

## Making a Case for Two Paths Forward in Light of *Gill v. Whitford*

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### ABSTRACT

In light of the Supreme Court's ruling in *Gill v. Whitford* (2018), we propose two paths forward for establishing manageable standards to identify partisan gerrymanders. One is aimed most particularly at exclusionary gerrymanders and follows the Court's directive to demonstrate personal and district-specific harms to representational rights. The second challenges mapmakers in the first instance and courts, if needed later, to recognize that entrenchment gerrymanders offend not just representational rights but also the right for all votes to carry the same weight. We put our proposals to a series of tests through applications to post-2010 suspected gerrymanders of congressional districts in Maryland and Ohio along with applications to Massachusetts and Illinois to show that the approaches hold safe district plans that are not gerrymanders.

**Keywords:** gerrymandering, vote dilution, representational rights, voting rights

### INTRODUCTION

JUSTICE WHITE, WRITING FOR THE COURT majority in *Bandemer*, noted that the legitimate implications of the fair and effective representation recognized in *Reynolds v. Sims* (1964) are grounded in system-wide results associated with preferences “for a level of parity between votes and representation sufficient to ensure that significant minority voices are heard and, that majorities are not consigned to minority status . . .” (*Davis v. Bandemer* 1986, 125). Thirty-two years later, the Supreme Court's opinion in *Gill v. Whitford* (2018) retreated to particularized and individualized first steps. To mount a challenge to unconstitutional partisan gerrymandering requires a threshold showing of harm that “affect[s] the plaintiff in a personal and

individual way” and is “district specific” (*Gill v. Whitford* 2018, 13 and 14).

Because gerrymandering maneuvers involve interrelated machinations—e.g., packing one set of partisans so that their co-partisans elsewhere can be cracked—gerrymandering's critics face a challenge to cross the *Whitford* threshold and proceed to purge gerrymandering's systemic harms of exclusion and entrenched counter-majoritarianism identified by Justice White in *Bandemer*. To meet the challenge, we offer two paths forward.

The first path is consistent with the *Whitford* Court's holding requiring a district-specific analysis focused on individual voters. This approach is broadly applicable to exclusionary and entrenchment gerrymanders, but, we surmise, is best reserved for allegations of district-specific exclusionary gerrymanders. The reason for such a reservation is that exclusion without entrenchment almost always is a matter involving one or two districts. For that reason the required district-specific analysis can be narrowly focused and, if needed, a remedy can be narrowly tailored.

Our second path approaches the issue with an alternative legal theory not heretofore considered by courts. Its focus is on entrenchment forms of

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gerrymandering. That is because, while all forms of gerrymandering, exclusionary and entrenchment, dilute representational rights, entrenchment gerrymanders also have a demonstrably additional dilutive effect on the right to cast an equally weighted vote. That is, entrenchment gerrymanders not only offend by distorting the parity between votes and representation, they also effectively assign different weights to voters depending on the party they support. We know entrenchment has this vote-weight effect because it entails violating majority rule and that necessarily means votes of one set of partisans carry less weight than their opposition: adhering to majority rule is an unmistakable equality principle of democratic governance (May 1954; Dahl 1989, 139; McGann 2006, 60–85). Moreover, entrenchment gerrymanders usually involve not one or a few districts but a large number, making the avoidance of gerrymandered entrenchment more easily communicated to and more easily managed by map-makers in the first instance and, if called upon, by courts after enactment.

### GERRYMANDER'S TWO FORMS OF VOTE DILUTION

Because it is possible to view all gerrymandering as burdening representational rights but to view entrenchment forms of gerrymandering as burdening both representational and equal vote weight rights, we begin by drawing the distinction.

#### *Dilution of representational rights*

The plaintiffs in *Whitford* relied on evidence of Democrat versus Republican relative counts of wasted votes. When Democratic voters cast considerably more wasted votes than Republicans, as was shown to have occurred in Wisconsin's Assembly districts, the evidence is claimed to reveal dilution of Democratic votes. Plaintiffs maintained and the Court accepted that wasting votes is achieved through drawing district lines that pack and/or crack voters in particular districts. Districts are packed when one party's supporters are concentrated in just a few districts, each of which they win by an overwhelming margin. Packing wastes votes by piling up votes far in excess of what it takes to win, votes that could be used more efficiently in other districts. Cracking, on the other

hand, divides a party's supporters among several districts so that they are unlikely to win a majority in any one of them. Cracking wastes votes by virtue of the simple fact the disfavored party's votes in the cracked districts are going to losing candidates and thus carry no direct electoral value in gaining representation.

One harm from packing and cracking is a diminished opportunity to elect one's candidate of choice, a representational right. That right is possessed by individuals, the *Whitford* Court held unanimously, and therefore to have standing a plaintiff must show that his or her representational right has been burdened by assignment to a packed or cracked district—"to prove concrete and particularized injuries using evidence ... that would tend to demonstrate a burden on their individual votes" (*Gill v. Whitford* 2018, 21). Such a showing can be accomplished, the *Whitford* majority says implicitly and Justice Kagan says expressly, by comparing an individual's district circumstance to circumstances he or she would be in under fairly drawn alternative maps (*Gill v. Whitford* 2018, 20; Justice Kagan concurring at 4).<sup>1</sup>

We propose to identify packing and cracking, or their absence, for any districting plan by first creating a large set of computer-generated fairly drawn plans. Next, following Mattingly and his colleagues (see, e.g., Bangia et al. ND), we rank order one or the other party's observed district two-party vote percentages from low to high and compare them to the rank order of lowest to highest party percentages in each of the computer plans. A trace along the expected district percentages makes it visually

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<sup>1</sup>This sort of comparison is similar to a required showing of prong 1 of the *Gingles* three-prong pre-conditions for racial vote dilution. Justice Brennan explained the prong 1 requirement this way: "The reason that a minority group [alleging a districting plan is racially dilutive] must show, as a threshold matter, that it is sufficiently large and geographically compact to constitute a majority in a single-member district is this: Unless minority voters possess the potential to elect representatives in the absence of the challenged structure or practice, they cannot claim to have been injured by that structure or practice" (*Thornburg v. Gingles* 1986, 50 fn. 17). The logic of *Whitford* is similar. Would a set of partisan voters have the potential to elect a representative where the challenged districting plan replaced any of very many plans drawn without a focus on advantaging the opposition party? It is proper to keep in mind, however, that in *Gingles* and most other allegations of racial vote dilution, a predominant reliance on race is itself unacceptable and the matter at issue concerns an insular political minority seeking inclusion in the representational process.

and statistically obvious which, if any, observed district percentage is substantially out of line with fair expectations. Further probing can identify precincts in which, say, Republican voters currently reside in a needlessly cracked district and otherwise would have been in a majority Republican or swing district. Voters in such precincts have a diminished opportunity to elect a candidate of their choice, contrary to their individual right to fair and effective representation. The same probing can also identify precincts in which one group of partisans is excessively packed. Their votes could, of course, be used more effectively in competitive districts. However, it is not proper to say the packed partisans have a diminished opportunity to elect candidates of their choice inasmuch as their preferred partisan candidate won in the packed district. The harm is actually foisted upon the packed partisans' co-partisans in districts where the packed partisans' votes could have been useful in overcoming cracking.

#### *Vote weight dilution*

While the district-specific approach just described is applicable to entrenchment gerrymanders, when the issue is entrenchment, a legal theory based on an equal vote weight is both more probative and more easily managed. One needs to begin with the simple arithmetic comparison of a party's two-party median vote percentage to its two-party average vote percentage. If there is no difference that persistently favors one party, the check for an entrenchment gerrymander is closed—there is no entrenchment. As Richard Niemi and John Deegan remarked long ago, a symmetrical vote distribution, which has the median equal to the mean, is a necessary and sufficient condition for an unbiased plan that does not violate majority rule (Niemi and Deegan 1979, 1308). It is easy to see and appreciate why. If a symmetrical vote distribution is centered at 50.1 or above, then half or more of the districts belong to the majority party just as majority rule requires. It follows that any district plan that persistently violates majority rule in favor of one party has to have been constructed on the basis of an asymmetrical vote distribution.

One might object that a concern for violating majority rule is misplaced as either a legal or practical matter. Concurring in *Veith*, Justice Kennedy offered this thought about the applicability of a majority rule principle (*Vieth v. Jubelirer* 2004, 308).

The fairness principle appellants propose is that a majority of voters in the Commonwealth should be able to elect a majority of the Commonwealth's congressional delegation. There is no authority for this precept. Even if the novelty of the proposed principle were accompanied by a convincing rationale for its adoption, there is no obvious way to draw a satisfactory standard from it for measuring an alleged burden on representational rights.

As an alleged burden on representational rights and as it pertains to a state's congressional delegation, Justice Kennedy's point is arguably well taken (but see Justice Breyer dissenting, *Vieth v. Jubelirer* 2004, 361), since congressional delegations have no particular decision-making authority of their own. However, when viewed from the standpoint of whether violating majority rule signals that all votes do not carry the same weight, his observation about representational rights is beside the point. The injury is found in the fact that the districting plan does not provide equal vote weight.<sup>2</sup>

As a practical matter, Justice Scalia asks this sensible question, with a doubtful intention: "How is a party's majority to be established?" (*Veith v. Jubelirer* 2004, 288). Daniel Lowenstein and Jonathan Steinberg observe, "Political parties [seeking legislative seats] do not compete for the highest statewide vote totals or the highest mean district vote percentage: They compete for specific seats." (Lowenstein and Steinberg 1985, 59–60). It's also true, as Lowenstein and Steinberg further observe, depending on how the lines are drawn candidates change, campaign money flows or dries up, and campaign organizations operate more or less vigorously (Lowenstein and Steinberg 1985, 59–60). All of this tells us to

<sup>2</sup>Notice, importantly, while commentators have rolled the equal weight vote standard into a general category of symmetry/asymmetry analyses (e.g., Gerken et al. 2017), the equal vote weight standard focuses on asymmetrical weighting of partisan voters. The other symmetry standards with which it is categorized focus on the equal/unequal treatment of parties. Gerken and her colleagues define the symmetry of interest as "a set of districts are symmetrical when reversing the outcome of the election—flipping each party's average district vote totals—would also reverse the number of seats won" (Gerken et al. 2017, 13). Bernard Grofman and Keith Gaddie explain that the symmetry standard of interest to them asks "whether the map treats similarly situated parties equally: whether both parties receive *like opportunity* to capture a given number of legislative seats if they receive a comparable share of the statewide vote" (Grofman and Gaddie 2017, 12, emphasis in original). The two foci are rooted in different theoretical ground.

check majority status violations by relying on statewide contests (just as politically minded mapmakers do when drawing district lines). District line placements precede decisions about who is going to compete in various districts and with what potential resources those competitions will be supported. That makes the vote totals from legislative elections under an adopted plan a dubious indicator of both the partisan disposition of the districts, as such, and of the jurisdiction-wide majority status. Statewide elected offices are not subject to the same within-district competition incentives as the district-specific races and thus provide a cleaner and clearer reading of a possible gerrymander effect.

### NECESSARY AND SUFFICIENT CONDITIONS FOR A GERRYMANDER

When the interest of a mapmaker or court is to determine whether district line placements constitute a gerrymander, the question to answer requires a causal inquiry. To answer any causal question in a case-specific application, as courts are often called upon to do, identifying a set of necessary and sufficient conditions proves tremendously helpful. Absent any one necessary condition, we know the suspected causal force is not the cause. When all necessary conditions are present and when considered in combination they are sufficient, we have the knowledge to conclude that the suspected cause is the actual cause.<sup>3</sup>

A first necessary condition for gerrymandering is predictable partisan voting patterns. Absent such predictability there can be no way to say whether a district can be relied on to vote in support of one party or the other. Thereafter, deciding whether one district or a districting plan as a whole constitutes gerrymandering requires inquiries into multilayered necessary conditions applied to case-specific circumstances.

In line with the Court's ruling in *Whitford*, our first path asked whether the enacted set of districts reveal cracking. This could arise either from excessively packing the disfavored partisans so that they are deprived of having their votes counted in the cracked districts or by unpacking favored partisans so their votes are more efficiently distributed in districts they would otherwise lose. That is not all. We also need to check whether the cracked districts are effectively depriving the disfavored partisans of a realistic opportunity to elect candidates of their

choice. The answer to this question can be evaluated by looking at a variety of statewide elections, the results of which are aggregated to boundaries of the proposed/enacted districts, and asking whether, as the two-party vote swings more and less in favor of the cracked partisans' party, the voters in the cracked districts actually have no realistic chance of winning. If a legislative election has already occurred in a cracked district, the result also has to be checked to see whether, despite the minimal opportunity as read from the district's partisan disposition, some set of resources were drawn on that enabled a candidate from the disfavored party to overcome the seemingly minimal opportunity.

Inferring the existence of entrenchment gerrymanders requires reasoning through a similar number of layers. We look first for whether the choice of line placements created electoral bias and thereby potentially caused harm in the form of violating majority rule. Electoral bias is a two-element concept—turnout bias and gerrymandering bias. To wit,

$$\begin{aligned} \text{Total electoral bias} &= \text{Turnout bias} \\ &+ \text{Gerrymandering bias.} \end{aligned}$$

Turnout bias is the difference between a party's statewide vote percentage, which weights each voter equally, and the mean district vote percentage, which weights each district equally (Edgeworth 1898, 536–7; Butler 1947, 287; Erikson 1972, 1236; Gudgin and Taylor 1979, 55–9; Grofman et al. 1997, 461–4; McDonald and Best 2015, 318)—that is,

$$\begin{aligned} \text{Turnout bias} &= \text{Mean district vote \%} \\ &- \text{Statewide vote \%}, \end{aligned}$$

Gerrymandering bias (asymmetry bias) is the difference between a party's median district vote percentage, which marks the vote percentage received in a district when reaching the threshold of majority control of a delegation, and the mean district vote percentage, which, assuming equal turnout, is the level of vote support for a party (Edgeworth 1898,

<sup>3</sup>One area of voting rights law where this form of inquiry has worked effectively as an effects test is the *Gingles* three-prong necessary pre-conditions of racial vote dilution, when considered in the context of the totality of circumstances. For partisan gerrymandering it is also necessary to demonstrate intention to dilute (*Davis v. Bandemer* 1986). Evaluation of intent requires a case-specific local appraisal.

534–6; Butler 1951, 330; Erikson 1972, 1237; McDonald and Best 2015; Wang 2016)—that is,

$$\text{Gerrymandering bias} = \text{Median district vote \%} \\ - \text{Mean district vote \%}.^4$$

Distinguishing between turnout and gerrymandering bias is but one inferential layer for investigating packing gerrymanders. The bias could be natural or chosen, natural in the sense that a median versus mean district percentage difference is attributable to residential patterns, or chosen in the sense that a median versus mean difference goes beyond levels attributable to residential patterns. We are interested in choice as a key element in the causal flow, in the sense that the harm would have been reasonably easy to avoid.

A median-mean difference is a leading indicator; its persistence above expectations from residential patterns gives rise to the likelihood we are looking at a chosen structural entrenchment form of gerrymandering. In addition, the choice of a structural gerrymander must show observable harm, not just potential harm. This requires observing two additional facts. We need to look to see whether the disfavored partisans have their majority vote persistently turned into a minority of districts carried. If that does not occur more often than not, then the bias operating against them cannot be deemed to be structural. Finally, because the offices of most interest are those elected through the districts, not the statewide offices used to evaluate the majoritarian versus anti-majoritarian partisan disposition of the districting plan, we need to check whether the otherwise disfavored party held resources that, despite their disadvantage, allowed them to overcome it.

In enumerated summary, the inferential layers work through answers to these two series of questions. If the answer is *no* to any question asked in sequence, then we know there is no harmful gerrymander. If all answers are *yes*, then we know that the district plan has the effect of violating some voters' representational and/or voting rights.

District-specific analysis:

1. Are voting patterns predictably partisan?
2. Is any district cracked beyond expectations from a set of partisan-blind, computer-generated district plans?
3. Are minority party opportunities to win a cracked district minimal?

4. Do the facts of the House elections with respect to the identified district(s) show minimal likelihood of the minority party prevailing?

Equal vote weight analysis:

1. Are voting patterns predictably partisan?
2. Does the median versus mean district percentage difference show a gerrymandering bias running persistently against one set of partisan voters?
3. Does the gerrymandering bias go beyond expected median-mean due to residential patterns?
4. Does the bias violate majority rule more often than not under reasonably competitive electoral circumstances, without compensation from turnout bias?
5. Do the facts of the House elections show a similar gerrymandering bias with the disadvantaged party holding a minority of seats in a delegation?

## APPLICATIONS

To evaluate our two approaches, we apply them to two states with medium-size congressional delegations, Massachusetts and Maryland, and two states with relatively large delegations, Ohio and Illinois. The point of the four state demonstrations is to show that the approaches are capable of providing a convincing determination of and distinction between congressional district plans that are (Maryland and Ohio) and are not (Massachusetts and Illinois) gerrymanders.<sup>5</sup>

<sup>4</sup>The median is the midpoint score of a set of numbers arranged in order from low to high; the mean is simply the average score. Importantly, as it relates to redistricting partisan politics, having control over the median means having control over 50 percent or more of the situation. Since the mean district vote percentage for districts with equal turnout indicates whether a party has received a majority or minority of the vote, democratic theory implies that the median district two-party vote percentage should offer a consistent reading of the majority versus minority status for districts won.

<sup>5</sup>As we mention in footnote 3, case-specific applications of partisan gerrymandering require an intent inquiry. Our applications speak directly to gerrymandering effects. Nevertheless, it is worth noting that the use of the computer-generated partisan-blind maps provides some degree of analytical leverage on intent. If a clear, convincing, and consensus effects standard were to be adopted, an intent inquiry would be essentially self-executing, much as inquiries into malapportioned congressional districts are essentially self-executing absent a compelling state justification.

The data we rely on come from two sources: statewide election returns compiled and disaggregated to voter tabulation districts (VTDs) by Stephen Wolf at *Daily Kos* (Wolf 2014), and shapefiles provided by the U.S. Census Bureau.<sup>6</sup> Since U.S. elections at all levels are administered by county or local governments, collecting statewide data is often challenging. *Daily Kos* publishes statewide election results by congressional and legislative district built from estimates at the level of VTDs. Wolf uses county-level returns to assign votes to VTDs according to votes cast in the VTD in the 2008 presidential election and the proportion of the county's population living in a VTD. The disaggregation of Democratic votes to VTDs can be characterized by the following equation.

$$d_i^t = \delta_i D^t,$$

where  $d_i^t$  is the estimated number of votes cast for a Democratic candidate in VTD  $i$  in election  $t$ ,  $\delta_i$  is the proportion of a county's votes cast in VTD  $i$  for Barack Obama in 2008, and  $D^t$  is the county-level count of Democratic votes for election  $t$ .

We have tested the accuracy of Wolf's data in Wisconsin, North Carolina, and Florida where we have state-provided official tallies of VTD-level votes. Correlations of the *Daily Kos* numbers and official vote totals were high across all races covered by the data, ranging from 0.87 to 0.97.

The Census Bureau is charged with collecting maps of each state's VTDs and releases the information as shapefiles. We use these VTD shapefiles to generate 10,000 alternative congressional maps for each state using a graph partitioning process proposed by Daniel Magleby and Daniel Mosesson (Magleby and Mosesson 2018). Each map has the requisite number of contiguous districts with a population variance of plus or minus one percent. The process itself is blind to partisan considerations; the computer algorithm considers only population and contiguity of VTDs. After the maps have been generated, we merge VTD voting data from *Daily Kos* to calculate candidate performance in these alternative congressional districts in each statewide election.

For reasons already explained as matters of law and practicality, we rely on statewide elections as the only feasible data for responding to our necessary condition in response to the questions numbered 2 above (i.e., is any district cracked beyond expectations, and does the median minus mean dis-

trict vote percentage show a bias running consistently in one direction). Here, as two matters of unavoidable pragmatism, we can add these points. There is no sensible way to rearrange the legislative votes to evaluate the extent, if any, that residential patterns are responsible for partisan consequences. Second, a manageable standard should be available to mapmaking decision makers before a district plan is enacted, and there is no sensible way to compile data for pre-enactment evaluative purposes by rearranging legislative votes from prior legislative elections.

#### *Checking for district-specific dilution*

As remarked, for demonstration purposes we put four states under scrutiny—viz., Maryland, Massachusetts, Ohio, and Illinois.

In early fall 2018, Maryland congressional districts remain before a federal court following the Supreme Court's denial of plaintiffs' request for a preliminary injunction (*Benisek v. Lamone* 2018). Evidence from Goedert (2014) as well as from Chen and Cottrell (2016) indicates the plaintiffs' gerrymandering allegation is credible; evidence from Wang's tests suggests it probably is not (Wang 2016b).

In Massachusetts, no Republican has won a congressional seat since 1994. That makes Massachusetts the only state with three or more districts where the minority party has been unable to carry a single congressional seat during this 20-plus year period. Goedert's post-2010 analysis indicates this could be the result of a pro-Democratic gerrymander (Goedert 2014; 2015); Chen and Cottrell see no evidence of a Massachusetts gerrymander (Chen and Cottrell 2016); Wang's three gerrymandering tests are inconclusive (Wang n.d.).<sup>7</sup>

<sup>6</sup>Voter tabulation districts (VTDs) roughly correspond to state-designated voting precincts; however, the correspondence to actual voting precincts is not precise. In practice, states reprecinct more frequently than they redistrict. States share their precinct boundaries with the Census Bureau once every ten years, so the VTDs we use to develop our neutral maps are almost certainly out of date by the 2012 and 2014 elections, requiring us to rely on estimated vote totals by VTD. On the other hand, the Census Bureau does ensure that the population reported for VTDs is accurate.

<sup>7</sup>Wang's analysis for Massachusetts appears on his Princeton Gerrymandering Project website at <<http://gerrymander.princeton.edu/#explore-us>>.

Analyses by both Goedert (2014) and Chen and Cottrell (2016) indicate Ohio's congressional map is drawn to favor Republicans, and a month before the Supreme Court's decision in *Whitford*, the ACLU filed suit to replace the Ohio map before the 2020 election (Thomas-Lundborg 2018).

In Illinois, a few weeks before the legislature passed and the governor signed the Illinois congressional redistricting plan, a writer for the *Christian Science Monitor* labelled it "a radical Illinois gerrymander" (Greenbaum 2011). After enactment, and in response to a challenge in federal court by Republicans, one court called the plan "a blatant political move to increase the number of Democratic congressional seats," and another said it was "enacted in large part to give Democrats a partisan advantage" (quoted in *Chicago Tribune* 2011). An analysis by Goedert (2014, 4) agrees; another by Chen and Cottrell (2016, 338) does not.

Maryland. We begin with Maryland. There, as is true for all four states, partisan predictability is clearly present.<sup>8</sup> We have data on nine statewide elections between 2006 and 2013; the 40 pairwise correlations at the congressional district level range from a low of .956 to a high of .993. To visualize what this means, Figure 1, using the state's congressional districts as the units, displays the relationship between the Democratic percent of the two-party vote in each of eight statewide elections (the vertical axis) against the Democratic percent of the two-party vote in the 2010 governor election (the horizontal axis in all eight plots). The high degree of partisan predictability is clear to see.

The 2010 governor's race pitted the Democratic incumbent, Martin O'Malley against Republican Robert Ehrlich. O'Malley won 56–42 percent, while carrying seven of the eight congressional districts. Table 1 reports the Democratic two-party percentage for the 2010 governor's race arranged by rank order of districts from low to high. Alongside is the expected percentage from 10,000 computer-generated plans also in rank order from low to high. While O'Malley lost District 1 with just 33.9 percent of the two-party vote, his low performance in that district is due in large measure to Republicans having been packed. Of the 10,000 partisan-blind maps, only 76 (less than one percent) could reasonably be expected to produce a percentage that low in a district drawn in a partisan-blind process. At the high end of the ranking, it is apparent

that districts 5, 7, and 4 unpacked Democratic voters, presumably so they could be used more effectively in more competitive districts. By themselves, none of the four districts (1, 4, 5, and 7) impose a burden on representational rights. That burden is found in districts 6 and 2. In District 6 O'Malley received his second lowest vote total, 52.2, but that is more than 10 points higher than would be expected from the second least Democratic-supporting district culled from a partisan-blind process. A similar 10-point difference also occurs in District 2. Moreover, not only are there ten point differences, the likelihood of drawing a second and third least supportive district in the O'Malley race is below one-half of one percent. The evidence of a cracking gerrymander of two Maryland districts is clear.

Massachusetts. In Table 2 the same form of analysis is applied to the 2010 Massachusetts state auditor election between Democrat Susan Bump and Republican Mary Connaughton Baker. Democrat Bump received 51.1 percent of the two-party vote but carried only three of nine congressional districts.<sup>9</sup> Without going any farther, the contra-majoritarian result standing alone is definite evidence there is no pro-Democratic gerrymander, at least across the commonwealth as a whole. The numbers in the table help to explain what underlies the contra-majoritarian result. District number 7, the most strongly Democratic of the nine districts, is more than nine points more Democratic than would likely be produced by a partisan-blind process. Moreover, no partisan-blind drawn district is as heavily Democratic as the 75.5 percent number Bump received in District 7.

Besides the packing of Democrats in District 7, there is an overall general tendency for Massachusetts residential patterns to operate more favorably for Republicans than Democrats. That much is signaled by the partisan-blind line drawing which demonstrates that even with 51 percent of the vote Bump is expected to receive a majority in just four of nine

<sup>8</sup>A further check on all 38 states with three or more congressional districts shows similar levels of high partisan predictability everywhere but Oklahoma and West Virginia.

<sup>9</sup>We could rely on the Deval Patrick versus Charlie Baker 2010 gubernatorial contest, but that election had a third-party candidate who received eight percent of the vote. Applying the analysis about to be presented using the auditor race to the governor race, or to other elections between 2006 and 2010, all lead to the same conclusion.

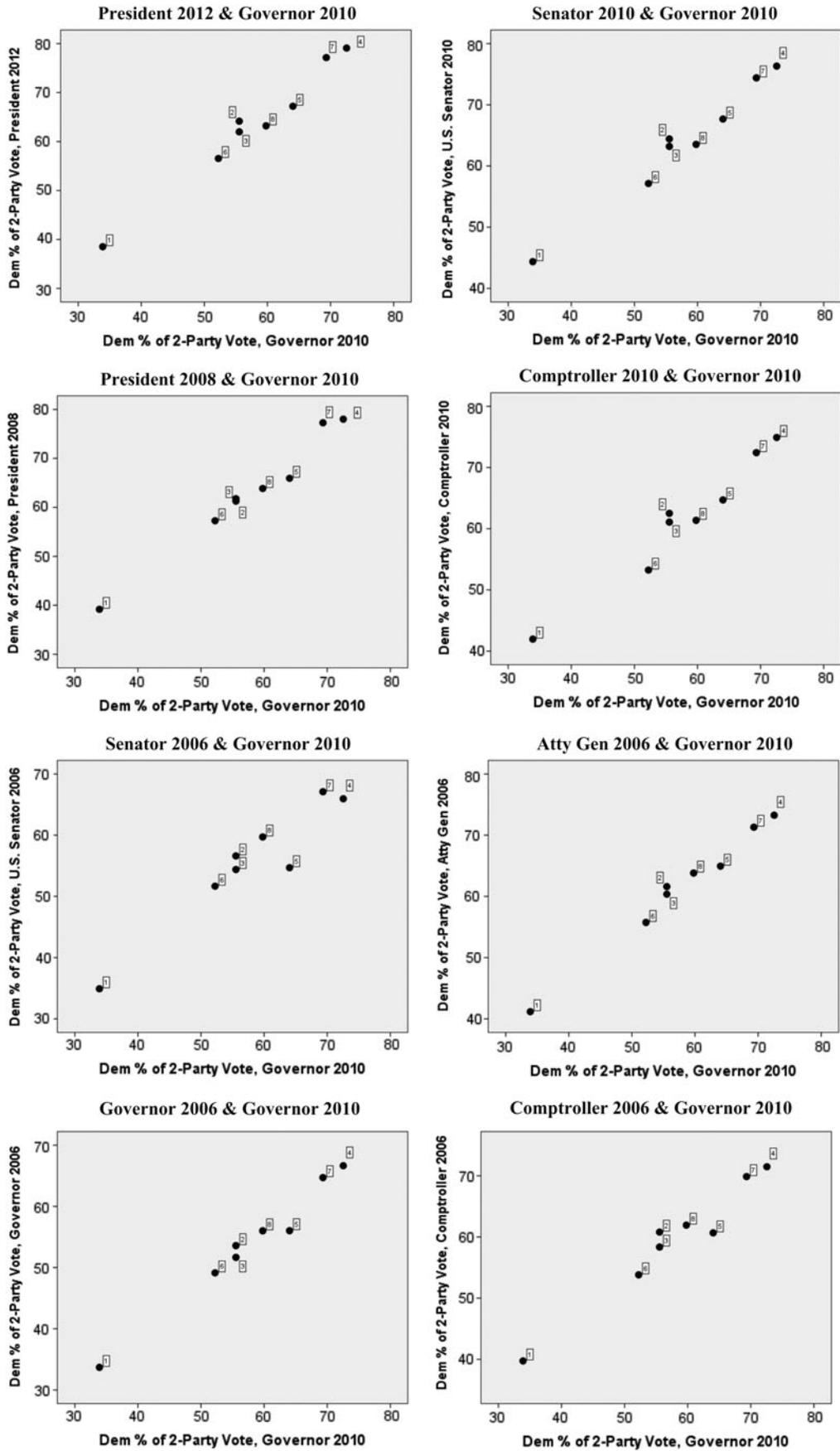


FIG. 1. Partisan predictability as shown via the consistent alignment of partisan voting patterns in eight pairs of MD elections.

TABLE 1. CHECKING MARYLAND CONGRESSIONAL DISTRICTS FOR INDICATIONS OF CRACKING: GOVERNOR ELECTION 2010

District rank, least to most	#1 Actual district number	#2 Observed Dem vote %	#3 Expected Dem vote %	#4 <sup>a</sup> Probability expected less than observed
1	1	33.9	37.7	76/10,000
2	6	52.2	41.6	9999/10,000
3	2	55.5	45.1	9962/10,000
4	3	55.5	55.3	5307/10,000
5	8	59.8	63.6	1953/10,000
6	5	64.0	69.5	337/10,000
7	7	69.3	74.1	764/10,000
8	4	72.5	82.4	45/10,000

<sup>a</sup>The numbers in this column represent the probability that when drawing from 10,000 district plans created via a partisan-blind computer process the first through eighth ranked least Democratic district would have districts below the vote percentage received by the Democratic candidate.

Examples:

1. In the first ranked district (actual CD 1), the numbers show that among the 10,000 maps the least Democratic district in each map has an average Democratic vote of 37.7 percent (column #3), and only 76 of the 10,000 partisan-blind plans (column #4) has its least Democratic district with a vote percentage less than the actual observed percentage of 33.9 (column #2). A district with such a low Democratic percentage is abnormally packed.

Districts at ranks 2 and 3 have abnormally high Democratic percentages inasmuch as Maryland’s second and third least Democratic districts would have less than a one percent chance of having vote percentages as high as 52.2 and 55.5.

districts. In short, there is no evidence that Massachusetts’ Democrats are sweeping all nine congressional districts because the district lines have been drawn in some way helpful to them. That is not true in general or in any particular district.

Ohio. The Ohio design of congressional districts, under the watchful eye of then-Speaker of the House John Boehner, was designed to bring about a 12–4 Republican delegation majority (Barone and McCutcheon 2013, 1291–2). It did just that. As the numbers in Table 3 reveal, the accomplishment required a good deal of gerrymandering. Using the Obama versus McCain two-party Democratic presidential vote percentages arrayed from low to high together with expectations from 10,000 partisan blind maps, the obvious force of the gerrymandering can be seen in four districts (3, 9, 11, and 13) where Democrat votes are packed beyond any reasonable expectation. Among the four, between no district and fewer than one half of one percent is expected to be as packed as Democrats are in these four. The spillover effect and the harm to Democratic voters is seen in the five districts (1, 16, 7, 14, and 10) where their votes are cracked, with vote percentages between

TABLE 2. CHECKING MASSACHUSETTS CONGRESSIONAL DISTRICTS FOR INDICATIONS OF CRACKING: STATE AUDITOR ELECTION 2010

District rank, least to most	#1 Actual district number	#2 Observed Dem vote %	#3 Expected Dem vote %	#4 <sup>a</sup> Probability expected less than observed
1	6	45.5	42.1	9986/10,000
2	3	46.4	45.1	9532/10,000
3	4	47.5	46.1	9900/10,000
4	9	47.8	47.1	9530/10,000
5	8	49.1	48.7	6289/10,000
6	2	49.4	51.1	351/10,000
7	5	52.9	58.6	188/10,000
8	1	55.5	61.3	2/10,000
9	7	75.5	66.6	10,000/10,000

<sup>a</sup>The numbers in this column represent the probability that when drawing from 10,000 district plans created via a partisan-blind computer process the first through ninth ranked least Democratic district would have districts below the vote percentage received by the Democratic candidate.

Examples:

1. In the first ranked district (actual CD 6), the numbers show that among the 10,000 maps the least Democratic district in each map has an average Democratic vote of 42.1 percent (column #3), and almost surely a partisan-blind district plan would have a Democratic vote percentage below 45.5. Indeed the lowest through eighth ranked districts are all, on average, more favorable to Republicans.
2. The district at rank 9 (actual CD 7) has a higher Democratic vote percentage than any district that could be expected to be drawn through a partisan-blind process. It is abnormally packed with Democratic voters.

47.7 and 50, versus the reasonable expectation that districts at ranks 8 through 12 would have Democratic majorities, within the vote percentage range from 51 to 57. Each and all five of these districts would certainly appear to be above the bar set by the Court’s reasoning in *Whitford*.

Illinois. Analyzing the possible unfairness in Illinois’ congressional districts has to begin with this recognition: second only to New York, the residential patterns in Illinois are strongly biased in favor of Republicans. The state is politically competitive, but a large proportion of its Democrats reside in and around Chicago. With Democrats in control of both legislative chambers and the governor’s office at the time of redistricting, a good case can be made that state lawmakers did everything they could to help their Democratic co-partisans seeking seats in the U.S. House (see, e.g., Barone and McCutcheon 2013, 541). Despite the outcries of unfairness in some quarters of the press and a court seeing a “blatant political move” (quoted above), the reality as shown in Table 4 is that the Democrats’ self-help maneuvering was largely a matter of tamping

TABLE 3. CHECKING OHIO CONGRESSIONAL DISTRICTS FOR INDICATIONS OF CRACKING: PRESIDENTIAL ELECTION 2008

District rank, least to most Democratic vote support	#1 Actual district number	#2 Observed Dem vote %	#3 Expected Dem vote %	#4 <sup>a</sup> Probability expected less than observed
1	8	38.8	38.0	6542/10,000
2	4	44.5	40.4	9902/10,000
3	2	45.0	42.6	9259/10,000
4	12	45.4	44.8	6827/10,000
5	6	45.6	46.2	2794/10,000
6	15	46.9	47.6	3156/10,000
7	5	46.9	49.3	477/10,000
8	1	47.7	51.0	181/10,000
9	16	47.9	52.9	8/10,000
10	7	47.9	54.5	0/10,000
11	14	49.8	56.0	0/10,000
12	10	50.0	57.2	0/10,000
13	13	63.5	58.4	10,000/10,000
14	9	67.9	59.7	10,000/10,000
15	3	68.3	62.0	9995/10,000
16	11	82.7	74.1	9954/10,000

<sup>a</sup>The numbers in this column represent the probability that when drawing from 10,000 district plans created via a partisan-blind computer process the first through sixteenth ranked least Democratic district would have districts below the vote percentage received by the Democratic candidate.

Examples:

1. In the districts ranked 13 through 16 (actual CDs 13, 9, 3, and 11), the numbers show that among the 10,000 maps the four most Democratic districts are each packed with an excess percentage of Democrats.

Districts at rank 9 through 12 have a lower Democratic vote percentage than could plausibly be expected for the ninth through twelfth least Democratic districts in Ohio. Democratic voters in at least four Ohio districts are having their votes cracked.

down some of the pro-Republican effects of residential patterns.

After arrangement of two-party Democratic percentages from the 2010 gubernatorial election from low to high, the four districts at ranks 8 to 11 (i.e., districts 12, 8, 11, and 10) have Democratic percentages higher than could reasonably be expected. Even with that favorable boost in those four, only one of the four was carried by the Democratic gubernatorial candidate. And this is despite the fact that the candidate, Pat Quinn, won the election with 50.5 percent of the two-party vote (the results including all candidates were 46.8 percent for Quinn, 45.9 for the Republican Bill Brady, and 7.3 percent for three other candidates). In other words, despite winning the election and despite the boost lawmakers gave to Democratic prospects in districts 12, 8, 11, and 10, Quinn carried only 7 of the 18 districts. That the Democrats maneuvered to help themselves is unquestionable; that the Republicans suffered no injury to their representational rights

TABLE 4. CHECKING ILLINOIS CONGRESSIONAL DISTRICTS FOR INDICATIONS OF CRACKING: GOVERNOR ELECTION 2010

District rank, least to most Democratic vote support	#1 Actual district number	#2 Observed Dem vote %	#3 Expected Dem vote %	#4 <sup>a</sup> Probability expected less than observed
1	15	28.4	32.7	3/10,000
2	18	29.3	34.2	0/10,000
3	16	35.3	35.2	5993/10,000
4	14	36.7	36.5	7317/10,000
5	6	37.1	37.9	2601/10,000
6	13	40.1	40.2	4442/10,000
7	17	42.5	42.3	5988/10,000
8	12	47.0	43.4	10,000/10,000
9	8	47.7	44.3	10,000/10,000
10	11	49.5	45.4	10,000/10,000
11	10	49.6	47.3	9473/10,000
12	3	51.5	50.6	6988/10,000
13	9	58.6	57.5	6288/10,000
14	5	59.6	63.3	1481/10,000
15	4	75.0	69.7	9510/10,000
16	1	76.9	74.9	7867/10,000
17	2	77.8	81.4	1692/10,000
18	7	84.3	91.5	544/10,000

<sup>a</sup>The numbers in this column represent the probability that when drawing from 10,000 district plans created via a partisan-blind computer process the first through eighteenth ranked least Democratic district would have districts below the vote percentage received by the Democratic candidate.

Examples:

1. In districts ranked 8 through 10, the numbers show that among the 10,000 maps the Democratic vote percentages are higher than could be expected from a partisan-blind process. That is, the districts are more favorable to Democrats, though in all three cases no so favorable as to have the Democratic candidate carry any of the three districts, or to carry more than 7 of 18 districts despite winning a majority of the two-party vote.
2. Districts at rank 17 through 18 have a lower Democratic vote percentage than could plausibly be expected for the two most Democratic districts in Illinois. Democratic voters in these two districts have been unpacked compared to partisan-blind line drawing.

is just as unquestionable. As the Court remarked when evaluating similar maneuvering to mitigate the would-be effects of adverse residential patterns to one party's electoral prospects, "interest should be at its lowest ebb when a State purports fairly to allocate political power to the parties in accordance with their voting strength and, within quite tolerable limits, succeeds in doing so" (*Gaffney v. Cummings* 1973, 754).

#### Checking for vote weight dilution

Application of the equal vote weight standard to check for injurious gerrymandering is not designed either to serve as a counterpoint or to quibble with the conclusions just drawn about the entrenchment forms of gerrymandering in Ohio or Illinois. If the conclusions were at variance, that would be a serious problem for

TABLE 5. CHECKING FOR CONSISTENT GERRYMANDER BIAS IN ILLINOIS (ALLEGED TO BE OPERATING AGAINST REPUBLICANS)

State	Year	Office	Total vote %	Mean district vote %	Median district vote %	Turnout bias <sup>a</sup>	Obs gerry-mander bias <sup>b</sup>	Exp gerry-mander bias	Observed districts carried	Expected districts carried
Illinois	2008	President	62.73	63.15	61.52	.41	-1.63	-5.57	16	16.29
		U.S. Senate	70.40	70.65	68.78	.25	-1.87	-5.46	18	18.00
18 Districts	2010	Atty Gen.	67.16	67.49	65.22	.33	-2.27	-5.34	17	17.98
		Comp	43.72	44.73	40.87	1.01	-3.86	-7.46	4	4.83
		Governor	50.46	51.50	48.62	1.04	-2.88	-6.70	7	6.55
		U.S. Senate	49.15	49.98	45.51	.82	-4.47	-6.96	6	6.17
		Sec. of State	72.12	72.32	70.34	.20	-1.98	-4.08	18	18.00
		Treasurer	47.67	48.67	44.90	1.00	-3.78	-7.46	6	5.84

<sup>a</sup>Turnout bias is the mean district vote percentage minus the total vote percentage.

<sup>b</sup>Observed gerrymander bias is the median district vote percentage minus the mean district vote percentage.

one, the other, or both approaches. The point, instead, is to indicate that the vote weight standard reaches the same conclusion, rely on a different theoretical framing, and employ a more easily manageable analysis compared to the district-specific approach.

Recall that once we have evidence of strongly predictable partisan voting patterns, which we do, the next question asked by the equal vote weight standard is whether a consistent bias runs against the disfavored party. Checking for bias is a matter of calculating the arithmetic median-mean difference in two-party district vote percentages. When we calculate the difference for eight Illinois statewide elections from 2008 and 2010, as a mapmaker could easily check prior to enactment or a court could check if called upon afterward, the results reported in Table 5 show the enacted map has a gerrymander bias running persistently against Democrats. That is the end of the inquiry. There is no entrenchment form of gerrymandering injurious to Republicans. As the press and court commentators cited above suggest, an idea about “gaining an ad-

vantage” could be defined to include drawing lines to overcome a so-called natural gerrymander resting on residential patterns. But, without forsaking the principle expressed in *Gaffney*, such an idea has little to do with producing harm except to preserve harm that nature itself serves up.

The evidence of the Ohio gerrymander requires going through all five prongs of the equal vote weight analysis. As noted, voting patterns in Ohio are predictably partisan. As shown in Table 6, the median-mean differences in all ten statewide elections for which we have data show an asymmetry bias between 3.8 and 5.8 points running against Democrats. That bias receives but minor compensation from typically one-half to two-thirds of a percentage point of turnout bias favoring Democrats. Third, the asymmetry bias from gerrymandering is consistently three to five points larger than one could expect from residential patterns. With that information in hand, the expectation is that Democrats likely need to win 54 to 56 percent of the vote statewide to carry a majority of Ohio’s districts. And, in

TABLE 6. CHECKING FOR CONSISTENT GERRYMANDER BIAS IN OHIO (ALLEGED TO BE OPERATING AGAINST DEMOCRATS), WITH FURTHER CHECKS FOR VIOLATIONS OF MAJORITY RULE

State	Year	Office	Total vote %	Mean district vote %	Median district vote %	Turnout bias <sup>a</sup>	Obs gerry-mander bias <sup>b</sup>	Exp gerry-mander bias	Observed districts carried	Expected districts carried
Ohio	2008	President	52.33	52.43	47.81	.09	-4.62	-.24	5	9.05
16 Districts	2010	Atty Gen.	49.32	49.72	45.06	.40	-4.67	-.14	4	7.37
		Auditor	47.21	47.72	43.90	.51	-3.82	-.61	4	5.94
		Governor	48.96	49.45	44.39	.49	-5.06	-.52	5	6.50
		U.S. Senate	40.94	41.62	35.82	.68	-5.80	-.56	4	2.32
		Sec. of State	43.58	44.20	39.10	.61	-5.10	-.16	4	3.11
		Treasurer	42.67	43.33	37.93	.66	-5.40	-.53	4	2.73
	2012	President	51.51	51.67	46.37	.15	-5.29	-.29	4	8.39
U.S. Senate		53.15	53.33	48.75	.18	-4.58	-.10	6	9.17	

<sup>a</sup>Turnout bias is the mean district vote percentage minus the total vote percentage.

<sup>b</sup>Observed gerrymander bias is the median district vote percentage minus the mean district vote percentage.

fact, in the three elections Democrats won with 51.5 to 53.2 percent of the statewide vote, their candidate carried just four, five, and six of the state's 16 districts. From a simple analysis of the eight elections prior to enactment of the plan, mapmakers could have known these facts. A court viewing the facts after enactment would also know that the same pattern held in the two statewide elections in 2012. Finally, an after-the-fact further check on what has occurred in the three U.S. House elections after 2012 shows that Democrats are likely consigned to winning just four districts throughout the decade and, in even a best-case scenario, are highly unlikely to win more than six House seats in a very good year for the Democratic Party.

### CONCLUSION

Despite the anxious anticipation of a Supreme Court ruling on a manageable standard for identifying gerrymandering, the *Whitford* Court took but one minor step. It announced that if there is a manageable standard, it will have to follow from a threshold demonstration of a plaintiff's district-specific injury to her or his individual representational rights. We foresee two paths forward. One follows closely the Court's directive for analyzing dilution of an individual's right to fair and equal representation. Its focal point is on district-specific exclusion arising from an individual finding herself or himself in a cracked district with de minimis prospect of being able to elect a candidate of choice. Such a showing can be accomplished, at least so far as a showing of effect is concerned, by constructing a set of fairly drawn, partisan-blind alternative district plans and comparing the likelihood that an alleged cracked district is highly unlikely but for a purpose to diminish identifiable partisan voters' ability to elect a candidate of their choice.

A second approach rests on a legal theory of vote dilution not in the sense of a diminished ability to elect a candidate of choice but in the sense that the choice of district lines caused unequal vote weights for supporters of the two major parties. This sort of constitutional affront occurs only in gerrymandered jurisdictions where the enacting party seeks to entrench itself in power regardless of their majority vote status.

The choice of which path to pursue rests in large part on whether the allegation is of district-specific

exclusion or system-wide entrenchment. Both paths lead to re-empowering voters to make the choice of who represents them without the partisan affiliation of the representative being foreordained at the beginning of a decade.

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