculated using a special tabulation from the 2000 Census data. Although our discussion focuses on point estimates, it is important to recognize that the CVAP figures are inexact because they are constructed, at least in part, from survey data. Unfortunately, due to a variety of methodological challenges discussed at length by McCue (2011; see, in particular, pp. 16-17), it is not possible to construct confidence intervals or margins of error that adequately capture this uncertainty. These data limitations should be kept in mind when interpreting the results below.

Table 2. Number of Majority-Minority Districts (by CVAP)

		2001 Plan	2011 Draft Plan	2011 Final Plan
Assembly				
	Black	0	0	0
	Latino	8	10	14
	Asian	0	0	1
Senate				
	Black	0	0	0
	Latino	4	4	5
	Asian	0	0	0
Congress				
	Black	0	0	0
	Latino	6	5	7
	Asian	0	0	0

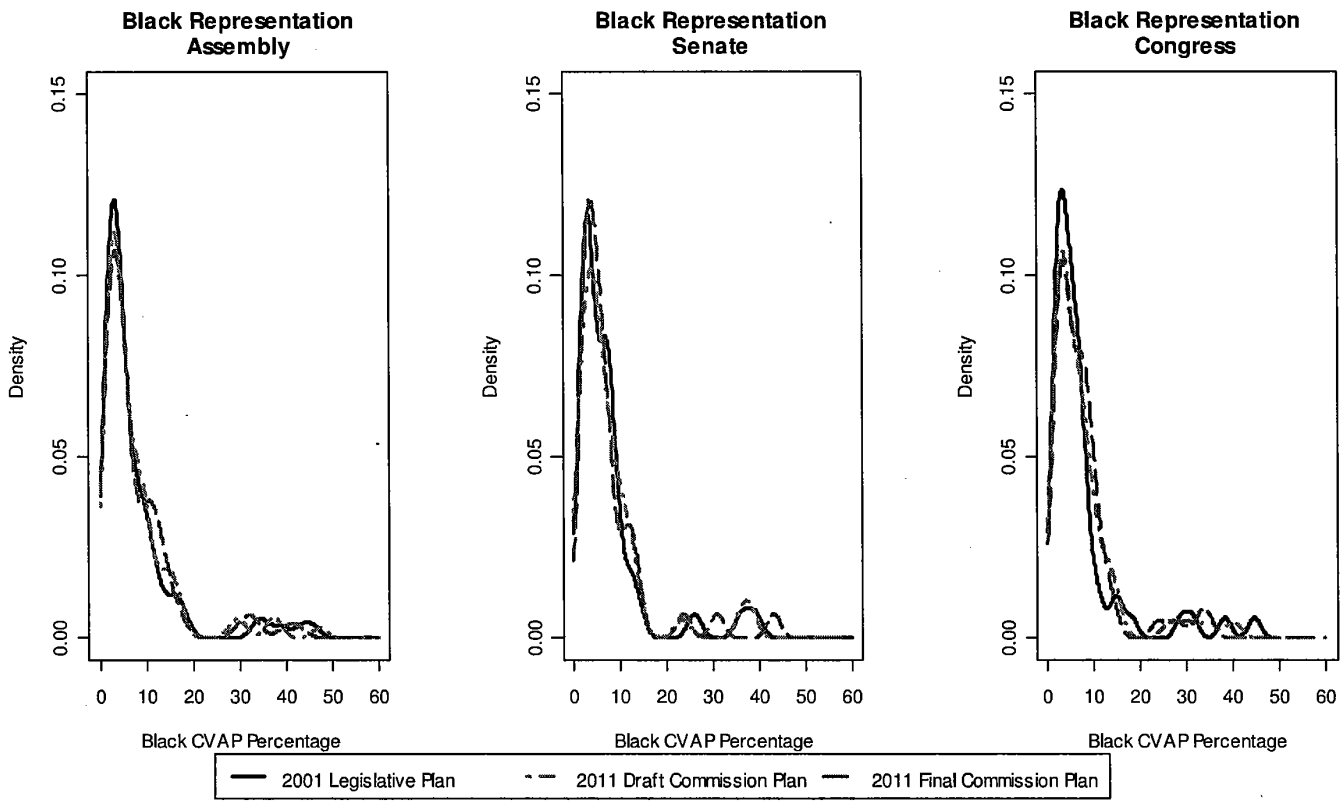
Table 2 lists the estimated number of majority-minority districts drawn under each set of redistricting plans. Overall, the 2011 maps adopted by the commission resulted in the creation of eight new majority Latino districts, with most of the gains coming from the Assembly plan. One notable detail is that the bulk of the gains appeared only in the final commission plans, with the draft maps released in June 2011 creating just one net increase in majority Latino districts, a fact that helps explain the initial criticism offered by some civil and voting rights groups after the release of the June maps. The jump in the number of majority Latino districts between June and August suggests that the gains for Latinos were produced primarily through a deliberate effort on

the part of the commission to increase representation for this group, rather than as a result of natural growth in the relative size of the Latino population in California between 2000 and 2010. In addition, the commission created one new majority-Asian district in the San Gabriel Valley — an area that had been split up among several districts in 2001 in the face of strong opposition from Asian voting rights groups (Ingram 2001a).

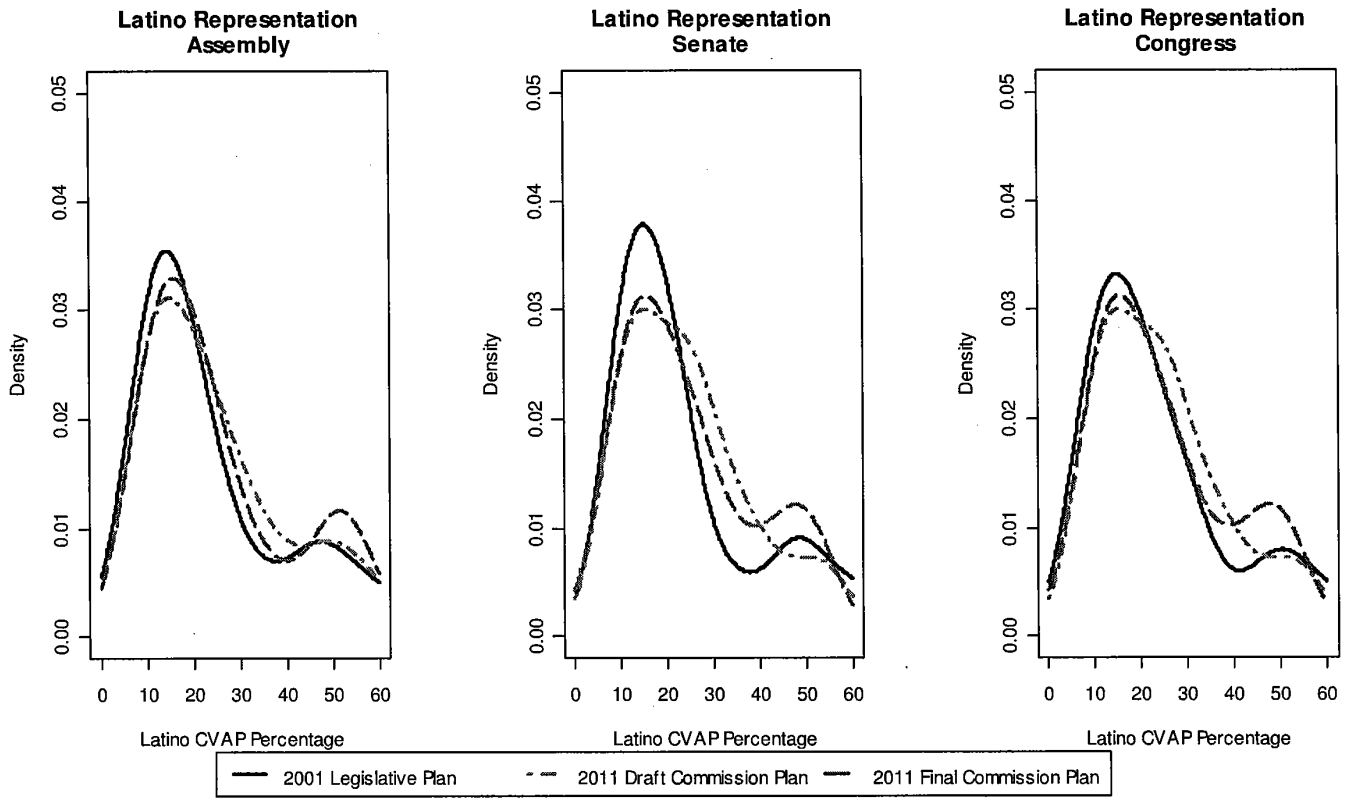
Given the sizeable increase in the number of Latino Californians over the past decade — from 32.4 percent of state residents in 2000 to 37.6 percent in the most recent census — it may be surprising that Latinos did not see greater gains in representation, particularly in the state Senate and congressional maps. This puzzle may be explained in part by the smaller share of the Latino population that is eligible to vote compared to whites — due both to lower rates of citizenship and a higher proportion of Latinos falling below the legal voting age (see Arvizu and Garcia 1996 for an overview). Moreover, Latino growth has not been limited to heavily Latino areas, leading in many parts of the state to large Latino gains that still fall short of producing a Latino voting majority (California Department of Finance 2011). Consistent with this idea, the number of districts where Latinos make up 30 to 40 percent of the voter-eligible population has increased even as the number of majority-Latino districts has shown much smaller change (see Figure 1, Panel b). Latino candidates might succeed in these "influence" districts by attracting votes from other minorities or cross-over support among white voters.

Figure 1. Minority CVAP by District

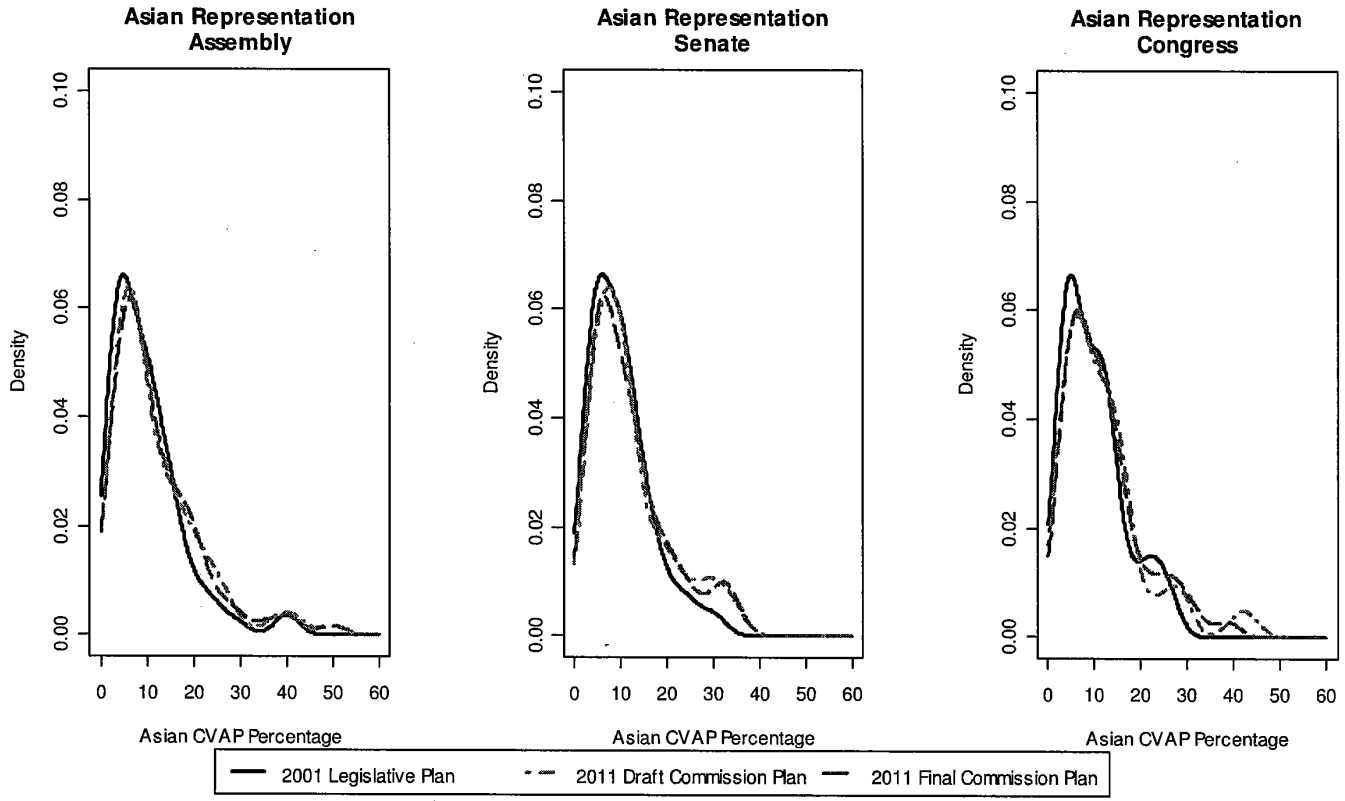
(a) Black representation



(b) Latino representation



(c) Asian Representation



City, County, and Community Splits

In addition to providing protections for minority groups, Proposition 11 also directed the CRC to minimize division of cities, counties, neighborhoods, and other "communities of interest." Indeed, one of the reasons the commission held dozens of hearings across the state was to solicit input from local residents to help commissioners identify such communities. Because it is difficult to establish a systematic definition of a community of interest, we do not attempt to evaluate the plans on that dimension. Our focus instead is on two types of communities with clearly identifiable geographical boundaries: Census-designated places (including cities), and counties. For each type of geography, we calculated how many jurisdictions were left intact as part of the redistricting process — that is, the proportion of communities that were drawn into a single political district.

In Table 3, we report the percentage of intact Census-designated places, which include incorporated cities and well-defined unincorporated areas, produced by each set of plans. This calculation focuses only on communities small enough to fit into a single district and thus excludes major cities that would have been split under *any* redistricting plan.[6] The table also tallies up the total number of community splits, including geographies too large to fit in a legislative district. Table 4 presents a similar analysis for county splits, except instead of percentages, this table reports the raw counts of intact counties.[7]

Overall, the tables suggest that the 2011 commission plans represented an improvement on the 2011 legislative redistricting in terms of preserving the integrity of existing communities. Despite criticism from one political observer that the commission's work "whacks and hacks

[6] This follows the methodology used by the commission in its final report, except the commission did not count splits that produced areas with zero population; such splits are included in our count.
[7] Despite overall population growth, the number of counties too big to fit in a single legislative district did not change between 2000 and 2010. Thus, the comparison of the raw counts provides a useful metric for the differences between the 2001 legislative redistricting and the 2011 commission plans.

Table 3. Comparison of Community Splits

	2001 Plan		2011 Draft Plan		2011 Final Plan	
Plan Type	No. of Community Splits	% Intact[a]	No. of Community Splits	% Intact[a]	No. of Community Splits	% Intact[a]
Assembly	141	92%	71	97%	74	97%
Senate	77	95%	47	98%	39	98%
Congress	94	94%	86	96%	79	96%

Note: Communities are defined as Census-designated places with a population greater than zero. The number of communities increased from approximately 1,000 in 2000 to 1,500 in 2010.

[a]Percent intact calculated only for communities with a small enough population to fit in a single legislative district.

Table 4. Comparison in County Splits

	2001 Plan		2011 Draft Plan		2011 Final Plan	
Plan Type	No. of County Splits	Intact Counties	No. of County Splits	Intact Counties	No. of County Splits	Intact Counties
Assembly	99	31	93	31	92	30
Senate	51	33	59	32	54	38
Congress	62	34	69	31	67	33

cities and counties for no apparent reason" (Quinn 2011b), between 96 and 98 percent of all Census-designated places were kept intact under the 2011 plans. This represents a sizeable increase over to the 2001 plans, although many readers may be surprised to learn that even the legislature's gerrymander preserved more than 90 percent of communities within single districts. However, aside from the Senate plans, where the 2011 maps increased the number of intact counties, the commission did not notably increase or reduce county splits.

Maximizing Geographic Compactness

Compactness — the spatial "spread" of a district — is a long-established criterion for evaluating political boundaries, and a legally mandated redistricting consideration in many states (Niemi et al.1996). Indeed, sprawling districts are often used by critics to make the case for redistricting reform. In California, for example, proponents of Proposition 11 often pointed to California's 23rd Congressional District drawn by the legislature in 2001. Known as the "Ribbon of Shame," the costal district stretched nearly 200 miles from Monterey County in the north to Oxnard in the south.

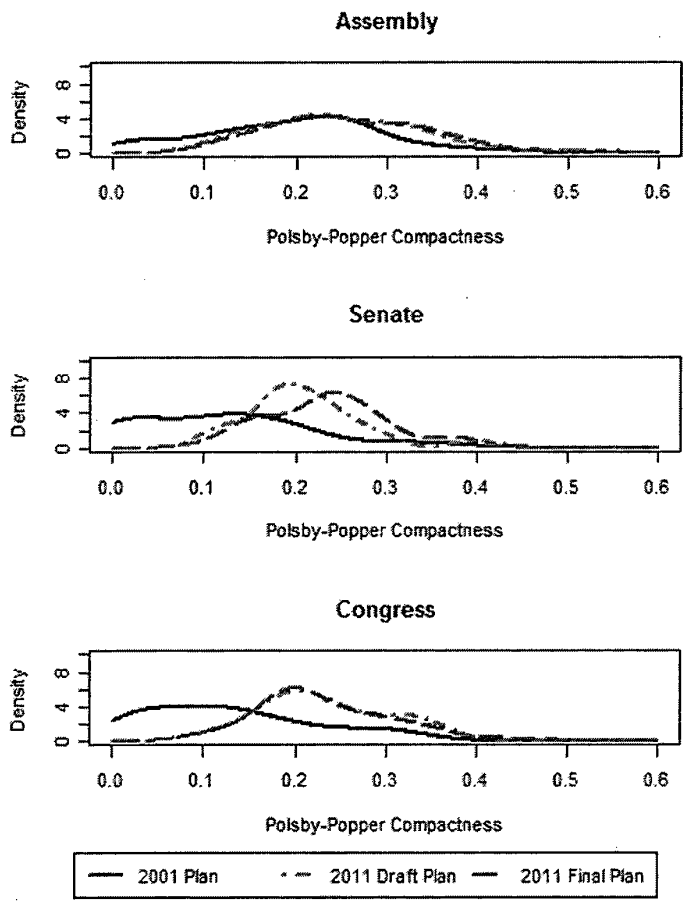
Despite the straightforward intuition for what it means to draw compact districts, consensus on a formal mathematical definition has remained elusive, and scholars have proposed a variety of measures. Niemi et al. (1996) showed that aggregate statistics produced by these measures generally lead to similar conclusions about specific redistricting plans, so the precise measure we choose is not likely to affect our conclusions. We use the measure proposed by Polsby and Popper (1991): It ranges from zero to one, with higher values indicating greater compactness.[8]

[8] The Polsby-Popper score for each political district is equal to the ratio of the area of the district to the area of a circle that has the same perimeter length as the district. Formally, the given the area and perimeter for a district, the score can be computed using the formula $PP = \frac{4\pi * Area}{Perimeter^2}$. .

Table 5. Average Polsby-Popper Compactness Scores

Plan Type	2001 Plan	Draft 2011 Plan	Final 2011 Plan
Assembly	0.20	0.25	0.26
Senate	0.12	0.21	0.23
Congress	0.13	0.23	0.23

Figure 2. Comparison of Compactness Across Plans



To compare the degree of compactness achieved by the 2001 legislative redistricting and the two sets of commission-drawn plans, Table 5 presents the mean district Polsby-Popper score produced by each plan. Figure 2 also plots the distribution of district compactness scores for each set of maps. Overall, the larger Polsby-Popper scores for the CRC-drawn districts provide strong evidence that the commission drew notably more compact boundaries than the legislature. This was the case for both sets of commission plans, although the August maps achieved somewhat greater compactness than the initial draft maps released in June.

Nesting Assembly Districts

The final criterion we evaluate is "nesting": the process of fitting two Assembly districts within a single Senate district. One impetus for nesting is the belief that it makes it easier for voters to correctly identify their elected representatives and accurately apportion credit and blame for policy outcomes. Some research has also shown that nesting can improve legislative productivity in bicameral systems by aligning electoral incentives of lawmakers and thus making it easier to build legislative coalitions across chambers (Chen 2010). Although nesting of lower house districts was approved by voters as part of Proposition 11, this goal was given the lowest priority among the criteria listed in the constitution.

Table 6. "Nesting" of Assembly Districts Inside Senate Districts

	2001 Plan	2011 Draft Plan	2011 Final Plan
Senate District Population in Two Largest Assembly Districts (Average)	74%	96%	83%
Average Number of Assembly Districts per Senate District	6.35	2.95	4.95

Table 6 compares the degree of nesting across the commission and legislative plans. For each Senate district, we calculated the percentage of its population that was contained in the two Assembly districts with the largest number of overlapping residents. In a perfectly nested plan, the percentage would be 100— because the two Assembly districts would contain all of the residents of the larger Senate district. The first row of Table 6 reports the average amount of population overlap between each Senate district and its two most nested Assembly districts. The second row reports the average number of Assembly districts covered, at least partially, by each Senate district. A perfectly nested plan would have a value of 2 on this measure, and higher values indicate weaker nesting.

As the table makes clear, the draft plan released in June 2011 achieved the greatest amount of nesting, with nearly perfect population overlap between the districts of the upper and lower houses of the legislature. The amount of nesting was reduced in the final plan adopted by the commission, in large part due to the creation of new majority-minority districts in response to public input and in an effort to reduce the number of community splits in the draft plan (Citizens Redistricting Commission 2011). However, the final commission maps still produced more overlap between the Senate and Assembly districts than the redistricting plan adopted by the legislature in 2001.

Summary

Overall, the results reported here make clear that the final commission maps adopted in August represent a notable improvement over the 2001 legislative redistricting on nearly all of the criteria voters said were important to them when they passed Proposition 11. This is true despite the fact that the commission did not produce lines that fully achieve any of the goals written into the state constitution. Though far more communities have been left intact in 2011

than in 2001, a small number of cities are still split into multiple districts under the CRC-approved plan. Likewise, while the new districts are more compact than the old ones, none of them look like perfect rectangles or circles. The fact that the commission did not achieve perfect compliance with *all* of the criteria reveals the inherent tensions between these important considerations — tensions that limit the potential gains from the reform and which few voters likely understood when they voted for the new system.

Equally surprising, however, is that the apparent conflicts between the redistricting criteria were less pronounced than many redistricting scholars may have expected. This is best demonstrated by comparing the draft maps released by the commission in June to the final maps adopted in August. The changes made to the plans in the meantime resulted in improvements on nearly all of the redistricting criteria. Only nesting, the lowest-ranked priority under Proposition 11, declined in the final maps — and this likely occurred because the commissioners worked to maximize other higher-ranked criteria, as directed by the state constitution. The criteria were in tension with each other, but they were not mutually exclusive.

Evaluating the Commission Plans: Political Effects

While the law explicitly required the CRC to consider the impact of its maps on geographic and minority representation, it also specifically directed the CRC to *ignore* the partisan and political effects of the plans it drew. All the same, many actors hoped for a particular political outcome: either more competitive seats, more victories for their own party, or both. In fact, the commissioners might have found ways to produce a partisan advantage using some combination of the demographic information available to them and their own knowledge of particular communities or incumbents. Even if the commission pursued its task with strict

neutrality, the product of its efforts was almost certain to produce partisan winners and losers — and a partisan impact that emerges from a neutral process still has real consequences.

In this section we evaluate the plans for two possible political effects: the number of competitive seats, and the share of seats each major party is likely to win under the new maps. Although we show that the plans will likely impact the nature of political competition and the balance of partisan power, these effects are not always as large as some observers have suggested, nor have they necessarily emerged for the reasons that many critics claimed.

Competitiveness

Although the CRC was not allowed to consider partisanship, advocates of reform clearly hoped the commission would draw a larger number of competitive seats, and the campaign on behalf of Proposition 11 strongly hinted that its passage would lead to greater competition. Did the commission live up to those expectations? We consider a seat "competitive" if we predicted that it would lead to elections in which no candidate would win by more than 10 percent. This definition of "marginal" districts is commonly used by scholars of legislative elections, and a 10-point advantage is certainly close enough to keep a representative or legislator concerned about reelection without forcing us to adopt an overly restrictive definition.[9] We use party registration and incumbency to produce our estimates, first by fitting a statistical model that used these two variables to predict the results of previous elections with data from those elections, and then by

[9] One could measure competitive seats in a number of ways. Past efforts have used the number of Democratic and Republican voters (Abramowitz, et al. 2006, McGhee 2011), turnover (i.e., the seats that actually change hands) (Johnson, et al. 2005), or close outcomes (Jacobson 1990). We assume that supporters of greater competition value it for its ability to keep incumbents concerned about public opinion outside their own party base. A seat need not actually change partisan hands to frighten an incumbent in this way. Likewise, the number of Democratic and Republican voters in a district might be a decent proxy for election results, but it is the results themselves that matter. So while both turnover and party registration are defensible, close outcomes are a more satisfying approach than either one.

combining the model coefficients with the relevant data from the new maps to generate predictions under the new lines.[10]

Table 7. Predicted Competitiveness: 2001 Plan vs. CRC Plans

	2001 Plan	2011 Draft Plan	2011 Final Plan	Significant Difference ? (2001 Plan to 2011 Final Plan)
Senate	11%	17%	15%	No (p=0.20)
Assembly	11%	17%	14%	No (p=0.16)
Congress	5%	16%	18%	Yes (p=0.02)

Using our definition, the share of seats predicted to be competitive under the new maps can be found in Table 7, with separate estimates for the 2001 districts, the CRC's draft plan from June, and the final plan adopted in August. All the commission's maps are more competitive than the existing maps, with increases ranging from 3 percentage points (i.e., between one and two additional seats) for the final Assembly plan to 13 points (i.e., between six and seven additional seats) for the final House plan. The draft plan in June offered slightly greater competitive gains in both the Senate (6%, or between two and three seats) and Assembly (6%, or between four and five seats), but not in the House (11%, or between five and six seats), although none of the differences are statistically significant. In fact, while there is at least an 80 percent

[10] We regress the Democratic share of the two-party vote on the Democratic and Republican shares of total registration and separate dummies for Democratic and Republican incumbents. Because we conceptualize competitiveness as a characteristic of each district independent of specific elections, we pool together all the elections from 2002 through 2010 into a single multilevel model, with random intercepts for election years, and then generate predictions for an average year. We also omit uncontested seats for the purposes of estimation but generate predictions for all seats. Thus, our predictions implicitly assume that all districts would be contested under the new maps. For the sake of coding incumbency, we assume that all incumbents will run in their district of primary residence, and that any seat occupied by a termed-out incumbent is open. After running these models, we sample 1,000 vectors of coefficients and errors to generate our estimates of probabilities. All models were run in R. Coefficient and goodness-of-fit estimates from these models are available from the authors upon request.

chance of greater competition in each of the final plans, the competitive gains only clear the 95 percent statistical significance standard for the House.[11] In substantive terms, the new maps will produce a modest increase in the number of competitive elections — though perhaps fewer than many reformers hoped for.

Partisan Balance

We conducted a similar analysis to gauge the impact of the new districts on the partisan balance of power, as measured by the Democratic share of seats in each legislative house and the California congressional delegation. Predictions of this kind can be sensitive to assumptions about broader partisan tides, especially when several competitive seats are in play: A good year for Democrats might push a number of these seats into the Democratic column, while a good year for Republicans could produce the opposite effect. To address this challenge, we produce two sets of estimates: one based on 2008, which we call a "Good Democratic Year," and one based on 2010, which we call a "Good Republican Year."[12] Basing our analysis on those two years also ensures we are working with a relatively stable period for partisan registration. A large registration shift away from Republicans occurred in the 2008 election, leading to a new, more Democratic equilibrium that has persisted to the present day.[13]

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[11] Our predictions overstate the number of competitive races that actually occurred in the Assembly (11% predicted vs. 8% actual) and Senate (11% predicted vs. 7% actual) while perfectly predicting competitive races in the House (5% each). Nonetheless, there is little reason to think that the predicted *changes* will be consistently over- or underreported for the new plan. The same model also overpredicted competitive races in the 1990s, but there was no bias in the estimated change in competitiveness from the 1990s to the 2000s. These results are available from the authors upon request.

[12] For the Assembly and House, we ran separate OLS models for 2008 and 2010 and generated predictions off each model separately. We omitted uncontested seats and used the same predictors as for the estimates of competition: Democratic and Republican registration, and separate dummies for Democratic and Republican incumbency. Since the Senate offers so little data (a maximum of 20 races per cycle), we ran one regression for both 2008 and 2010 and included a dummy to capture the intercept shift between the two cycles.

[13] There is a common misconception that the national Republican tide of 2010 did not touch California. Although Republican candidates did perform poorly statewide, they gained substantial ground in legislative and congressional races. Controlling for party registration and incumbency and excluding uncontested seats, the average Republican

State Senate races create special complications that are worth a short discussion. The new even-numbered seats will not be used until the 2014 election cycle, and in the interim, incumbents currently representing even-numbered districts will be allowed to remain in office. If they step down, the resulting special election will be held under the *old* district lines. To capture this dynamic, we have generated separate Senate predictions for 2012 and 2014. For 2012, we generate model predictions only for the odd-numbered seats and assume that the rest will continue to be held by the party that currently controls them. We then generate estimates for 2014 based on all 40 seats, which assumes that our model predictions for those odd-numbered seats represent the best guess as to party control moving forward. We split the seats in the same way for our predictions using the old maps, to make the numbers as comparable as possible.[14]

Table 8 summarizes the results of our analysis, including predicted Democratic seat share for the existing and new maps, as well as the probability of Democrats claiming a two-thirds majority under each plan. (Because the estimates from the June draft plan were virtually identical, for the sake of space we have reported only a comparison of the final CRC map and the existing 2001 map.) Perhaps the most interesting result is that our model predicts a strong Democratic performance in the legislature under the *existing* maps put in place in 2001 — far stronger, in fact, than the Democrats have actually achieved.[15] Under the 2001 maps, a good

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candidate in 2010 earned an additional 4 percent of the vote in the Assembly, 5 percent in the Senate, and 6 percent in the House compared to 2008. Shifts of these magnitudes would qualify as substantial partisan tides in the broader sweep of American history. However, given the lopsided registration advantage for one of the two large parties in most districts, these swings did not produce any extra victories for Republican candidates.

[14] Because both the odd- and even-numbered district estimates are based on the same model for 2014 (i.e., either a "Good Democratic Year" or a "Good Republican Year") it assumes that both 2012 (when the odd seats are up) and 2014 (when the even seats are up) would be good years for the same party. In reality, a good year for one party is rarely followed by another good year for the same party. Thus, it is more than likely that the actual 2014 results will fall somewhere between the estimates we present.

[15] Our regression model predicts vote share, which we then translate into seat share. In an otherwise competitive race, even slight deviations from our model's prediction will produce the wrong winner. The Democratic underperformance is therefore a consequence of better than expected Republican performance in key competitive districts. We cannot say whether this performance is a function of something predictable and systematic that we have not included in our model or simple random chance.

Table 8. Predicted Democratic Seat Share: 2001 Plan vs. Final 2011 Plan

	Predicted Seat Share			Prob. Democratic 2/3	
	2001 Plan	2011 Plan	Significant Difference?	2001 Plan	2011 Plan
Senate: 2012					
Good Democratic Year	67%	70%	No (p=0.30)	0.60	0.94
Good Republican Year	63	66	No (p=0.32)	0.04	0.43
Senate: 2014					
Good Democratic Year	69	69	No (p=0.56)	0.89	0.79
Good Republican Year	66	63	No (p=0.32)	0.35	0.11
Assembly					
Good Democratic Year	67	68	No (p=0.52)	0.53	0.66
Good Republican Year	63	62	No (p=0.43)	0.00	0.01
Congress					
Good Democratic Year	65	72	No (p=0.14)	--	--
Good Republican Year	63	63	No (p=0.53)	--	--

Note: "Good Democratic Year" estimates are based on an OLS regression on 2008 election data; "Good Republican Year" estimates are based from the same model using 2010 election data. Model coefficients are available from the authors upon request. Significance estimates indicate the proportion of simulations where the difference between the old and new districts held the opposite sign from the reported average difference.

Democratic year in 2012 would give Democrats better than even odds (p=0.60) of claiming a two-thirds majority in the Senate, and only a good Republican year predicts a seat share (63%) close to what Democrats currently hold. Likewise, the existing Assembly districts already seem to give the Democrats good odds (p=0.53) of claiming a two-thirds majority, at least in a good year for their party.

Nonetheless, the final CRC map still improves the odds of a two-thirds majority for the Democrats in 2012. The increase is modest for the Assembly (0.53 to 0.66), but much larger for the Senate (0.60 to 0.94). Taken together, if 2012 turns out to be a good Democratic year, we

predict a six in ten chance that Democrats will win two-thirds in *both* chambers under the new maps, compared to a one in three chance under the old.

The results are much different for 2014 (recall that estimates for this year incorporate model predictions for all seats). Under the 2001 maps, the odds of a Democratic two-thirds in the Senate are a little higher in 2014 than in 2012, while under the new maps the odds are actually a little lower. In fact, when the Senate plan is considered as a whole in this way (rather than as odd and even districts separately), the maximum chances of a Democratic supermajority in the Senate are, if anything, marginally *smaller* under the new map than the old one (0.79 vs. 0.89), while the maximum chance of a supermajority in both chambers is about the same (0.52 vs. 0.47). Thus, the potential Democratic gains are less a function of the district lines themselves and are more closely related to the numbering of the Senate districts, which "front-loads" seats in 2012 where the Democrats can expect to do better.

When it comes to the U.S. House, we predict more substantial gains for Democrats under the new plan, with as many as four seats additional seats (7%) in a good Democratic year. Even a bad year for Democrats will likely net them the same share of seats they currently hold. In contrast to the Assembly and Senate plans, Republicans have performed about as expected by our model in recent elections, with the predictions using the 2001 seats closely matching what actually occurred.[16] Thus, it seems fair to attribute any estimated gains to the redistricting plan itself. Nonetheless, the uncertainty inherent to competitive seats places even this large seat gain within the margin of error, because slight vote share deviations in competitive districts can alter the predicted seat share dramatically.[17]

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[16] Our model predicts a 65% Democratic seat share in a good Democratic year and a 63% seat share in a good Republican year, compared to the 64% Democrats actually won in both 2008 and 2010.

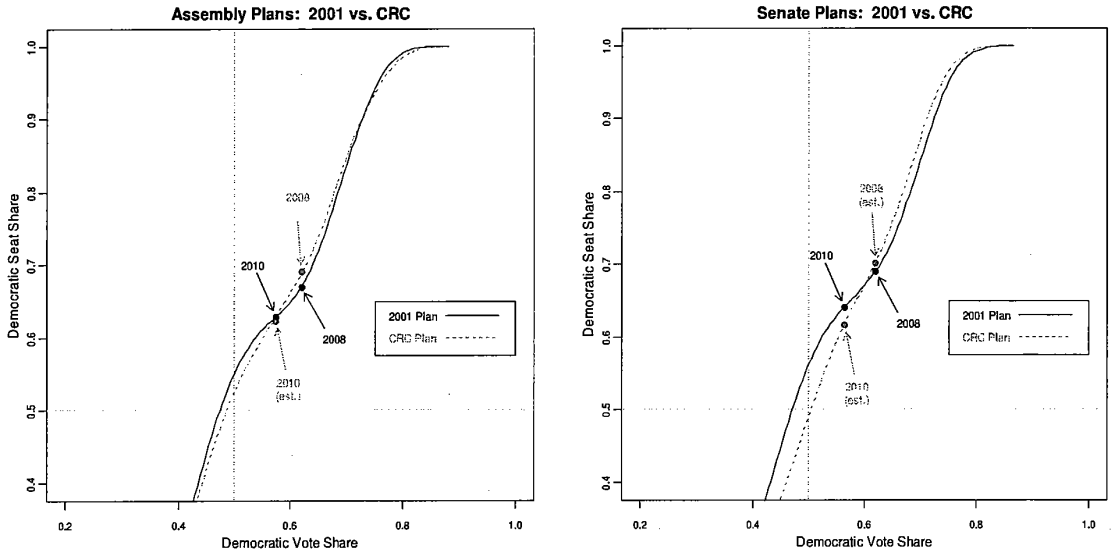
[17] Consistent with this idea, the predicted seat shares under the old plan are much more precisely estimated than they are under the new plan, while there is no such difference in precision for vote shares.

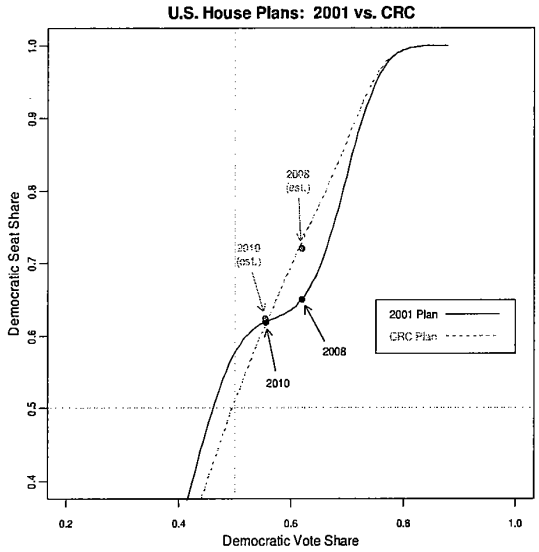
Why does the congressional plan produce so many more seats for the Democrats than either the Assembly or the Senate plans? Figure 3 offers some explanation by tracing out the seats-votes curves for the both the old districts and the new ones. A seats-votes curve displays the relationship between the average share of votes received by a party in each district and the seats won as a result across a broad range of potential election outcomes. The curves therefore allow us to identify the partisan seat share we should expect for any average vote share in that plan.[18] The black lines in Figure 3 identify the curve for the 2001 plan in each case, while the dotted red lines identify the curve for the final CRC plan. We also label the 2008 and 2010 outcomes on each graph for reference.

Each of the 2001 plans has a distinctive bowing in its seats-votes curve between a vote share of about 55 and 65 percent Democratic — exactly the range where elections in California tend to occur. This bowing is a graphical representation of the lack of competitive seats, because at the point where the curve bows, a shift in vote share (on the horizontal axis) produces a smaller change in seat share (on the vertical axis). By contrast, all three CRC plans come close to eliminating the bowing, leaving a straight line where additional votes translate into new seats at a much faster pace. In the Assembly and Senate plans, the original bowing was modest so the consequences of straightening it are less pronounced. But the bowing was quite severe in the 2001 congressional plan. Given the range of vote shares across which elections in California have historically occurred, this has limited the gains the Democrats might have achieved under a more competitive map. The predicted seat shares for 2008 make this clear: The same vote share

[18] Specifically, the seats-votes curve graphs the implications of a hypothetical partisan tide moving the vote share in every seat by a uniform amount. For example, if the Democrats received an average of 60 percent of the vote and then suddenly lost five percent in every district, the seats-votes curve would indicate how many seats the Democrats could expect to lose for that five percent, assuming that nothing else about the districts changed.

Figure 3. Seats-votes curves: existing maps vs. final CRC maps





produces a much higher seat share for the Democrats under the new map than under the old one, because the new map allows the additional Democratic support to translate into greater seat gains.

These results do not necessarily suggest that the CRC maps avoid any and all attempts at gerrymandering. But they do show that the new plans all resemble each other in the seat share that is predicted for similar shares of the vote, so the differences in partisan gains for Democrats between the new plans have at least as much to do with the 2001 plans to which they are compared as with the lines the commission has drawn. Indeed, given the strongly uncompetitive nature of the 2001 congressional plan, it seems unlikely that it is possible to draw *any* plan that increases competition among congressional seats without also advantaging the Democrats.

Summary

Our analysis of political effects points to several conclusions. First, as many observers had hoped, the districts are somewhat more competitive than the districts drawn by the legislature in 2001. Apart from the congressional plan, however, the gains in competition are fairly modest. Indeed, for the Senate and Assembly, the level of competition predicted by our model is higher for the 2001 districts than actually occurred. This suggests that factors besides either incumbency or the district lines have conspired to keep competition low in recent years and may continue to do so moving forward.

Second, the partisan change we predict for the new plans is generally modest, and where it is larger, the new lines are not necessarily to blame. Based on party registration and incumbency, Republicans have been outperforming expectations in the current set of districts, especially in the Senate, where the Democrats probably ought to have claimed a two thirds

majority already. This fact is visible without any statistical model. Under the 2001 Senate map, every Democrat represents a safe seat, while three Republican senators either represent Democratic-leaning districts or won their last election by a small margin (Sen. Blakeslee in District 15, Sen. Cannella in District 12, and Sen. Strickland in District 19). Had two of these three races turned out differently, the Democrats would already have a two-thirds majority. The handwriting for Republicans has been on the wall for several years.

Because the map in place before the redistricting already predicted better Democratic performance than actually occurred, only a small fraction of the partisan effects are properly attributed to the new lines drawn by the commission. In the Senate, improved Democratic performance is a product of district numbers more than any other cause. It is conceivable that Democrats could claim more than two-thirds of the seats in 2012 but lose the super-majority in 2014, based largely on the districts at stake in each year. Of course, one might accuse the commission of deliberately producing this result. We offer no opinion on this idea, except to note that the commission adopted a systematic method of numbering Senate districts (Citizens Redistricting Commission 2011, p. 25), so any argument about the numbering would presumably need to take issue with that process itself.[19]

We find the largest partisan effects in the House map, where the Democrats may pick up four or more seats. These gains stem from the old congressional plan as much as the new one. The 2001 congressional plan was the least competitive of the three considered here. Such low levels of competition ensured that a strong Democratic performance would not lead to gains in

[19] The commission's process intended to minimize the number of voters moving from an odd to an even numbered district or vice-versa. To our knowledge, neither the 2001 plan drawn by the legislature nor even the 1991 plan drawn the Special Masters followed a similar systematic process. The legislature made no attempt to explain any of its decisions, while the Special Masters simply noted that they "tried to assign the numbers rationally" (Special Masters, 74) and that any errors they made could be corrected by the California Supreme Court (Special Masters, fn 60).

seat share. By contrast, the new congressional plan is the *most* competitive of the three, so a good year for Democrats will probably allow them to pick up the seats they did not win before. Yet because these gains come from competitive seats, they could easily be lost again in a countervailing partisan tide. Greater competition brings opportunity, but also risk.

The implications of these results depend greatly on one's primary concern. If the question is whether the new maps are better for the Democrats, the answer is clearly yes. But the gains for Democrats are either uncertain, because they depend on competitive seats, or conditional, because they depend on the esoterica of Senate seat numbering. Moreover, there is nothing about the new lines that guarantees a good Democratic performance. If past Republican overperformance is due to systematic factors we have not accounted for in our model (e.g., strong candidates or fundraising), Republicans might continue to perform well and hold at least one-third of the seats into the foreseeable future.[20]

Discussion

There is little doubt that the maps produced by the CRC, and the process through which these plans came about, represented an important improvement on the legislature-led redistricting of 2001. The new district boundaries kept more communities together and created more compact districts while at the same time increasing opportunities for minority representation. If these maps survive the coming referendum and legal challenges, they have the

[20] There are two ways that we tested our Senate results to ensure that the real outcome for Republicans was not worse than we estimate. First, it is possible that party registration is not the best gauge of a district's political sensibilities, so we tried estimating our models with each district's 2008 presidential vote and 2010 gubernatorial vote. We obtained these vote results from the web site of Redistricting Partners, a Democratic consulting firm (http://redistrictingpartners.com/). Predictions based on these numbers actually suggested better outcomes for Republicans than the analysis using party registration. Second, we allowed for certain key incumbent decisions affecting competitive districts that have been announced or that might soon be announced: Republican Tom Berryhill running in the safe Republican District 8 in 2014 instead of the competitive District 5 in 2012; Republican Sam Blakeslee retiring, leaving solidly Democratic District 17 open; and Juan Vargas running for Congress instead of challenging fellow Democrat Christine Kehoe for District 39. The results were the same.

potential to modestly increase competition in California elections and the responsiveness of the legislative branch to changing voter preferences.

These are important accomplishments, and many supporters of Propositions 11 and 20 will rightly point to them as Californians and political observers elsewhere evaluate our state's innovative approach to redistricting. Yet any political reformer who believed that simply giving the job of drawing districts to regular citizens and attempting to take politics out of the process would produce maximum improvement on every desired dimension will surely be disappointed. As the 2011 experience has showed, many other social and political factors — such as the partisan self-sorting and segregation of the electorate — greatly limit the extent to which the redistricting process, no matter how fair and nonpartisan, can change the product of redistricting. Maximizing certain criteria, such as keeping communities intact and protecting the voting rights of historically underrepresented groups, makes achieving other goals, such as increasing competitiveness, more difficult. Perhaps most importantly, the experience of the CRC has shown that a nonpartisan, participatory, and transparent process does not eliminate the zero sum nature of electoral competition. The commission's maps have both winners and losers and may result in lasting impacts on the balance of political power. If Californians decide that they like their new system of drawing lines, they will need to jealously guard it in future iterations, because the organized interests who care most about the process will surely learn from this maiden voyage. They will attempt to either steer future commissions in their direction or sabotage the commission's efforts entirely.

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TAB 8

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The latest on California politics and government

September 29, 2011

Suit filed against new California congressional districts

A former Republican congressman and four others filed suit Thursday with the **California Supreme Court** alleging that that state's newly drawn congressional districts are illegal and unconstitutional.

The suit by Mariposa Republican **George Radanovich**, who left Congress last year, asks the court to throw out the 53 new congressional boundaries and appoint a special master to draw new ones.

The legal challenge comes nearly one month after opponents of the congressional maps announced a referendum drive aimed at letting voters decide the fate of the new maps. That drive apparently has snagged.

California's congressional, legislative and Board of Equalization districts were drawn for the first time this year by an independent citizens commission, rather than by the Legislature, under terms of ballot initiatives passed in 2008 and 2010.

"California voters approved two initiatives designed to finally remove politics and back room deals from redistricting. Unfortunately, the Citizens Redistricting Commission failed miserably in that respect," Radanovich said in a written statement.

Specifically, Radanovich's suit targets three Los Angeles districts, claiming that lines were drawn to protect three incumbents in violation of federal law and the state constitution.

The commission failed to meet its obligation under the federal Voting Rights Act to ensure that one or two of those congressional districts had a majority of African American voters, the lawsuit contends.

"The only apparent reason for such neglect by the commission was to enable the three current incumbents to remain in office," Carlos Rodriguez, a GOP strategist, said in a statement announcing the suit.

In somewhat of a ripple effect, the failure to properly draw lines for those three Los Angeles congressional districts denied Latinos elsewhere in the county of one - perhaps two - additional Latino-majority districts, according to Rodriguez.

The suit also takes aim at Congressional District 47, which "begins at the port of Long Beach and then wanders far into central Orange County to absorb portions of Garden Grove and Westminster," the suit said. "This divides the Orange County Asian community."

Rodriguez could not be reached immediately Thursday for further comment. He announced plans Aug. 30 to launch a referendum drive against the congressional maps but has kept a low profile amid reports that the effort lacks adequate funding and has stalled.

A separate coalition of Republican Party interests, led by Sacramento-based political strategist David Gilliard, has started a referendum drive and filed suit against the state's 40 new state Senate districts.

Rob Wilcox, spokesman for the redistricting commission, had no immediate comment on the congressional suit.

Approval of new political districts required support from three of five Democrats on the redistricting commission, three of five Republicans, and three of four independent or minor party voters.

The commission consistently has said that its members are confident their maps will withstand any legal challenge.

Categories: Redistricting

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TAB 9

Great Expectations and the California Citizens Redistricting Commission

by Vladimir Kogan and Thad Kousser

Established through an initiative that won by the narrowest of margins in November 2008, California's Citizens Redistricting Commission represents the dreams of a diverse collection of reformers united only by their conviction that the state's post-2000 redistricting had been a nightmare. That plan, a classic incumbent gerrymander, created few competitive districts, kept some minority groups on the outskirts of the process, and did little to moderate the nation's most polarized legislature. The new commission was designed to ensure that history would not repeat itself when state[1] (and then federal)[2] legislative district lines were redrawn after the 2010 census figures arrived.

While many of its proponents acknowledged that the commission could bring only modest changes to the eventual outcome of the redistricting process, its strongest boosters and most ardent supporters portrayed it as a silver bullet aimed at solving all of the vexing problems of redistricting: taking politics out of the most inherently political act that a state government performs; molding a bipartisan consensus around a bitterly polarizing issue; reserving a seat at the table for a diverse set of racial and ethnic minority groups and other loosely defined "communities of interest;" and maximizing a series of redistricting criteria that are all in tension with each other. Pursuing all of these improvements at once can make each of them difficult to deliver, creating a set of great expectations that will be a constant challenge for the commission to meet.

This chapter tells the story behind the creation of the Citizens Redistricting Commission. We argue that knowing the history of redistricting in California and previous attempts to reform the process are crucial to both understanding the eventual

design of the commission and the political campaign that led to its enactment.[3] We begin by asking how this campaign succeeded when so many past attempts to establish independent redistricting boards for California had failed. We then make the case that reformers' revulsion with the redistricting process at the beginning of the decade, along with their need to fashion a coalition to change it by the decade's end, influenced how they constructed the commission and campaigned for its passage. We summarize the design of the commission, and the claims made by both its authors and its proponents during the November 2008 election.

These factors, in turn, put in place a set of expectations for the commission's performance that will pose a tremendous challenge to meet. We review those hopes, speculating about which ones the commission is best positioned to fulfill and which will pose its most difficult tests. Already, the experience of selecting commissioners and hiring their support staff provide hints that that realities of modern day politics in California have begun to show how difficult many of the campaign's promises will be to keep. We conclude by setting forth a simple framework for evaluating the performance of the commission when California's new district lines are drawn once and for all. We contrast this framework to the ways in which we predict that its performance will, in fact, be evaluated.

The Mystery of 2008: Why Did Prop. 11 Succeed When So Many Past Attempts Failed?

During the fall 2008 campaign season, the issue of redistricting reform was largely overshadowed by a historical presidential election and other hot-button initiatives — including a constitutional amendment to overturn a recent state court decisions

guaranteeing same-sex couples the right to marry. In the days after the election, however, Proposition 11, which proposed the creation of an independent redistricting commission, attracted new attention. In an electoral photo finish, the measure had eked out a tiny lead on Election Night, and the final outcome of the election remained uncertain for weeks as election officials continued to count hundreds of thousands of vote-by-mail ballots. In the final tally, the measure maintained its lead — but just barely. It won by fewer than 200,000 votes, out of more than 12 million cast.

Perhaps more surprising than the close contest was the fact that the measure attracted even close to a majority of the statewide vote. In the three decades leading up to 2008, California voters had considered the creation of an appointed redistricting commission on four occasions, and each time decided against doing so by wide margins. These failed measures are summarized in Table 1 below. Just three years earlier, voters handed Gov. Arnold Schwarzenegger a stinging defeat by rejecting his proposal for a commission of retired judges to draw political boundaries, with the initiative losing by nearly 20 percentage points.

[Table 1 About Here]

Table 1. Failed Redistricting Reform Proposals in California

Year	*Proposition*	*Percent Yes*	*Proposal*
1982	14	45.5	Create 10-person Districting Commission, with four members (including chairman) selected by a panel of justices from California appellate court and three members appointed by each political party. Specifies criteria for drawing districts.
1984	39	44.8	Create commission of at least 10 members, all selected by the president of the University of California through random drawing using lists of retired appellate court judges. Half of the judges would be Republican appointees and half Democratic appointees. Requires at least two other appointed nonvoting members. Specifies criteria for drawing districts.
1990	119	36.2	Create 12-person commission appointed by a panel of retired appellate court justices from list of registered voters nominated by nonprofit, nonpartisan organizations. Specifies criteria for drawing districts.
2005	77	40.2	Create three-member panel of retired federal and/or state judges combining nomination by legislative leaders and random lottery. Requires that each major party have at least one representative. Specifies criteria for drawing districts.

Source: University of California Hastings College of the Law, *California Ballot Propositions Database*.

The unexpected success of Proposition 11 was a testament to the political acumen of its authors, who were able to bring together an unusual, diverse coalition of interests that included good-government activists, some minority voting rights leaders,[4] and members of the state's rapidly shrinking Republican Party. Republicans were motivated primarily by fear of the political fate they might suffer at the hands of an entirely Democratic-controlled government at the beginning of the decade; with the likely victory of Democrat Jerry Brown in the 2010 gubernatorial election and the near-certain

Democratic control of both houses of the state legislature, the Democrats would be in strong position to devise a plan favorable to the majority party. Reformers and some members of minority communities were mobilized by their indignation over the maps drawn after the 2000 census and their worry of a repeat a decade later.

Indeed, the 2000 redistricting plan and the outrage it engendered provided a critical talking point in the campaign for Proposition 11. After the 1998 gubernatorial election, when Pete Wilson was replaced by Gray Davis, the Democrats secured control of both the legislative and executive branch for the first time in nearly two decades. However, their ability to parlay the power created through unified control of government into political districts that favored Democratic candidates was largely constrained by the threat of direct democracy and legal challenges, two key but largely overlooked factors that have had tremendous influence in California redistricting politics since the late 1960s. A common view of the way that redistricting operated in California before the creation of the Citizens Redistricting Commission was enunciated by journalist and author Lou Cannon, writing in support of Proposition 11: "As it presently stands, California is a state where legislators choose their voters rather than the other way around."[5] If legislators were truly in control of the redistricting process during this era, then the Democratic majority that held a firm grip on legislative power during the 2001-2002 session would have had a free hand to draw a "partisan gerrymander" — a plan that would favor own their party by delivering the maximum number of legislative seats for a given percentage of the popular vote — for the next decade. Instead, the plan that legislators eventually passed was an "incumbent gerrymander" — a plan that favored

current officeholders of both parties, because it contained relatively few competitive districts in which the parties were evenly matched. [6]

Why did lawmakers take this approach? They did so because legislators alone were not in control of redistricting in California before 2008; they merely began the process. A more complicated but more accurate summary of the pre-commission process is that legislators negotiated with governors to draw district lines, often under the threat of a proposition and always in the shadow of Supreme Court ready to step in to draw lines should the elected branches of government deadlock. In California's hybrid system of representative and direct democracy, controversial issues with high stakes frequently generate proposition campaigns and initiative threats, either one of which can be strong enough to constrain the behavior or legislators.[7] All across the nation, the specter of courts stepping in to redraw lines if elected officials deadlock or violate voting rights laws exerts a powerful effect on the process. In some cases, legislators are directly replaced by courts and court-appointed "special masters" as the line drawers. In other cases, the courts exert an indirect effect when the threat of losing this power is enough to convince legislators to cut a deal that benefits the party of the governor or president who appointed more of the relevant judges.[8]

In California, courts have played a direct role in drawing lines in half of the redistricting battles that occurred since the Supreme Court's the one-person, one-vote decisions in the 1960s began the modern era of redistricting. In both 1970 and 1990, divided government and vetoes by Republican governors of redistricting plans drawn up by Democratic legislatures handed the matter to the Supreme Court, which appointed "special masters" who drew the new boundaries. These masters then drew plans that, as

demonstrated by both qualitative and quantitative analysis, appeared to benefit the party of the governor who had appointed a majority of Supreme Court judges. Divided government has lead to deadlock over redistricting legislation in California, with the party most heavily represented in the judiciary holding the tiebreaking vote.[9]

Even when members of one party have controlled both the legislature and the governorship in California, they have not exerted unchecked power over how to draw lines. In the early 1980s, unified Democratic control was undermined by a popular referendum funded by Republicans that led to voter rejection, in the June 1982 primary, of redistricting plans drawn up by Democratic leaders. Emboldened by this victory at the ballot box, Republicans allied with the good government group Common Cause to put forth a proposition to establish a redistricting commission on the November ballot (Proposition 14, described in Table 1). Yet the measure lost, leaving the state with no clear district lines during a time of partisan transition in the executive branch. Democratic legislators rushed to redraw lines, passing a compromise redistricting plan after the November election but before lame duck Democratic Gov. Jerry Brown had left office and his Republican successor George Deukmejian had been sworn in.[10] The plan was generous enough to Republicans to garner a two-thirds vote in each house, allowing it to go into effect swiftly enough to avoid another referendum.[11] Those lines stayed in place for the decade,[12] but a clear lesson of the entire episode was that direct democracy's usage or its mere threat imposes a significant constraint on legislators when they redraw California's districts.

This contentious history — in particular the defeat of the post-1980 Democratic redistricting plan at the ballot box — provided an important backdrop as Davis and

Democratic leaders prepared for reapportionment after the 2000 census. With slower population growth bringing just one new congressional seat to California, any significant Democratic seat gain would need to be offset by Republican losses. However, Republicans made it clear that any plan that reduced the size of the party's congressional and legislative delegations would face legal challenges, a referendum, or both. The stalemate laid the groundwork for a bipartisan gerrymander that protected the incumbents from both parties by drawing safe districts that minimized partisan turnover. "We Republicans have an incentive to work with Democrats because we know they can do the redistricting without us," one Republican legislative leader explained. "They have an incentive to work with us because they know we can do a referendum and throw it into the court."[13] By attracting enough Republican votes, the Democrats could pass a redistricting plan as an "urgency" measure, exempting it from any referendum challenges.

The plan that emerged from the post-2000 redistricting was a model of bipartisan compromise. It pleased incumbents and legislative leaders from both parties — but few others. Some minority group leaders argued that the plan represented a lost opportunity to increase representation for historically excluded groups. "The Latino community feels very strongly that they have been victims of a lot of political deals and their voice has been lost," complained Amadis Valez of the Mexican American Legal Defense and Educational Fund, which unsuccessfully challenged a portion of the plan in court.[14] "We believe that the concerns for incumbency protection and having a bipartisan deal overrode giving a full opportunity to the Latino community in Los Angeles County and other ethnic communities as well," he said in another interview.[15]

Not every ethnic representative felt left out of the process; indeed, the many Latino legislators who exerted great influence in the state assembly and senate received favorable districts. Asian-American representation in the assembly doubled from three seats in 2000 under the old districts to six seats under the new lines in place in 2002.[16] Still, in specific geographic areas where these groups were growing the fastest, some felt that incumbents had been protected at a cost to their communities. Latino groups particularly objected to boundary changes that shifted a significant number of Latino voters out of a San Fernando Valley district north of Los Angeles represented by long-time Democratic Congressman Howard Berman. The changes, no doubt made by Berman's brother Michael, one of the Democratic redistricting consultants, helped protect Berman from a likely Latino primary challenger.[17] Asian-American groups similarly objected to portions of the plan that divided growing Asian and Pacific Islander communities in the west San Gabriel Valley. Critics complained that the legislative plan "sliced and diced" the Asian-American community, and Kathay Feng, a young Los Angeles lawyer representing the Coalition of Asian Pacific Americans for Fair Redistricting, led the charge against the gerrymander. A decade later, Feng would become the executive director of Common Cause, a major government reform group whose support would play a key role in the passage of Proposition 11.[18]

Even as some minority interests complained about the representational implications of the new plans, newspaper editorial boards and government reformers blasted what they saw as an outcome of a corrupt political bargain. Many observers complained that, by creating safe districts, the plan protected incumbents from political competition, weakening the democratic link between voters and their elected

representative. By shifting the locus of political competition from general to primary elections, critics warned the new district lines encouraged candidates to woo the extreme activists in their parties, exacerbating already high levels of political polarization in the state legislature.

How accurate was the claim that the post-2000 plan, by eliminating any vestige of political competition from the state legislature, made all incumbents safe, locked in one-party rule, and accelerated partisan polarization in Sacramento? Though not entirely unfounded, this complaints exaggerated the impact of new maps by attributing to them all of the effects of the demographic and political dynamics that were at work in California and the nation over this period. All three of the political changes attributed to district lines were also driven by long-term trends that show few signs of reversing themselves. In a later section of this chapter, we evaluate the conventional critique that the post-2000 plan prevented political competition, drawing lessons for the prospects that the Citizens Redistricting Commission will be able to deliver much more meaningful competition and less polarization. For now, it suffices simply to note that this critique was indeed conventional, and that it brought good government activists and many newspapers into the coalition of the outraged that came together to cleanse the many sins of the post-2000 process through a new independent commission.

The Campaign for Proposition 11

While discontent over the redistricting plan produced after the 2000 reapportionment created significant potential support for redistricting reform, it would take the political

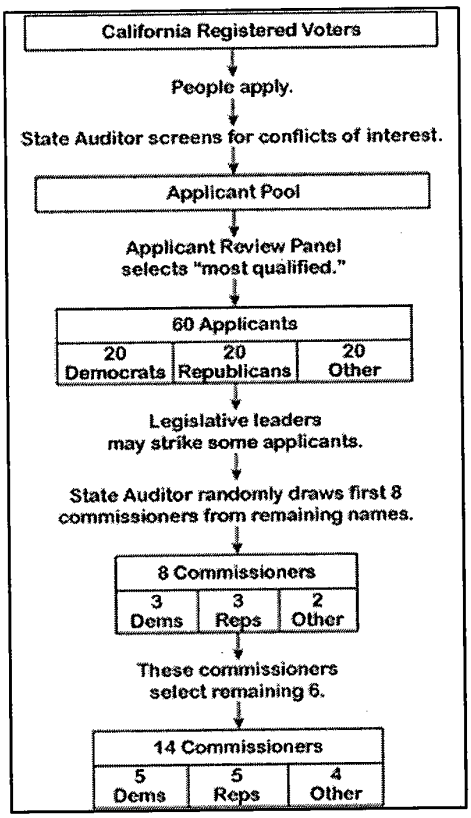
skills of Proposition 1's1 authors to activate this latent coalition in the electorate and sell the measure to voters historically distrustful of appointed redistricting commissions. Since the 1980s initiatives for appointed commissions, proposed redistricting reforms have largely — and accurately — been associated with Republican interests, limiting the broader appeal of the measures.[19] By failing to provide explicit protections for the representation of ethnic and racial minority groups, the unsuccessful commission proposals did little to attract support from Latinos and Asian-Americans who may have been dissatisfied with the existing process. For example, critics assailed Gov. Schwarzenegger's 2005 plan, which proposed giving retired judges power over redistricting, by pointing out that most the state's retired jurists where upper-class white men.

Proposition 11's proponents clearly learned the lesson from the earlier campaigns. Their measure proposed to open up the process to all Californians, and its language provided for a complicated selection process for choosing redistricting commissioners that combined a rigorous review by the respected state auditor to eliminate unqualified applicants with a random lottery (see Figure 1), appealing to grassroots reformers. Since it specified that all political staffers, public officials, and future candidates would be ineligible to serve, the initiative eliminated concerns that it was a political power play cooked up by political insiders. By requiring that the proposed 14-member commission include five Democrats, five Republicans, and four members unaffiliated with either major party, and specifying that the final district boundaries would need to be approved by at least three Democratic commissioners, three Republican commissioners, and three independents, the measure appeared to ensure that neither party would be advantaged in

the process. In limiting the scope of the new commission to state legislative districts and the state board of equalization, leaving control over congressional redistricting in the hands of the legislature, the measure's authors also avoided a large influx of campaign money from Democratic congressional leaders who would have, no doubt, fought any proposal that involved changes to how the congressional districts were drawn.[20] Finally, and perhaps most importantly, the language of Proposition 11 explicitly required that commissioners demonstrate "appreciation for California's diverse demographics and geography," and specified that the final six members of the commission would be selected explicitly "to ensure that the commission reflects this state's diversity, including, but not limited to, racial, ethnic, geographic, and gender diversity."[21]

[Figure 1 About Here]

Figure 1. Proposition 11 Commissioner Selection Process



Source: California Secretary of State, *Voter Information Guide*.

Although the authors of Proposition 11 did not explicitly argue that the creation of a redistricting commission would inject new competition into the political process — indeed, the language of Proposition 11 actually prohibited the districts from being drawn "for the purpose of favoring or *discriminating against* an incumbent" (emphasis added) — they did little to correct the record when such arguments were made by newspaper editorials and supporters. For example, one Yes on Proposition 11 commercial explicitly made a case for the measure by implying that it would increase the competitiveness of

existing legislative districts. "Let's hold politicians accountable if they don't do their job," a firefighter featured in the ad said. "If they don't do their job, Proposition 11 makes it easier to vote out of office." A similar argument was repeated in the official voter pamphlet mailed to registered voters: "If Legislators don't have to compete to get re-elected, they have no accountability to voters. That meant they don't have to work together to solve problems like education, health care, roads, crime, and the state budget. Proposition 11 will keep politicians tuned-in to voter needs."[22] The editorial board of the *San Diego Union-Tribune*, which came out in support of the measure, went even further, arguing that it would result in political lines "in which incumbents are at risk every election if they let problems continue to fester."[23]

In short, by carefully designing the proposal to address every weakness and complaint lodged against previous redistricting reform initiatives and by capitalizing on anger over the post-2000 incumbent gerrymander, the authors of Proposition 11 largely anticipated and muted the criticisms that could be levied against their proposal. The success of their electoral strategy can be assessed by comparing the voter coalition for Proposition 11 to those who had voted in favor of Proposition 77, the Arnold Schwarzenegger-backed redistricting commission initiative that appeared on the ballot three years earlier. Table 2 below provides a summary of polling data drawn from statewide surveys carried out by the Public Policy Institute of California in October of each election year. The data suggest that Proposition 77 received its strongest support from Republican voters, with only one in five Democrats reporting that they planned to vote for the measure in a survey done a month before the 2005 election. By contrast the two parties were almost evenly divided on Proposition 11 in 2008 — even though

financial support for the initiative came almost exclusively from Republican donors.[24] Although the Democratic Party had taken an official position against the measure, Proposition 11 proponents attracted endorsements from high-profile Democrats such as former Gov. Gray Davis and several other prominent elected officials. In addition, although minority voters came out sharply against Proposition 77, their opinions remained evenly divided on Proposition 11. Across all groups, voters remained far more uncertain about the 2008 measure than they had been about Proposition 77 three years earlier.

[Table 2 About Here]

Table 2. Public Opinion on Redistricting Reform

	PROP. 77 (2005)			*PROP. 11 (2008)*		
	Yes	*No*	*Don't Know*	*Yes*	*No*	*Don't Know*
Democrats	18%	63%	19%	37%	35%	27%
Republicans	56%	28%	16%	47%	28%	26%
Independents	31%	52%	17%	41%	30%	29%
White	36%	48%	16%	42%	28%	29%
Asian	35%	44%	22%	33%	39%	28%
Black	24%	54%	23%	28%	41%	31%
Latino	23%	42%	37%	21%	22%	57%

Source: Public Policy Institute of California Statewide Surveys.

Which Expectations Will be Difficult to Meet?

To satisfy the varied interests included in their big-tent coalition, supporters of Proposition 11 promised that the reform would deliver a variety of political and practical benefits. Some of these promises were actually written into the wording of the measure. For example, the initiative added new language into the state constitution laying out explicit criteria the citizen commission would use to draw lines, in order of priority. First and foremost, these required the commission to comply with the federal constitution by drawing equally sized districts and to abide by the requirements of the federal Voting Rights Act. In addition, the language stated that the districts would be geographically contiguous; would respect the "geographic integrity" of existing local governments, neighborhoods, and "communities of interest"; and be drawn to maximize geographic compactness.

Despite their importance, these formal requirements rarely appeared in the ads and campaign materials created by the measures' supporters. In the voter pamphlet, the Proposition 11 authors stressed that, for the first time, the lines would be drawn by independent citizens rather than politicians, creating "fair districts that truly respect California's communities and neighborhoods for the first time."[25] Endorsements by newspaper stressed that the commission would use objective standards, rather than subjective political considerations. Tony Quinn, a veteran political observer and former Republican operative, predicted that the passage of Proposition 11 "will create more competitive districts for the next decade and will require both parties to run more candidates who can win in politically marginal territory."[26]

In some cases, however, the soothing campaign rhetoric appeared to conflict with the formal language written into the measure. In others, the promises appeared to rest on

reformers' belief that an appointed commission would, due to the political virginity of its members, be inclined to put the best interests of the state against their personal and partisan loyalties. These beliefs were quickly tested as the commission began its work. In this section, we review the early challenges to meeting the promises made to voters by Proposition 11 supporters that emerged in the 30 months since the measure's passage.

An Apolitical Commission?

The hope that a commission of citizens would be insulated from the rough-and-tumble of daily politics largely ignored the reality that drawing boundaries is inherently a political process, implicating the representational goals and values about which reasonable people can disagree. Although Proposition 11 delegated the task to a commission, the fact that individuals had to apply to serve — a comparatively costly effort that required the completion of a series of essays and the submission of letters of recommendation — naturally resulted in a pool of applicants far more knowledgeable, sophisticated, and political than the average California voters. Although none of the individuals eventually picked for the commissions could be described as partisan activists, several had strong views on the redistricting process and had been active in the area.

The first major political test for the commission came in early 2011, when it was scheduled to hire two consultants — a law firm to advise the commission on relevant voting rights requirements, and a technical team to help the commission draw the maps. Naturally, because redistricting in California had long been a partisan affair, nearly all of the top consultants in the state had a history of partisan ties. Having to choose among

competing firms, often with dramatically different partisan reputations, created a source of significant political controversy for the commission. The requirements for an extraordinary majority — three votes from each major party and from the nonpartisan delegation were required to select each consultant — did little to mute controversy.

In late March, the commission took up the task of hiring its legal advisor. Although a number of firms had submitted bids, the commission identified two contenders as finalists and each struggled to overcome a reputation developed through their previous work with partisan actors. Democrats and nonpartisan members objected to hiring of Nielsen Marksamer because the firm was a registered lobbyist in the state and had strong ties to the Republican Party. By contrast, Republicans raised concerns about the other main competitor, Gibson, Dunn & Crutcher, whose lawyers had a record of donating to Democratic candidates and had led the legal battle to overturn the state's ban on same-sex marriage.[27]

At the end, the commission voted 11-3 to hire Gibson, Dunn & Crutcher. However, all three dissenting votes came from Republican members of the commission, leaving too few Republican supporters to meet the voting threshold required by Proposition 11. The deadlock highlighted the crucial weakness of the initiative — although it required bipartisan approval for most major commission decisions, it did not specify what would happen if such approval failed to materialize. Fortunately, the immediate crisis was averted when Nielsen Marksamer announced that it was withdrawing its bid, clearing the way for the selection of the firm favored by Democratic and nonpartisan commissioners.

Similar partisan bickering surrounded the choice of a technical consultant to be hired to assist the commission with drawing the political boundaries. Only two organizations submitted bids, and again, each had a prominent reputation for working with partisans. One proposal came from the Rose Institute of State and Local Government at Claremont McKenna College, a research outfit founded by Republican donors in the 1970s to set up a computerized redistricting center.[28] The other came from Q2 Data and Research, run by UC Berkeley demographer Karin Mac Donald. Although Mac Donald, a registered independent, was widely respected for her work running Berkeley's Statewide Database, a collection of demographic maps and data available to the public, her firm was co-owned by Bruce Cain, a prominent Berkeley political science professor despised by many Republicans for his role in helping Democrats draw up the 1980 redistricting plan.

When the commission moved to disqualify the Rose Institute because its hastily prepared proposal failed to disclose potential conflicts of interest among its staff, the partisan divisions on the commission were again laid bare. As before, three of the five Republican members voted against throwing out the bid. By contrast, the Democratic and nonpartisan members were strongly in favor of doing so. Because the special majority requirement did not apply to the vote, Republican support was not enough to salvage the Rose Institute bid. With Q2 left as the only bidder, the commission voted unanimously to hire Mac Donald.

For Republican observers, the two contentious votes, presented in Table 3, were evidence that the commission had been polluted by politics. In commentary published on a prominent conservative website, the respected Republican analyst Tony Quinn charged

that the citizens redistricting commission "has now descended into a cesspool of corruption, and the promise of fair new districts has been compromised by brutal politics instigated by the commission itself."[29] Although Republicans had been satisfied enough with the commissioner selection process to endorse a November 2010 initiative expanding the scope of the commission's work to cover congressional districts, Quinn now argued that the state auditor had compromised the process by disqualifying conservatives, leaving Republican commissioners too moderate and weak to take on the Democratic partisans on the commission. Widely read *Sacramento Bee* columnist Dan Walters, who had been a strong proponent of Proposition 11, agreed that the commission was beginning to show "true colors of ideology," noting that the nonaligned, independent commissioners had a "liberal bent."[30] Although many good government reformers continued to defend the commission, the two early votes revealed that their early hopes for a citizen commission that could take political considerations out of in inherently political decisions had already been tempered.

[Table 3 About Here]

Table 3. Contentious Commission Votes

	Party	*Motion to hire Gibson, Dunn & Crutcher as legal consultant*	*Motion to disqualify bid from Rose Institute*
Connie Galambos Malloy	Decline to State/Other	Yes	Yes
M. Andre Parevnu	Decline to State/Other	Yes	Yes
Michelle R. DiGuilio	Decline to State/Other	Yes	Yes
Stanley Forbes	Decline to State/Other	Yes	Yes
Angelo Ancheta	Democrat	Yes	Yes
Cynthia Dai	Democrat	Yes	Yes
Gabino Aguirre	Democrat	Yes	Yes
Jeanne Raya	Democrat	Yes	No
Maria Blanco	Democrat	Yes	Yes
Jodie Filkins Webber	Republican	No	No
Libert "Gil" R. Ontai	Republican	Yes	Absent
Michael Ward	Republican	No	No
Peter Yao	Republican	No	No
Vincent Barabba	Republican	Yes	Yes

Balancing Criteria

The second serious challenge facing the commission will involve balancing the objective redistricting criteria added into the state constitution by Proposition 11 with the strong desire of some of its supporters that redistricting reform inject new competition into the political process. The central problem is that many of the required criteria — especially those dealing with adherence to existing political boundaries and geographic compactness — actually make drawing competitive districts more difficult.

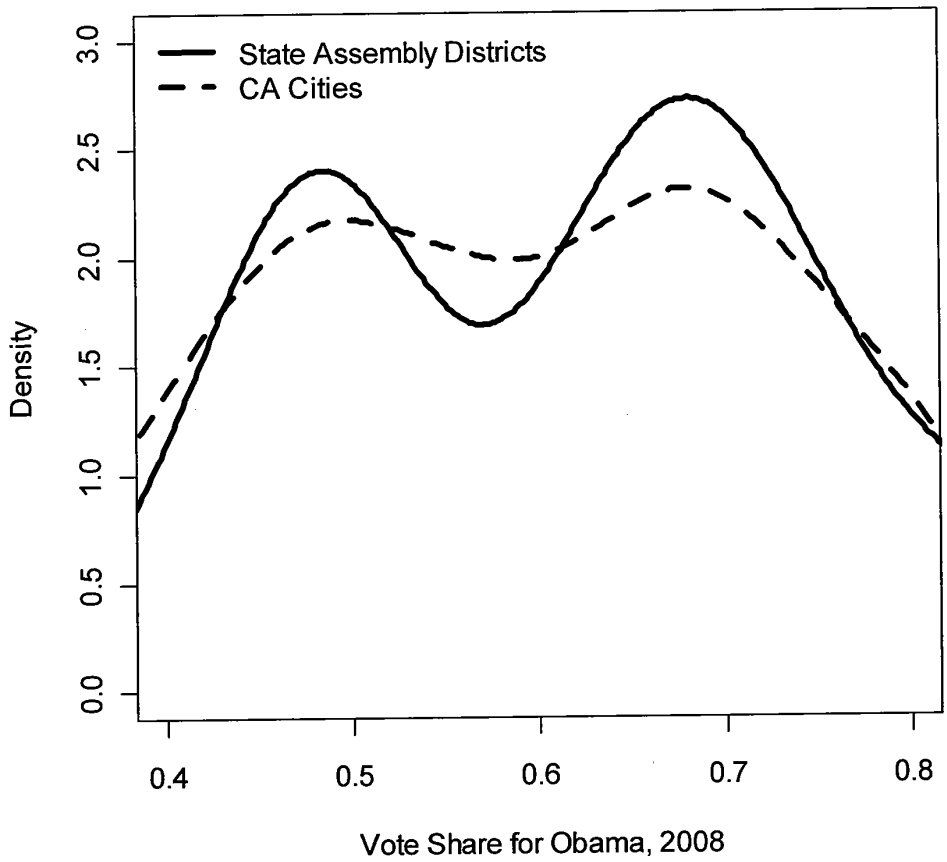
The tension between the formal criteria and competitiveness is the result of what political scientists call "partisan sorting" — the natural tendency of people to live with

those similar to themselves. As one recent study of redistricting reform in California has noted, "California's political geography is such that Democrats predominate in many urban areas and Republicans in suburban and rural areas. When city and county boundaries are kept intact, the consequence is a baseline of non-competitiveness in most areas."[31]

The political reality of residential sorting can be made clear by examining the results from the 2008 presidential election in California. In Figure 2 below, the solid black line plots the distribution of the vote share that President Obama won in each assembly district. The distribution is bimodal — in most districts, Obama either won a sizeable majority of the votes or lost by a significant margin, with few areas where the election was truly close — confirming that the post-2000 redistricting produced political boundaries highly favorable to political incumbents. What is surprising, however, is the distribution of Obama's vote share within California's incorporated cities, represented by the dashed black line in Figure 2. Although a greater share of cities were competitive than assembly districts, a close election was still relatively rare. As was the case among the assembly districts, the outcome of the presidential election in most cities was also highly bimodal. Simply drawing political districts based on pre-existing municipal boundaries, as is required by the Proposition 11, would, in other words, produce few additional competitive elections,[32] one of the primary arguments made in favor of the measure.

[Figure 2 About Here]

Figure 2. Residential Sorting in California



Source: California Secretary of State, *Statement of the Vote*.

Although residential patterns alone will result in the creation of mostly-lopsided districts, efforts to increase minority incorporation and comply with the Voting Rights Act will further limit the commissions' ability to create more competition. The creation of majority-minority districts, where minority voters have the greatest ability to elect representatives of their choosing, almost always entails drawing districts where the Democratic Party has an overwhelming majority — because most minority voters are

Democrats, as are many whites or members of other minority groups who live among them.[33]

Redistricting by Consensus?

One of the primary attractions of Proposition 11 for many voters was the idea that, for the first time, regular people rather than elected officials would get to write the rules of the political game. The requirement that commissioners of all political persuasion — members of both major parties and independents — sign off on the final plan was also promoted by the measure's proponents as a guarantee that the reapportionment plan drawn by the commission would not tilt that playing field to favor any political party. The same super-majority rule, however, also increases the chance that the courts, rather than the commission, may get the final say.

The early skirmishing about the hiring of commission staff raises worries that the commissioners' partisan loyalties will color their views about the redistricting process. Having failed to garner the necessary votes for the rather mundane task of hiring a legal counsel, it remains far from clear that the commission will be able to reach consensus on far weightier questions and agree on a final set of maps. What would happen if the commission plan did not receive majority support from each partisan delegation remains far from clear — because Proposition 11 remains silent on the possibility of a commission deadlock. As has been the case with legislature-led apportionment, deadlock on the commission would almost surely punt the matter to the state supreme court. Anticipating this possibility, and realizing that Republican appointees currently make up

a significant majority of the state supreme court, Democratic members of the commission will face strong incentive to compromise to reach the necessary vote threshold. (For the same reason, Republican commissioners may prefer to hold out, since doing so would hand the matter to a court and special masters who might who might draw maps sympathetic to the concerns of Republican groups.)

In addition to anticipating the possibility of deadlock, the commissioners will also likely face significant pressure from outside groups, who may use the threat of a referendum on the final maps to extract favorable concessions. In San Diego, for example, such threats proved incredibly powerful during the city's redistricting process after the 2000 census, where the city's appointed redistricting commission responded to demands from homeless advocates to change the maps in the face of threats of a direct democracy campaign to overturn its final boundaries.[34] Together, the possibility of court intervention and referendum will serve as a powerful gun behind the door, introducing strategic political considerations into the redistricting process that the new commission process has promised to avoid. Although the Citizens Redistricting Commission will get the first shot at drawing the maps, it is far from clear that it will have the last word.

Which Expectations Will be Easier to Meet?

The challenges presented by high expectations do not mean that redistricting carried out by an independent redistricting commission will mean business as usual in California. Indeed, the process of selecting the commissioners and the early months of its

deliberations suggest that the new process presents a dramatic break with the past, creating new opportunities for citizen participation and the previously excluded voices.

Enhancing Minority Representation

The promise that redistricting reform would increase the voices of California's minority populations were quickly tested as the process laid out Proposition 11 began to take shape. Although the state auditor worked closely with grassroots groups to encourage individuals from all walks of life to apply for a seat on the commission, the initial pool of applicants heavily underrepresented racial and ethnic minorities. Of the 4,500 individuals who completed an application in early 2010, more than 70 percent were white. Latinos was by far the most underrepresented, making up more than a third of the state's population but fewer than one in ten applicants.[35]

The initial review by state auditors, who were tasked by Proposition 11 with examining potential conflicts of interest and identifying whether individual applicants met the qualifications required by the ballot measure, did not dramatically correct the imbalance. By June 2010, the auditors had narrowed the pool to 314 applicants. Whites made up more than 60 percent of the remaining individuals, with Latinos still heavily underrepresented. With more than three-quarters of all applicants reporting an annual income of above $75,000, the remaining pool was also significantly more affluent than the California population.[36]

By August, in the face of significant media scrutiny and early rumblings of criticism, the numbers began to change dramatically. As the auditors worked to identify

the finalists, they may have paid close to the requirements that applicants demonstrate an "appreciation for California's diverse demographics and geography," because the demographic profile of the applicant pool changed dramatically at this stage. Among the 60 finalists, the proportion of whites dropped to less than one third, with significant increases in representation for blacks, Latinos, and Asian-Americans.

The 14 commissioners selected to serve on the commission represented a further improvement in minority representation, as can be seen from Table 3. Overall, whites accounted for less than a fifth of the commissioners, with Asian-Americans, blacks, and Latinos collectively making up nearly three-quarters of the commission. For the first time in California history, these groups would lead the process of designing political districts that would determine the nature and quality of political representation in the state.

[Table 3 About Here]

Table 4. Demographic Evolution of Commissioner Selection Process

	Completed Applications	*First Round of Review*	*Second Round of Review*	*Finalists*	*Selected Commissioners*
Asian/Pacific Islander	5%	9%	9%	18%	36%
Black	10%	9%	9%	13%	14%
Latino	9%	10%	14%	28%	21%
White	72%	68%	62%	33%	21%
Other	4%	4%	6%	8%	7%
TOTAL	*4,547*	*622*	*314*	*60*	*14*

Source: Applicant Review Panel; authors' calculations.

However, despite winning a greater seat at the table for the 2010 round of redistricting, minority groups will also face new challenges to translating their newfound influence into political representation. One such challenge concerns changes to the

census, which will make it more difficult for demographers to estimate the size of the eligible, voting-age population, especially for fast-growing minority groups like Latinos. Through 2000, estimates of the citizen voting-age population (CVAP) were constructed by combining demographic data from the regular census with citizenship data from the census "long form," a more extensive questionnaire sent to 15 percent of the country's households. Over the past decade, however, the long form has been replaced with the annual American Community Survey, which, due to a smaller sample size and the need to pool data across years, results in far less precise estimates of the number of eligible voters for various ethnic subgroups.[37]

Creating More Competitive Districts

While we have noted that partisan sorting in the population and the need to meet redistricting criteria that are in tension with competition will limit the number of closely matched districts that the commission can create, a saving grace is that commissioners will be hard-pressed to draw maps that deliver less competition than the ones that they replace. Indeed, the lack of competition was a prime complaint about the post-2000 plan. As we have noted, a conventional critique claimed that the plan made all incumbents safe, preventing partisan shifts in the legislature as a whole and accelerating partisan polarization in Sacramento. Evaluating all three interwoven claims reveals that long-term trends, along with aspects of the post-2000 plan, are to blame for the scarcity of competition over the past decade. If these trends continue to operate in California, the new lines drawn by the Citizens Redistricting Commission will help, although they will

not bring the radical changes in political competition and partisan polarization for which many of its proponents hope.

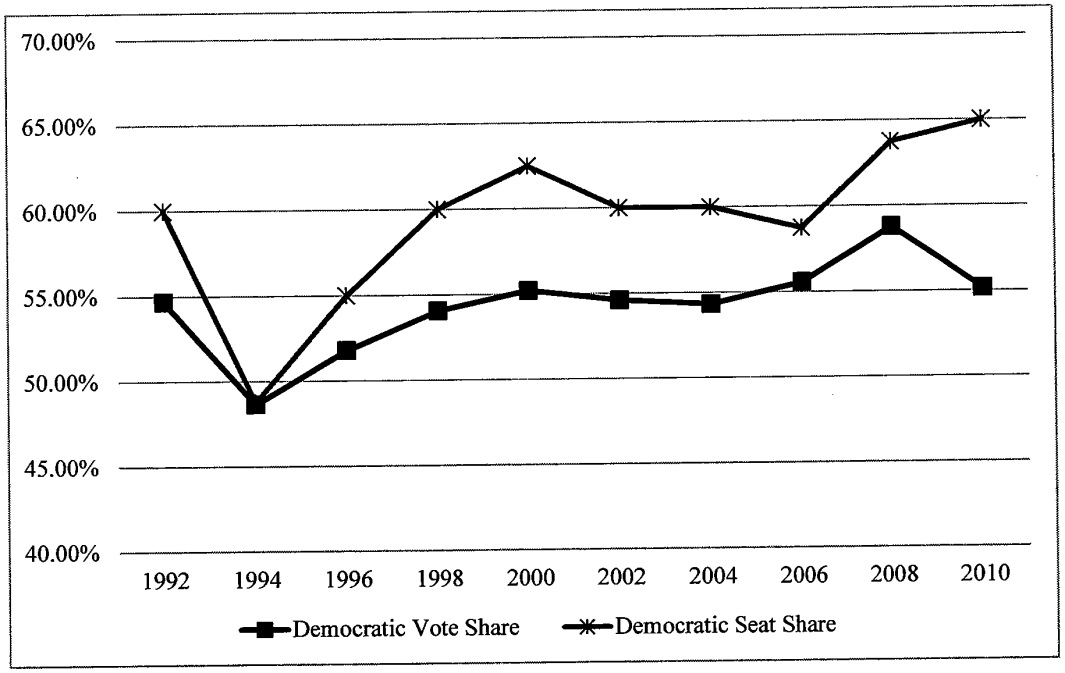
The complaint lodged against the post-2000 plans holds that political competition at the district level has radically declined in California, with new district lines to blame. Indeed, the number of closely competitive "swing" districts in California — as predicted by the Republican versus Democratic registration balance of their residents — has been historically small since 2002. One measure, built on the recognition that Democratic registrants traditionally turn out at lower rates than Republicans in California and exhibit less loyalty to their party, identifies a swing district as one where the Democratic registration advantage is zero to ten percentage points or the Republican advantage is zero to three points. By this measure, only five out of 80 assembly seats were competitive in the post-2000 plan.[38] The bipartisan gerrymander deserves much of the blame (or credit, depending on one's perspective)[39] for this lack of close competition, but so does the process of residential segregation that has occurred in recent decades in California. Working from California's current political geography, one study has drawn many simulated district lines to ask just how many close seats could be created in the state. Plans that balanced the desire to create competition with the sorts of legal constraints that bind redistricters generated, on average, 15 competitive assembly seats.[40] This shows that, while there is clear room for improvement in district-level competition, no plan can fill a chamber of the legislature with swing seats.

The second contention of the post-2000 critique is that, by creating few close districts, the reapportionment plan prevented significant partisan turnover among those elected in each district. Indeed, throughout most of the 2000s (at least, prior to the

passage of Proposition 11), the Democratic seat share in the state assembly was quite stable. By contrast, the 1990s had seen large fluctuations in the shares of seats in the legislature held by the two major parties, with the Republicans taking control of its lower house in 1994 and Democrats retaking more and more seats in the next two elections. While some argued that these political transitions were a sign that the post-1990 plan allowed for greater responsiveness to changes in voter sentiment, Figure 3 shows that seats shares shifted in the 1990s simply because voters in that decade were more likely to change their minds. It charts election-to-election changes in the share of assembly seats held by Democrats along with fluctuations in the share of the major party vote won by all Democratic assembly candidates, totaled across all districts.[41] When the Democratic vote share plunged by five percentage points during the "Gingrich Revolution" in 1994, the party's seat share declined along with it. Seat shares followed the Democrats' electoral uptick in the next two elections. The primary reason for why seat shares remained constant from 2002 to 2006, Figure 3 demonstrates, is that the party's aggregate vote share remained largely constant. When it rose with Obama's California landslide in 2008, so did the Democratic seat share in the assembly, indicating that the post-2000 redistricting plan was responsive to changes in voter sentiment. The only puzzle here is that in 2010, when Republican assembly candidates performed better than usual, Democrats actually gained one seat.[42] On the whole, though, the post-2000 plan shows nearly as much responsiveness to shifting voter preferences, when such shifts occurred, as the post-1990 plan. The new districts drawn by the commission, this analysis suggests, will only produce meaningful changes in seat share if the next decade features significant changes in voter preferences and behavior.

[Figure 3 About Here]

Figure 3. Democratic Party Seat and Vote Shares, 1992-2010



Source: California Secretary of State, *Statement of the Vote*, various editions; Census Bureau, *Statistical Abstract of the United States*, various editions.

Finally, the third charge made about the post-2000 plan is that safe districts freed legislators to act as ideologues, heightening partisan polarization. Indeed, a recent study linking roll call voting patterns and candidate surveys across the country finds that California's legislature holds the ignoble title of the nation's most polarized body.[43] Yet rising polarization is nothing new for California, and does not set it apart from the national trend evident in Congress. One analysis of roll call voting on the floor of the state assembly shows that polarization — the breadth of the ideological gap between the average Democratic and the average Republican in the legislature — has been widening consistently since the 1960s.[44] The new district lines in first in place for the 2002

election did not accelerate this trend. Instead, California's growing legislative polarization has largely tracked similar development in Congress over this period, and an analysis at the federal level finds no evidence that gerrymandering is to blame for that rise in polarization.[45] The broadening gap between the two parties is a result of larger societal and political forces other than redistricting, and it appears unlikely that any new set of district lines will be able to reverse this trend.

The People's Redistricting

Although Proposition 11 may not have a significant impact on the nature of the maps produced by reapportionment process, it has certainly transformed the way redistricting is done in California, opening up the process to public scrutiny and participation as never before. Unlike redistricting done by the legislature behind closed doors, the Citizens Redistricting Commission will deliberate in public and solicit significant public testimony. In anticipation of the process, the commission has divided the state into nine regions and has scheduled at least one public hearing in each region. In the month of April 2011 alone, the commission held 11 public hearings up and down the state.

The commission's work has also been supplemented by significant interest from the philanthropic community, which has provided large sums of money to mobilize historically underrepresented communities and help empower regular voters in the process. One of the most significant efforts, funded by the Irvine Foundation, has led to the creation of six regional redistricting assistance sites across the state, where technical staff will be on hand to provide individuals with access to census data, train them in the

use of redistricting process, and provide assistance in creating maps that can be presented to the commission. Presumably, this investment reflects the foundation's calculation that public meetings will matter this decade much more then they have in the past. Legislative committees did hold hearings and take public testimony in earlier decades, but it was never clear that this public input significantly shaped their final products. With the new commission has come a renewed hope that, when community groups testify that some area contains a "community of interest," when local officials plead the case for placing their cities or counties all within a single district, and when private citizens bring in the maps they have drawn themselves at the Fresno redistricting assistance site, they will be heard.[46]

Conclusion: How to Evaluate the Performance of the Commission

When the commission's work is complete and new sets of lines have been drawn by its members — or perhaps by court-appointed special masters or through an initiative — how will its performance be judged? We conclude by outlining three ways to evaluate the commission, beginning with how we think it *should* be judged, and then predicting how we think it in fact *will* be judged by distinct sets of observers.

Scholars generally evaluate new institutions like the commission by posing a counterfactual: how well did things work, compared to what would have happened under the old rules? How did the new process perform in the post-2010 cycle, compared to the redistricting outcomes that we could have expected if Proposition 11 had instead narrowly failed, leaving elected officials in charge of the initial phase of redistricting?

Given Democratic ambitions to pick up seats in a closely contested U.S. House of Representatives and to maximize the chances of obtaining two-thirds control of the state assembly and senate, legislative leaders and Gov. Brown would likely have reached quick agreement on a partisan, rather than a bipartisan, gerrymander. This plan would look wholly different from the post-2000 plan, with many more competitive seats designed to give Democrats the chance to conquer new political territory. Democrats would likely attempt to draw lines biased in favor of their party, but the extent of this bias — which would come from efficiently spreading out their party's voters while packing Republicans together — would be limited by the Voting Rights Act provisions that effectively mandate packing many Democrats into seats where minority voters can influence outcomes. Republicans, in a battle for their political lives and for the policy influence that comes from holding one-third of the legislature, would fight an all-out war. They would likely qualify referendums on the plans, as they did in 1982, although victory at the ballot box would be less assured. The process would be contentious and drawn out, but the final product would probably feature more competitive districts than in the 2000s and would reflect the desires of the many minority legislators who hold sway in Sacramento's Democratic caucuses.

Of course, others are free to make different predictions about what might happen if the commission had not been created. In our view, though, the approach of comparing the commission's product to this sort of "What if?" scenario is a reasonable way to judge its work. We do not expect that most observers will, in fact, take this approach. Proponents of the commission will most likely want to judge it against the outcome of the post-2000 process. Even if this year's process does not operate as smoothly as they hope,

their saving grace is that it will be hard to do worse than last decade's process in its transparency and the levels of competition that it produced. Yet the state's broader population may take a third approach to judging the commission. Voters who supported Proposition 11 — and who, if California political history tells us anything about the future, may be asked to decide yet again the high-stakes question of who should draw the state's lines — will likely judge the outcomes of redistricting under the commission against the promises made in the campaign for its creation. In this analysis, the great expectations that a diverse collection of reformers has tied to the Citizens Redistricting Commission may prove its greatest burden.

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[1] Proposition 11, which passed by a 50.9%-49.1% margin in the November 2008 election, created the Citizens Redistricting Commission and gave it the authority to redraw lines for state senate, assembly, and board of equalization districts. California Secretary of State, *November 4, 2008 General Election — Statement of Vote* (Sacramento, CA, 2008). This proposition did not, however, transfer to the commission authority over drawing the lines for congressional districts within California, leaving that power in the hands of state legislators. The presumable rationale behind this limited approach was that since many other states allowed their legislatures to redraw congressional districts, taking this power away from the Democrats who controlled California's legislature might have a partisan impact that was not balanced by parallel reforms in Republican-controlled states.

[2] Proposition 20, which passed by a 61.3%-38.7% margin in the November 2010 election, added the authority to redraw congressional district lines to the newly created commission's mandate. On the same ballot, Proposition 27, which would have eliminated the commission before it ever met, was defeated by a 41.5%-59.5% margin.

California Secretary of State, *November 2, 2010 General Election — Statement of Vote* (Sacramento, CA, 2010).

[3] J. Morgan Kousser, "Reapportionment Wars: Party, Race, and Redistricting in California, 1971–1992," In *Race and Redistricting in the* 1990s, edited by Bernard Groffman, pp. 134-190. (New York, NY: Agathon Press, 1998); J. Morgan Kousser, "Redistricting: California, 1971 -2001," in *Governing California: Politics, Government and Public Policy in the Golden State,* edited by Gerald C. Lubenow and Bruce E. Cain, pp. 137-155 (Berkeley, CA: Institute of Governmental Studies Press, 1997); T. Anthony Quinn, "California," In *Reapportionment Politics: The History of Redistricting in the 50 States,* edited by Leory Hardy, Alan Heslop, and Stuart Anderson, pp. 53-57 (Beverly Hills, CA: Sage Publications, 1981); Richard Santillan, *California Reapportionment and the Chicano Community: An Historical Overview, 1960*–1980 (Claremont, CA: Rose Institute of State and Local Government, 1980); David Lester Wilkening, *Political History of California Legislative Reapportionment, 1849–1977*, Master's thesis, California State University, Sacramento, 1997.

[4] The California State Conference of the NAACP came out in support of Proposition 11 while other major Latino and black organizations opposed it. The measure, however, received favorable endorsements from several prominent minority leaders.

[5] Lou Cannon, "California Dreaming," *StateNet Capitol Journal* (Vol. XVI, No. 22, July 21, 2008).

[6] For a discussion of the difference between partisan and pro-incumbent gerrymanders, see Bruce E. Cain, "Assessing the Partisan Effects of Redistricting." *American Political Science Review* (Vol. 79, No. 2, June 1985), pp. 320-333.

[7] Elizabeth Garrett, "Hybrid Democracy," *George Washington Law Journal* (Vol. 72, No. 5-6, Aug. 2005), 1096-1130; Elisabeth R. Gerber, "Legislative Response to the Threat of Popular Initiatives," *American Journal of Political Science* (Vol. 40, No. 1, Feb. 1996), pp. 99-128.

[8] Gary W. Cox and Jonathan N. Katz, *Elbridge Gerry's Salamander: The Electoral Consequences of the Reapportionment Revolution* (Cambridge: Cambridge University Press, 2002).

[9] Kousser, "Redistricting: California, 1971 -2001"; J. Morgan Kousser, "Estimating the Partisan Consequences of Redistricting Plans—Simply," *Legislative Studies Quarterly* (Vol. 21, No. 4, Nov. 2006), pp. 521-541.

[10] The Jerry Brown who won the 2010 gubernatorial election was the same Jerry Brown who finished his second term as governor in 1982. Because term limits for the governor's office were not instituted until 1990, Brown was eligible to run again in 2010.

[11] Kousser, "Redistricting: California, 1971 -2001."

[12] Even after this late-1982 maneuver, California's redistricting wars of the 1980s were not over. Republican assemblyman and winery owner Don Sebastiani funded an initiative to draw new plans in 1983, but the measure was thrown out by the state supreme court on the grounds that it violated the state constitution's requirement that redistricting occur once a decade. In the November 1984 election, Gov. Deukmejian pushed another initiative to create an independent commission, which was defeated, as was Proposition 119 in 1990. Kousser, "Redistricting: California, 1971 -2001."

[13] Carl Ingram, "Democrats Have Luck of Draw in Redistricting," *Los Angeles Times*, Aug. 19, 2001, p. B7.

[14] Carl Ingram, "Davis Oks Redistricting that Keeps Status Quo," *Los Angeles Times*, Sept. 28, 2001, B2. Despite its displeasure with the 2000 plan, MALDEF opposed Proposition 11.

[15] Carl Ingram, "Plan to Redraw Districts Passes," *Los Angeles Times*, Sept. 14, 2001, p. B6.

[16] Bruce E. Cain and Thad Kousser, *Adapting to Term Limits: Recent Experiences and New Directions* (San Francisco, CA: Public Policy Institute of California, 2004).

[17] Kenneth Reich, "Latino Group Sues Over Redistricting," *Los Angeles Times*, Oct. 2, 2001, p. B1.

[18] Carl Ingram, "Revised Districts Hinder Minorities," *Los Angeles Times*, Sept. 6, 2011, p. B8.

[19] Kousser, "Reapportionment Wars: Party, Race, and Redistricting in California, 1971–1992"; Kousser, "Redistricting: California, 1971 -2001."

[20] As we note in footnote 2, the commission's jurisdiction was expanded to include congressional districts in the November 2010 election.

[21] California Secretary of State, *Official Voter Information Guide: California General Election Tuesday, November 4, 2008.*

[22] California Secretary of State, *Voter Information Guide.*

[23] *San Diego Union-Tribune*, "Redistricting Fix Would Spur Other Reforms," Sept. 11, 2008, http://www.signonsandiego.com/uniontrib/20080911/news_lz1ed11top.html.

[24] Jim Sanders, "Prop. 11 Gets GOP Money Push," *Sacramento Bee* Nov. 3, 2008, p. A3.

[25] California Secretary of State, *Voter Information Guide.*

[26] Tony Quinn, "Proposition 11— What Will It Do?" *California Journal of Politics & Policy* (Vol. 1, Issue 1, 2009).

[27] Lisa Vorderbrueggen, "Lawyer's Connections Put Contract on Hold," *San Jose Mercury News*, March 29, 2011; Tony Quinn, "Inspector Clouseau Would Feel Right at Home at the Redistricting Commission," *Capital Weekly*, April 7, 2011.

[28] Kousser, "Reapportionment Wars: Party, Race, and Redistricting in California, 1971–1992."

[29] Tony Quinn, "Corrupting the Redistricting Commission," *Fox & Hounds Daily*, March 22, 2011, http://foxandhoundsdaily.com/blog/tony-quinn/8774-corrupting-redistricting-commission.

[30] Dan Walters, "Redistricting Panel Shows True Colors of Ideology," *Sacramento Bee*, March 25, 2011.

[31] Bruce E. Cain, Karin Mac Donald, Iris Hui, *Competition and Redistricting in California: Lesson for Reform* (Berkeley, CA: Institute of Governmental Studies, 2006).

[32] One provision required in the commission's design that will likely lead to a sharp increase in competitiveness, at least in the short run, requires that commissions may not consider the addresses of incumbent officeholders when they draw lines. In crowded urban areas, this will inevitably lead some of the new districts to contain multiple incumbents and leave others as open seats with no prior officeholder in 2012. Because open seats typically lead to closer races, this may cause political competition to spike in 2012, but decline again in 2014 and future years as each new district gains a new incumbent.

[33] Kevin Hill, "Does the Creation of Majority Black Districts Aid Republicans?" *Journal of Politics* (Vol. 57, No. 2, May 1995), pp. 384-401.

[34] Vladimir Kogan, The Politics of San Diego Redistricting," *Voice of San Diego*, Oct. 11, 2011, http://www.voiceofsandiego.org/peoplespost/vkogan/article_82e22f56-d3f1-11df-ae1d-0019bb2963f4.html.

[35] Aside from purely demographic differences, other evidence pointed to the fact that the applicants were not a random sample of the California electorate. For example, one panel on California politics held at the 2010 Western Political Association Meeting included two political science professors and one political science graduate student who had applied to serve on the commission. Had the applicants comprised a random sample of the commission, the probability of three applicants turning up in the sample place at the same time would be virtually zero. Many candidates were unusual in other ways. One, for example, was a member of the International Cat Association and her letters of recommendations highlighted her commitment to representing the interests of cat owners. Vladimir Kogan, "How We Draw Our Lines," *Voice of San Diego*, April 20, 2010.

[36] Dan Walters, "Redistricting Pool Mostly Affluent White Male Democrats," *Sacramento Bee*, June 22, 2010, http://blogs.sacbee.com/capitolalertlatest/2010/06/redistricting-pool-mostly-affl.html.

[37] Jorge Chapa, "Estimating Citizen Voting Age Population by Race/Ethnicity for 2010 Redistricting," working paper.

[38] Bruce E. Cain, Karin Mac Donald, Iris Hui, "Sorting or Self-Sorting: Competition and Redistricting in California," in *New Political Geography of California,* edited by

Frederick Douzet, Thad Kousser, and Kenneth P. Miller (Berkeley, CA: Institute of Governmental Studies Press, 2008)

[39] Justin Buchler, "Competition, Representation and Redistricting: The Case Against Competitive Congressional Districts," *Journal of Theoretical Politics* (Vol. 17, No. 4, Oct. 2005), pp. 431-463; David Butler and Bruce E. Cain, *Congressional Redistricting: Comparative and Theoretical Perspectives* (New York: Macmillan, 1992).

[40] Cain, Mac Donald, and Hui, "Sorting or Self-Sorting: Competition and Redistricting in California."

[41] In nearly every year in Figure 3, Democratic seat shares exceed Democratic vote shares. This is due to the fact the seats held by Democratic legislators typically contain far fewer voters than the seats won by Republicans (but equal numbers of residents, in keeping with the one person, one vote doctrine). Consider, for instance, the 46th assembly district, located in East LA, and represented by Democrat John Perez. It had a total of 60,736 voters casting ballots in the 2008 General Election. By contrast, the 2nd assembly district, represented by Republican Jim Neilsen, saw 180,659 voters turn out in the same election. Although not every Republican district has three times as many voters in it as every Democratic district, there is a clear difference in turnout (driven both by eligibility to vote and the factors that predict the turnout of those who are eligible to vote) across these two sorts of districts. This in turn means that Democrats win seats by smaller absolute margins, making their seat share exceed their overall vote share simply because their constituencies turn out at lower rates.

[42] A possible explanation is that, because the total vote share depends in part upon how many districts (many of them hopeless) each major party actually contests, the

expectation of a Republican landslide in 2010 may have led fewer Democrats to contest in Republican strongholds and more Republicans to run in Democratic-dominated areas, skewing the aggregate vote share measure without shifting the balance of votes in closely contested districts.

[43] Boris Shor, Christopher Berry, and Nolan McCarty, "A Bridge to Somewhere: Mapping State and Congressional Ideology on a Cross-Institutional Common Space," *Legislative Studies Quarterly* (Vol 35, No. 3, Aug. 2010), pp. 417-448.

[44] Seth E. Masket, "It Takes an Outsider: Extralegislative Organization and Partisanship in the California Assembly, 1849–2006," *American Journal of Political Science* (Vol. 51, No. 3, July 2007), pp. 482-497.

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